WSR 19-13-001

PERMANENT RULES

EMPLOYMENT SECURITY DEPARTMENT

[Filed June 5, 2019, 3:03 p.m., effective July 6, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: The employment security department (ESD) is responsible for implementing the paid family and medical leave program in accordance with Title 50A RCW. Rule making will be done in several distinct phases. In Phase 4, ESD includes definitions, clarification about assessing and collecting premiums, continuation of benefits, fraud, and claim processes for claim determinations. Phase 4 also includes procedures for how the department will determine and change an occurrence of fraud.

Citation of Rules Affected by this Order: New WAC 192-500-110, 192-500-120, 192-500-130, 192-500-140, 192-500-150, 192-500-160, 192-500-170, 192-510-025, 192-610-070, 192-610-075, 192-610-080, 192-610-085, 192-620-005, 192-620-010, 192-620-020, 192-620-025, 192-800-005, 192-800-010, 192-800-015, 192-630-005, 192-630-010, and 192-630-015.

Statutory Authority for Adoption: RCW 50A.04.215.

Adopted under notice filed as WSR 19-07-035 on March 13, 2019.

A final cost-benefit analysis is available by contacting Christina Streuli, ESD, P.O. Box 9046, Olympia, WA 98507-9046, phone 360-791-6710, TTY 711, email cstreuli@esd.wa.gov, online portal https://www.peakdemocracy.com/portals/289/forum_home?phase=open.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 22, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 5, 2019.

April Amundson
Policy and Rules Manager
Paid Family and Medical Leave

NEW SECTION

WAC 192-500-110 Week. A "week" is a period of seven consecutive calendar days beginning on Sunday 12:00 a.m. and ending at 11:59 p.m. the following Saturday.

NEW SECTION

WAC 192-500-120 Employee fraud. (1) "Fraud" means an action taken by an employee where either of the following is determined to have occurred:

(a) Willful nondisclosure as defined in WAC 192-500-140; or

(b) Misrepresentation as defined in WAC 192-500-150.

(2) A finding of fraud will result in a disqualification of benefits and applicable penalties under Title 50A RCW.

NEW SECTION

WAC 192-500-130 Nondisclosure. "Nondisclosure" occurs when information that is known or should have been known by the employee at the time it is requested by the department, is not disclosed either inadvertently or through unintentional oversight.

NEW SECTION

WAC 192-500-140 Willful nondisclosure. "Willful nondisclosure" occurs when:

(1) An employee omits or fails to disclose information;

(2) The employee either knew or should have known that the information should have been provided;

(3) The information concerned a fact that was material to the employee's rights and responsibilities under Title 50A RCW; and

(4) The employee omitted or did not disclose the information with the intent that the department would take action on other information the employee did provide.

NEW SECTION

WAC 192-500-150 Misrepresentation. "Misrepresentation" occurs when:

(1) The employee has made a statement or provided information;

(2) The statement was false;

(3) The employee either knew or should have known the statement or information was false when making or submitting it;

(4) The statement or submission concerned a fact that was material to the employee's rights and responsibilities under Title 50A RCW; and

(5) The employee made the statement or submitted the information with the intent that the department would rely on the statement or information when taking action.

NEW SECTION

WAC 192-500-160 Continued claim. (1) An employee is a "continued claim" recipient if the employee:

(a) Is eligible for benefits; and

(b) Has received credit for the waiting period or payment of benefits for one or more weeks in a claim year and in the current continued claim series.

(2) Continued claim status will end following four or more consecutive weeks for which the employee does not file a claim or is not taking paid family or medical leave.

NEW SECTION

WAC 192-500-170 Self-employed. (1) A "self-employed" person is:

(a) A sole proprietor;

(b) A joint venturer or a member of a partnership that carries on a trade or business, contributes money, property, labor or skill and shares in the profits or losses of the business;

(c) A member of a limited liability company;

(d) An independent contractor who works as described in RCW 50A.04.010 (7)(b)(ii); or

(e) Otherwise in business for oneself as indicated by the facts and circumstances of the situation, including a part-time business.

(2) A corporate officer is an employee and not self-employed.

NEW SECTION

WAC 192-510-025 What wages are reportable to the department for premium assessment purposes? (1) Examples of wages reportable to the department for premium assessment purposes include, but are not limited to:

(a) Salary or hourly wages;

(b) Cash value of goods or services given in the place of money;

(c) Commissions or piecework;

(d) Bonuses;

(e) Cash value of gifts or prizes;

(f) Cash value of meals and lodging when given as compensation;

(g) Holiday pay;

(h) Paid time off, including vacation leave and sick leave, as well as associated cash outs, unless these wages are considered supplemental benefit payments provided by the employer;

(i) Bereavement leave;

(j) Separation pay including, but not limited to, severance pay, termination pay, and wages in lieu of notice;

(k) Value of stocks at the time of transfer to the employee if given as part of a compensation package;

(l) Compensation for use of specialty equipment, performance of special duties, or working particular shifts; and

(m) Stipends/per diems unless provided to cover a past or future cost incurred by the employee as a result of the performance of the employee's expected job functions.

(2) Examples of what the department will not consider wages include, but are not limited to:

(a) A payment from an employer benefit that is not part of the employee's standard compensation.

Example: While on paid medical leave, an employee receives sixty-one percent of the employee's typical weekly wage from the state. Through an internal short-term disability benefit, the employer pays the employee the remaining thirty-nine percent of the employee's typical weekly wage as a supplemental benefit payment, bringing the employee's total benefit to one hundred percent of the employee's typical weekly wage. Since this supplemental benefit payment is not part of the employee's standard compensation, it is not considered a wage, and should not be reported on either the employee's weekly claim or the employer's quarterly report.

(b) Any payment made to an employee to cover a past or future cost incurred by the employee related to the performance of the employee's expected job functions. Such costs include, but are not limited to, costs of meals and travel.

Example: An employer pays a per diem to an employee on a business trip to cover the cost of local travel and meals. This amount is not considered a wage, even if the per diem exceeds the actual cost incurred.

(c) The amount of any payment made (including any amount paid by an employer for insurance or annuities, or into a fund to provide for any such payment) to, or on behalf of, an individual or the individual's dependents under a plan or system established by an employer which makes provision generally for individuals performing service for the employer (or for such individuals generally and their dependents) or for a class or classes of such individuals (or for a class or classes of such individuals and their dependents) on account of:

(i) Retirement;

(ii) Sickness or accident disability;

(iii) Medical or hospitalization expenses in connection with sickness or accident disability; or

(iv) Death.

NEW SECTION

WAC 192-610-070 Can an employee cancel a claim after it has been submitted to the department? (1) If an employee has not been issued a payment on the claim, an employee may cancel a claim within thirty days of the date of the submitted application for benefits.

(2) The commissioner, at the commissioner's discretion, may permit cancellation of a claim without an issued payment after thirty days from the date of the submitted application for benefits in extreme and unusual circumstances.

(3) An employee may not cancel a claim that has been issued a payment. The department will only cancel a claim that has been issued a payment in any amount if the department made the payment due to departmental error.

(4) If the department has denied benefits before the request to cancel the claim was received, the denial will remain in effect.

(5) The denial of a request to cancel a claim is not subject to appeal.

NEW SECTION

WAC 192-610-075 Can an employer require an employee to take paid time off in place of paid family or medical leave benefits? Employers may not require employees to take paid vacation leave, paid sick leave, or other forms of paid time off provided by the employer before, in place of, or concurrently with paid family or medical leave benefits.

NEW SECTION

WAC 192-610-080 When should an employee reopen a claim? (1) When an employee has an existing claim year and more than four consecutive weeks have passed since the employee filed a weekly claim for benefits, or the employee

experiences a new qualifying event, the employee must reopen the claim in order to receive benefit payments.

(2) If the duration of leave for a qualifying event has not expired:

(a) The employee can reopen the claim and file weekly claims as necessary.

(b) If the employee requests to claim the weeks prior to the date the claim is reopened, the employee must have good cause as defined in WAC 192-610-040 to claim prior weeks.

(3) If the duration of leave for the qualifying event has expired or the reason for leave is not the same as the previous qualifying event, the employee must reopen the claim by updating the application as required under WAC 192-610-010 before benefits will be paid.

NEW SECTION

WAC 192-610-085 How should an employee reopen a claim? An employee may reopen a claim by:

(1) By using the department's online services;

(2) Contacting the paid family and medical leave customer care center by telephone; or

(3) Alternate methods authorized by the commissioner.

Chapter 192-620 WAC

WEEKLY BENEFITS

NEW SECTION

WAC 192-620-005 What is the minimum claim duration? (1) The minimum claim duration for paid family or medical leave is eight consecutive hours in a week. If an employee on leave claims eight consecutive hours at any point during a week, the minimum claim duration is satisfied.

Example 1: An employee typically works six-hour shifts each weekday. The employee takes leave Monday, works Tuesday and Wednesday, and takes leave Thursday and Friday. The minimum claim duration requirement would be satisfied with the leave taken Thursday and Friday. That employee could also include the hours missed on Monday in the weekly claim.

(2) If an employee on leave typically works less than eight-hour shifts, the employee will meet the requirement of a minimum claim when the employee has missed eight consecutive hours at any point during a week the employee typically would have been scheduled.

Example 2: An employee typically works four-hour shifts. The employee will need to take two consecutive shifts of leave in a week to have a minimum claim.

NEW SECTION

WAC 192-620-010 How should employees request benefit payments? (1) An employee must file a weekly claim to receive benefits.

(2) An employee may file a weekly claim by:

(a) Using the department's online services;

(b) Using the department's telephone services; or

(c) The commissioner may authorize alternative methods of filing weekly claims.

(3) A weekly claim can only be made after the end of the week being claimed.

(4) A weekly claim must be completed in its entirety. Incomplete weekly claims will not be processed.

(5) No more than four weeks of claims can be made at one time, except in limited circumstances, such as backdating for good cause as defined in WAC 192-610-040.

NEW SECTION

WAC 192-620-020 What information will the department request from employees when filing for weekly benefits? (1) The department must determine if an employee qualifies for benefits when the employee files a weekly claim for the payment of benefits. For the week that the employee is claiming, the department will ask if the employee:

(a) Worked during the week, and for the hours associated with that work;

(b) Received any paid leave such as vacation leave, sick leave, or other paid time off that was not considered a supplemental benefit payment provided by the employer, and the hours associated with that leave;

(c) Received any benefit that may disqualify the employee for paid family or medical leave, such as unemployment insurance; and

(d) Experienced a change in the qualifying event that affects the eligibility for, or duration of, paid family or medical leave benefits.

(2) The employee may be asked to provide additional information.

NEW SECTION

WAC 192-620-025 What happens if an employee is being conditionally paid benefits? (1) If an employee is a continued claim recipient, and eligibility is questioned by the department, the employee will be conditionally paid benefits for weeks the employee claims without delay.

(2) The employee may request the department to hold conditional payments until the question of eligibility is resolved when the employee has been notified the department questions their eligibility.

(3) An overpayment for a conditionally paid week cannot be waived and must be repaid.

Chapter 192-630 WAC

CLAIM DETERMINATIONS

NEW SECTION

WAC 192-630-005 What happens if there is a question regarding whether an employee is qualified for benefits? (1) The department will send interested parties a notice when the department has a question of whether an employee is qualified for benefits prior to making a determination on the claim. The notice will include:

(a) The department's questions regarding the employee's qualification for benefits; and

(b) The date by which the interested parties must respond. This date will be no earlier than ten calendar days from the date the notice is sent. Reasonable mailing time will be added when the notice is sent via postal service.

(2) The employee has a right to respond to the department on qualification issues.

NEW SECTION

WAC 192-630-010 What happens if an interested party does not respond to the department's request for information? (1) If an interested party fails to respond by the due date on the notice provided under WAC 192-630-005, the department will make a determination based on available information.

(2) Subject to RCW 50A.04.510, if benefits are denied because the employee did not respond to a request for information, the denial will remain in effect until the employee provides sufficient information to establish that the employee is qualified for paid family or medical leave.

NEW SECTION

WAC 192-630-015 How will a determination be made about an employee's eligibility for benefits? (1) When the department has issued a notice under WAC 192-630-005 the department will not make a determination on whether an employee qualifies for paid family or medical leave until all interested parties have had an opportunity to provide information about the question of eligibility by the due date indicated on the notice.

(2) If new facts are discovered before the determination is made, the department will provide interested parties with an opportunity to respond to the new information.

(3) After the department makes a determination, all interested parties will be provided with a copy of that determination.

(4) If the department receives new and relevant information after a determination is made:

(a) The information will be considered by the department;

(b) Interested parties will be given an opportunity to respond, if necessary; and

(c) The department may make a new determination based on the newly provided information.

NEW SECTION

WAC 192-800-005 What is the standard the department will use to determine fraud? The department will determine if fraud has been committed under WAC 192-500-120 based on a showing of clear, cogent, and convincing evidence.

NEW SECTION

WAC 192-800-010 How will the disqualification periods and penalties be assessed for an employee who is determined to have committed fraud? (1) The department will assess disqualification periods and penalties for each fraud determination individually under RCW 50A.04.045(3).

(2) All disqualifications and penalties in RCW 50A.04.045(3) are in addition to the required repayment of any benefits paid as a result of fraud.

(3) The department will assess the fraud penalties established under RCW 50A.04.045(3) based on the percentage of benefits paid for those weeks in which the fraud occurred or that were paid as a result of fraud. The penalty will not apply to other weeks that may be included in the same eligibility decision.

(4) The penalty amount, if not a multiple of one dollar, is rounded up to the next higher dollar.

NEW SECTION

WAC 192-800-015 When will the department change an occurrence of fraud? (1) Determinations of fraud are appealable. If an employee has been assessed with multiple determinations of fraud and any determination changes due to a redetermination or an appeal, the department will send a new fraud determination showing the corrected disqualification period and penalty under Title 50A RCW.

Example: The department issues a determination that an employee has committed a third occurrence of fraud. Through appeal, the second occurrence is overturned. The department will send a redetermination of the third occurrence indicating that it is now the second occurrence of fraud and the appropriate penalties will apply.

(2) Although the revised determination in subsection (1) of this section does not restart the appeal period included in the original decision, employees may appeal a change in the penalty amount or length of disqualification.

WSR 19-13-006
PERMANENT RULES
HEALTH CARE AUTHORITY

[Filed June 6, 2019, 12:24 p.m., effective July 7, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: The agency is amending WAC 182-550-2900 and adding WAC 182-550-2950 to describe the parameters for fourteen-day provider preventable readmissions. These changes distinguish provider preventable fourteen-day readmission from other fourteen-day readmissions. The amended rules also establish the agency's payment policy for provider preventable fourteen-day readmissions, identify claims that do not qualify as provider preventable, and describe the agency's postpayment review process.

Citation of Rules Affected by this Order: New WAC 182-550-2950; and amending WAC 182-550-2900.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160.

Adopted under notice filed as WSR 19-10-060 on April 30, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 1, Amended 1, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 1, Amended 1, Repealed 0.

Date Adopted: June 6, 2019.

Wendy Barcus
Rules Coordinator

AMENDATORY SECTION (Amending WSR 18-11-074, filed 5/16/18, effective 7/1/18)

WAC 182-550-2900 Payment limits—Inpatient hospital services. (1) To be eligible for payment for covered inpatient hospital services, a hospital must:

(a) Have a core-provider agreement with the medicaid agency; and

(b) Be an in-state hospital, a bordering city hospital, a critical border hospital, or a distinct unit of that hospital, as defined in WAC 182-550-1050; or

(c) Be an out-of-state hospital that meets the conditions in WAC 182-550-6700.

(2) The agency does not pay for any of the following:

(a) Inpatient care or services, or both, provided in a hospital or distinct unit to a client when a managed care organization (MCO) plan is contracted to cover those services.

(b) Care or services, or both, provided in a hospital or distinct unit provided to a client enrolled in the hospice program, unless the care or services are completely unrelated to the terminal illness that qualifies the client for the hospice benefit.

(c) Ancillary services provided in a hospital or distinct unit unless explicitly spelled out in this chapter.

(d) Additional days of hospitalization on a non-DRG claim when:

(i) Those days exceed the number of days established by the agency or mental health designee under WAC 182-550-2600, as the approved length of stay (LOS); and

(ii) The hospital or distinct unit has not received prior authorization for an extended LOS from the agency or mental health designee as specified in WAC 182-550-4300(4). The agency may perform a prospective, concurrent, or retrospective utilization review as described in WAC 182-550-1700, to evaluate an extended LOS. A mental health designee may also perform those utilization reviews to evaluate an extended LOS.

(e) Inpatient hospital services when the agency determines that the client's medical record fails to support the medical necessity and inpatient level of care for the inpatient admission. The agency may perform a retrospective utilization review as described in WAC 182-550-1700, to evaluate if the services are medically necessary and are provided at the appropriate level of care.

(f) Two separate inpatient hospitalizations if a client is readmitted to the same or affiliated hospital or distinct unit within fourteen calendar days of discharge and the agency determines that one inpatient hospitalization does not qualify for a separate payment. See WAC 182-550-3000 (7)(f) for the agency's review of fourteen-day readmissions.

(g) Inpatient claims for fourteen-day readmissions considered to be provider preventable as described in WAC 182-550-2950.

(h) A client's day(s) of absence from the hospital or distinct unit.

(((~~(h)~~))) (i) A nonemergency transfer of a client. See WAC 182-550-3600 for hospital transfers.

(((~~(i)~~))) (j) Charges related to a provider preventable condition (PPC), hospital acquired condition (HAC), serious reportable event (SRE), or a condition not present on admission (POA). See WAC 182-502-0022.

(((~~(j)~~))) (k) An early elective delivery as defined in WAC 182-500-0030. The agency may pay for a delivery before thirty-nine weeks gestation, including induction and cesarean section, if medically necessary under WAC 182-533-0400(20).

(3) This section defines when the agency considers payment for an interim billed inpatient hospital claim.

(a) When the agency is the primary payer, each interim billed nonpsychiatric claim must:

(i) Be submitted in sixty calendar day intervals, unless the client is discharged before the next sixty calendar day interval.

(ii) Document the entire date span between the client's date of admission and the current date of services billed, and include the following for that date span:

(A) All inpatient hospital services provided; and

(B) All applicable diagnosis codes and procedure codes.

(iii) Be submitted as an adjustment to the previous interim billed hospital claim.

(b) When the agency is not the primary payer:

(i) The agency pays an interim billed nonpsychiatric claim when the criteria in (a) of this subsection are met; and

(ii) Either of the following:

(A) Sixty calendar days have passed from the date the agency became the primary payer; or

(B) A client is eligible for both medicare and medicaid and has exhausted the medicare lifetime reserve days for inpatient hospital care.

(c) For psychiatric claims, (a)(i) and (b)(i) of this subsection do not apply.

(4) The agency considers for payment a hospital claim submitted for a client's continuous inpatient hospital admission of sixty calendar days or less upon the client's formal release from the hospital or distinct unit.

(5) To be eligible for payment, a hospital or distinct unit must bill the agency using an inpatient hospital claim:

(a) Under the current national uniform billing data element specifications:

(i) Developed by the National Uniform Billing Committee (NUBC);

(ii) Approved or modified, or both, by the Washington state payer group or the agency; and

(iii) In effect on the date of the client's admission.

(b) Under the current published international classification of diseases clinical modification coding guidelines;

(c) Subject to the rules in this section and other applicable rules;

(d) Under the agency's published billing instructions and other documents; and

(e) With the date span that covers the client's entire hospitalization. See subsection (3) of this section for when the agency considers and pays an initial interim billed hospital claim and any subsequent interim billed hospital claims;

(f) That requires an adjustment due to, but not limited to, charges that were not billed on the original paid claim (e.g., late charges), through submission of an adjusted hospital claim. Each adjustment to a paid hospital claim must provide complete documentation for the entire date span between the client's admission date and discharge date, and include the following for that date span:

(i) All inpatient hospital services provided; and

(ii) All applicable diagnosis codes and procedure codes; and

(g) With the appropriate NUBC revenue code specific to the service or treatment provided to the client.

(6) When a hospital charges multiple rates for an accommodation room and board revenue code, the agency pays the hospital's lowest room and board rate for that revenue code. The agency may request the hospital's charge master. Room charges must not exceed the hospital's usual and customary charges to the general public, as required by 42 C.F.R. Sec. 447.271.

(7) The agency allows hospitals an all-inclusive administrative day rate for those days of a hospital stay in which a client no longer meets criteria for the acute inpatient level of care. The agency allows this day rate only when an appropriate placement outside the hospital is not available.

(8) The agency pays for observation services according to WAC 182-550-6000, 182-550-7200, and other applicable rules.

(9) The agency determines its actual payment for an inpatient hospital admission by making any required adjustments from the calculations of the allowed covered charges. Adjustments include:

(a) Client participation (e.g., spenddown);

(b) Any third-party liability amount, including medicare part A and part B; and

(c) Any other adjustments as determined by the agency.

(10) The agency pays hospitals less for services provided to clients eligible under state-administered programs, as provided in WAC 182-550-4800.

(11) All hospital providers must present final charges to the agency according to WAC 182-502-0150.

NEW SECTION

WAC 182-550-2950 Payment limits—Provider preventable fourteen-day readmissions. (1) **Introduction.** The rules in this section establish the medicaid agency's payment policy for inpatient claims for provider preventable fourteen-day readmissions and do not apply to any other rules regarding payment for hospital admissions.

(2) **Applicability.** The rules in this section apply to inpatient hospital claims made for clients enrolled in the fee-for-service program and to clients enrolled in an agency-contracted managed care organization (MCO).

(a) The rules in this section do not apply to:

(i) Professional claims submitted for services rendered in the inpatient setting during a readmission; or

(ii) Claims submitted by critical access hospitals.

(b) The rules in this section apply only to provider preventable readmissions and not to other types of fourteen-day hospital inpatient readmissions that do not qualify for payment for other reasons.

(3) **Provider preventable readmission**.

(a) For the purpose of this section, readmission means an inpatient hospital admission to the same or an affiliated hospital within fourteen calendar days of a discharge from a prior admission and clinically related to the prior admission.

(b) Inpatient claims from hospitals for fourteen-day readmissions that the agency or the agency's designee considers to be provider preventable do not qualify for payment.

(c) A readmission is provider preventable if the agency or the agency's designee determines there is a reasonable expectation the hospital could have prevented the readmission by one or more of the following:

(i) Quality of care provided during the index (initial) hospitalization. The quality of care provided during the index hospitalization must follow current, evidence-based standards of care for the health care specialty at issue and must be:

(A) Safely administered without physically harming the client;

(B) Free from medical error that subsequently results in readmission due to that error;

(C) Evidence based, producing outcomes that are supported by evidence and effective in treating the client. The quality of care must follow the hospital's current standards for care of the client's diagnosis during that treatment period;

(D) Client-centered, focusing on the client's individual needs. The quality of care must be appropriate for the diagnosis and involve the patient in the planning of their care;

(E) Timely, with treatment that did not result in a delay of care, and the client was not prematurely discharged;

(F) Medically necessary for treatment of a diagnosis recognized by the current International Statistical Classification of Diseases and Related Health Problems (ICD); and

(G) Equitable in quality for all clients, regardless of differences in personal characteristics or beliefs.

(ii) Discharge planning. Discharge planning must occur as directed in the Centers for Medicare and Medicaid Services' (CMS) interpretive guidelines for 42 C.F.R. Sec. 482.43, in Publication #100-07 State Operations Manual (Rev. 183, October 12, 2018), Appendix A, Section 482.43, Conditions of Participation: Discharge planning (CMS Manual). Discharge planning must include, but is not limited to:

(A) A clearly written discharge plan that actively involves the client or client's representative in the discharge process; and

(B) An assessment of the client's capability for postdischarge care and follow up including, but not limited to:

(I) The client's functional status and cognitive ability;

(II) The type of posthospital care the client requires, and whether such care requires the services of health care professionals or facilities;

(III) The availability of the required posthospital health care services to the client; and

(IV) The availability and capability of family, or friends, or both to provide follow-up care in the home.

(iii) Discharge process. Upon discharge, the provider must meet the following discharge components:

(A) Provide the client with all required prescriptions and provide education regarding the appropriate use of these medications; and

(B) Provide the client with written instructions in the client's primary language.

(I) If written instructions cannot be provided, the hospital must provide verbal instructions through an interpreter and document that the client's questions were answered.

(II) Written instructions must include home care instructions including, but not limited to:

• Contact numbers for discharge-related questions;

• Information describing when the client should call the provider with concerns and when to call 911;

• Dietary restrictions;

• Wound care, when applicable; and

• Activity limitations.

(iv) Postdischarge follow-up. Postdischarge follow-up documents must include:

(A) A complete discharge summary, including case management discharge summaries and a risk assessment score that is accessible by outpatient clinics for ease in care coordination.

(B) Dates and contact numbers for follow-up appointments arranged with the primary care provider for all intensive and high-risk clients before the client leaves the hospital.

(C) Arrangements for medical supplies, equipment, and home care services, as needed, before the client leaves the hospital.

(4) **Exclusions.** The following types of inpatient readmission claims are exempt or do not qualify as provider preventable readmissions:

(a) Inpatient psychiatric care;

(b) Readmissions not clinically related to the index (initial) admission;

(c) Readmissions that are planned or scheduled including, but not limited to:

(i) Admissions for repetitive treatments such as cancer chemotherapy or other required treatments for cancer, transfusions for chronic anemia, burn therapy, dialysis, or other planned treatments for renal failure;

(ii) Planned therapeutic or procedural admissions following diagnostic admissions, when the therapeutic treatment clinically could not occur during the same case; or

(iii) Planned admissions on the same day to a different hospital unit for continuing care (including transfers for mental health, chemical dependency, rehabilitation, and similar transfers that may be technically coded as discharge/admission for billing purposes).

(d) Admissions for required cancer treatments, including treatment-related toxicities or care for advanced-stage cancer;

(e) End of life and hospice care;

(f) Claims for clients who left against medical advice from index admission;

(g) Obstetrical claim admissions after an antepartum admission;

(h) Claims for readmission with a primary diagnosis of mental health or substance use disorder;

(i) Neonatal inpatient services;

(j) Transplant services, when the admission occurs within one hundred eighty days of transplant;

(k) Claims from a different hospital system other than where the index admission occurred;

(l) Claims to resume care for a client because the client did not comply with the discharge plan; or

(m) Readmissions resulting from the client's refusal of the recommended discharge plan and the index hospital making a less appropriate alternative plan to accommodate client preferences.

(5) **Postpayment utilization review.** The agency or the agency's designee performs a postpayment utilization review of the index hospital admission and all fourteen-day readmissions to determine what claims may qualify for recovery.

(6) **Client financial responsibility.** Clients are not financially liable for claims denied based on provider preventable fourteen-day readmissions that would have otherwise been paid by the agency or the agency's designee.

(7) **Dispute resolution.**

(a) Fee-for-service readmissions. If a hospital disputes a determination regarding fee-for-service readmissions, the agency follows the process in chapter 182-502A WAC and the administrative hearing procedure described in chapter 182-526 WAC.

(b) Managed care organization readmissions. MCOs must have an internal dispute resolution process for disputes arising out of a readmission. A hospital must access the MCO's internal dispute resolution process to dispute a provider preventable readmission determination by the MCO, as described in the hospital's individual contract with the MCO.

(c) Final determination review process. If the hospital has exhausted the MCO's internal dispute resolution process and the hospital continues to dispute the determination, the MCO and agency will follow the process regarding the fourteen-day readmission review program as described in the apple health managed care contract.

WSR 19-13-008

PERMANENT RULES

DEPARTMENT OF LICENSING

[Filed June 6, 2019, 1:41 p.m., effective July 7, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: RCW 46.12.600(4) requires market value threshold (MVT) be increased when the target of fifty dollars has been reached. The target has been reached and now requires WAC 308-56A-460 to be updated.

MVT has reached a fifty dollar increase requiring an update to WAC 308-56A-460(3). The new MVT amount on July 1, 2019, is seven thousand nine hundred thirty dollars.

Citation of Rules Affected by this Order: Amending WAC 308-56A-460(3).

Statutory Authority for Adoption: RCW 46.12.600.

Adopted under notice filed as WSR 19-08-082 on April 3, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 1, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 1, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 6, 2019.

Damon Monroe
Rules Coordinator

AMENDATORY SECTION (Amending WSR 12-20-032, filed 9/27/12, effective 10/28/12)

WAC 308-56A-460 Destroyed or wrecked vehicle—Reporting—Rebuilt. (1) **What are total loss, destroyed, salvage, and wrecked vehicles?** For the purposes of this section:

(a) A total loss vehicle is one whose destruction has been reported to the department as described in RCW 46.12.600 by an insurer (insurance companies and self-insurers as described in RCW 46.29.630);

(b) A destroyed vehicle is one whose destruction has been reported to the department as described in RCW 46.12.600 by the vehicle's owner;

(c) A salvage vehicle as defined in RCW 46.04.514;

Note: When used in this section, the terms "destroyed" and "destroyed vehicle" include total loss, destroyed, and salvage vehicles.

(d) A wrecked vehicle as defined in RCW 46.80.010(6).

Note: A vehicle may be considered destroyed or wrecked when the evidence of ownership is a salvage certificate/title, insurance company bill of sale, or wrecker bill of sale from any jurisdiction, or when the evidence of ownership indicates the vehicle may be a destroyed vehicle not reported to the department.

(2) **How are vehicles reported to the department as total loss, destroyed, salvage, or wrecked?**

(a) Insurers may report total loss vehicles to the department:

(i) Electronically through the department's online reporting system. Insurers must destroy ownership documents for a vehicle reported this way; or

(ii) By submitting the certificate of title or affidavit in lieu of title indicating the vehicle is "DESTROYED"; or

(iii) By submitting a completed total loss claim settlement form (TD 420-074).

Note: Reports of total loss vehicles must include the insurer's name, address, and the date of loss.

(b) Registered or legal owners report a vehicle as destroyed by submitting the certificate of title or affidavit in lieu of title indicating the vehicle is "DESTROYED," and must include the registered owner's name, address, and date of loss.

(c) Licensed wreckers report wrecked vehicles as required in RCW 46.80.090.

(d) For vehicles six through twenty years old a statement whether or not the vehicle meets the market value threshold amount as defined in RCW 46.12.600 is also required.

(3) **What is the current market value threshold amount?** The current market value threshold amount is seven thousand ((~~eight~~)) nine hundred ((~~eighty~~)) thirty dollars.

(4) **How is the market value threshold amount determined?** Using the current market value threshold amount described in RCW 46.12.600 each year the department will add the increased value if the increase is equal to or greater than fifty dollars.

(5) **What if the "market value threshold amount" is not provided as required?** If the market value threshold amount is not provided when required, the department would treat the report of destruction as if the market value threshold as described in RCW 46.12.600 has been met. The certificate of title will be branded according to WAC 308-56A-530.

(6) **What documentation is required to obtain a certificate of title after a vehicle is destroyed?** After a vehicle has been reported destroyed or wrecked and is rebuilt, you must submit the following documentation to the department in order to obtain a new certificate of title:

(a) Application for certificate of title as described in RCW 46.12.530;

(b) Certificate of vehicle inspection as described in WAC 308-56A-150;

(c) Bill of sale from the insurer, owner, or wrecker who reported the vehicle's destruction to the department.

(i) Bills of sale from insurers must include a representative's signature and title of office;

(ii) Bills of sale from insurers and wreckers do not need to be notarized;

(iii) Bills of sale from owners shown on department records must be notarized or certified;

(iv) A bill of sale is not required when owners shown on department records retain a destroyed vehicle and apply for a new certificate of ownership;

(v) Releases of interest from lien holder(s) or proof of payment such as a canceled check bearing a notation that it has been paid by the bank on which it was drawn or a notarized statement on a receipt from the legal owner that the debt is satisfied are required when the vehicle is retained by the registered owner(s).

(d) Odometer disclosure statement, if applicable.

(7) **What is required of a Washington licensed vehicle dealer prior to selling a destroyed or wrecked vehicle?** Except as permitted by RCW 46.70.101 (1)(b)(viii), before a

dealer may sell a destroyed or wrecked vehicle under their Washington vehicle dealer license, the dealer must:

(a) Rebuild the vehicle to standards set by the state of Washington or the federal government pertaining to the construction and safety of vehicles; and

(b) Obtain a vehicle inspection by the Washington state patrol; and

(c) Apply for and receive a certificate of ownership for the vehicle, issued in the name of the vehicle dealer.

(8) **Once a destroyed or wrecked vehicle is rebuilt, do the license plates remain with the vehicle?** Whether or not the license plates remain with the vehicle depends on the circumstance:

(a) Standard issue license plates may remain with a destroyed vehicle unless they are severely damaged or the vehicle was issued a department temporary permit described in WAC 308-56A-140;

(b) Replacement license plates are required for wrecked vehicles since Washington licensed wreckers are required by WAC 308-63-070 to remove them;

(c) Special license plates may remain with or be transferred to a destroyed or wrecked vehicle;

(d) Applicants may retain the current license plate number as provided for in RCW 46.16A.200, unless the vehicle was issued a department temporary permit as described in WAC 308-56A-140.

(9) **Will the certificate of ownership or registration certificate indicate "WA REBUILT"?** Salvage or wrecked vehicles meeting the criteria described in WAC 308-56A-530 will be branded "WA REBUILT."

WSR 19-13-010
PERMANENT RULES
HEALTH CARE AUTHORITY

[Filed June 6, 2019, 2:30 p.m., effective July 7, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: The agency replaced references to retirement, survivors, disability insurance and social security disability insurance with old age, survivors, and disability insurance (OASDI). This change is to provide consistent references to OASDI benefits provided under Title II of the Social Security Act in the agency's supplemental security income-related income and resource rules for medicaid. Both of these WAC refer to the same three types of benefits that the Social Security Administration (SSA) pays to eligible beneficiaries. A person who receives one or more of these cash payments is automatically related by category to one or more medicaid eligibility groups. A common term for these SSA benefits is the OASDI program.

Citation of Rules Affected by this Order: Amending WAC 182-512-0550 and 182-512-0700.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160.

Adopted under notice filed as WSR 19-10-079 on May 1, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 2, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 2, Repealed 0.

Date Adopted: June 6, 2019.

Wendy Barcus
Rules Coordinator

AMENDATORY SECTION (Amending WSR 14-07-059, filed 3/14/14, effective 4/14/14)

WAC 182-512-0550 SSI-related medical—All other excluded resources. All resources described in this section are excluded resources for SSI-related medical programs. Unless otherwise stated, interest earned on the resource amount is counted as unearned income.

(1) Resources necessary for a person who is blind or disabled to fulfill a self-sufficiency plan approved by the agency.

(2) Retroactive payments from SSI or ((~~RSDI~~)) old age, survivors, and disability insurance (OASDI), including benefits a person receives under the interim assistance reimbursement agreement with the Social Security Administration, are excluded for nine months following the month of receipt. This exclusion applies to:

(a) Payments received by the person, the person's spouse, or any other person financially responsible for the person;

(b) SSI payments for benefits due for the month(s) before the month of continuing payment;

(c) ((~~RSDI~~)) OASDI payments for benefits due for a month that is two or more months before the month of continuing payment; and

(d) Proceeds from these payments as long as they are held as cash, or in a checking or savings account. The funds may be commingled with other funds, but must remain identifiable from the other funds for this exclusion to apply. This exclusion does not apply once the payments have been converted to any other type of resource.

(3) All resources specifically excluded by federal law, such as those described in subsections (4) through (11) of this section as long as such funds are identifiable.

(4) Payments made under Title II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

(5) The excluded resources described in WAC 182-512-0770 and other resources of American Indians/Alaska Natives that are excluded by federal law.

(6) Restitution payment and any interest earned from this payment to persons of Japanese or Aleut ancestry who were relocated and interned during war time under the Civil Liber-

ties Act of 1988 and the Aleutian and Pribilof Islands Restitution Act.

(7) Funds received from the Agent Orange Settlement Fund or any other funds established to settle Agent Orange liability claims.

(8) Payments or interest accrued on payments received under the Radiation Exposure Compensation Act received by the injured person, the surviving spouse, children, grandchildren, or grandparents.

(9) Payments or interest accrued on payments received under the Energy Employees Occupational Illness Compensation Act of 2000 (EEOICA) received by the injured person, the surviving spouse, children, grandchildren, or grandparents.

(10) Payments from:

(a) The Dutch government under the Netherlands' Act on Benefits for Victims of Persecution (WUV).

(b) The Victims of Nazi Persecution Act of 1994 to survivors of the Holocaust.

(c) Susan Walker vs. Bayer Corporation, et al., 96-C-5024 (N.D. Ill.) (May 8, 1997) settlement funds.

(d) Ricky Ray Hemophilia Relief Fund Act of 1998 P.L. 105-369.

(11) The unspent social insurance payments received due to wage credits granted under sections 500 through 506 of the Austrian General Social Insurance Act.

(12) Tax refunds and earned income tax credit refunds and payments are excluded as resources for twelve months after the month of receipt.

(13) Payments from a state administered victim's compensation program for a period of nine calendar months after the month of receipt.

(14) Cash or in-kind items received as a settlement for the purpose of repairing or replacing a specific excluded resource are excluded:

(a) For nine months. This includes relocation assistance provided by state or local government.

(b) Up to a maximum of thirty months, when:

(i) The person intends to repair or replace the excluded resource; and

(ii) Circumstances beyond the control of the settlement recipient prevented the repair or replacement of the excluded resource within the first or second nine months of receipt of the settlement.

(c) For an indefinite period, if the settlement is from federal relocation assistance.

(d) Permanently, if the settlement is assistance received under the Disaster Relief and Emergency Assistance Act or other assistance provided under a federal statute because of a catastrophe which is declared to be a major disaster by the President of the United States, or is comparable assistance received from a state or local government or from a disaster assistance organization. Interest earned on this assistance is also excluded from resources. Any cash or in-kind items received as a settlement and excluded under this subsection are ((~~considered as~~)) available resources when not used within the allowable time periods.

(15) Insurance proceeds or other assets recovered by a Holocaust survivor.

(16) Pension funds owned by an ineligible spouse. Pension funds are defined as funds held in a(n):

(a) Individual retirement account (IRA) as described by the IRS code; or

(b) Work-related pension plan (including plans for self-employed persons, known as Keogh plans).

(17) Cash payments received from a medical or social service agency to pay for medical or social services are excluded for one calendar month following the month of receipt.

(18) SSA- or division of vocational rehabilitation (DVR)-approved plans for achieving self-support (PASS) accounts, allowing blind or disabled persons to set aside resources necessary for the achievement of the plan's goals, are excluded.

(19) Food and nutrition programs with federal involvement. This includes Washington Basic Food, school reduced and free meals and milk programs and WIC.

(20) Gifts to, or for the benefit of, a person under eighteen years old who has a life-threatening condition, from an organization described in section 501 (c)(3) of the Internal Revenue Code of 1986 which is exempt from taxation under section 501(a) of that code, as follows:

(a) In-kind gifts that are not converted to cash; or

(b) Cash gifts up to a total of two thousand dollars in a calendar year.

(21) Veteran's payments made to, or on behalf of, natural children of Vietnam veterans regardless of their age or marital status, for any disability resulting from spina bifida suffered by these children.

(22) The following are among assets that are not ((~~considered~~)) resources and as such are neither excluded nor counted:

(a) Home energy assistance/support and maintenance assistance;

(b) Retroactive in-home supportive services payments to ineligible spouses and parents; and

(c) Gifts of domestic travel tickets.

(23) For a more complete list, please see ((~~POMS @~~)) the program operations manual system (POMS) at http://policy.ssa.gov/poms.nsf/lnx/0501130050.

AMENDATORY SECTION (Amending WSR 14-07-059, filed 3/14/14, effective 4/14/14)

WAC 182-512-0700 SSI-related medical—Income eligibility. (1) In order to be eligible, a person is required to do everything necessary to obtain any income to which he or she is entitled including (but not limited to):

(a) Annuities;

(b) Pensions;

(c) Unemployment compensation;

(d) Retirement; and

(e) Disability benefits; even if their receipt makes the person ineligible for agency services, unless the person can provide evidence showing good reason for not obtaining the benefits.

(2) The agency does not count this income until the person begins to receive it. Income is budgeted prospectively for all Washington apple health (WAH) health care programs.

(3) Anticipated nonrecurring lump sum payments other than retroactive SSI/SSDI payments are considered income in the month received, subject to reporting requirements in WAC 182-504-0110. Any unspent portion is considered a resource the first of the following month.

(4) The agency follows income and resource methodologies of the supplemental security income (SSI) program defined in federal law when determining eligibility for WAH SSI-related medical or medicare savings programs unless the agency adopts rules that are less restrictive than those of the SSI program.

(5) Exceptions to the SSI income methodology:

(a) Lump sum payments from a retroactive ((~~SSDI~~)) old age, survivors, and disability insurance (OASDI) benefit, when reduced by the amount of SSI received during the period covered by the payment, are not counted as income;

(b) Unspent retroactive lump sum money from SSI or ((~~SSDI~~)) OASDI is excluded as a resource for nine months following receipt of the lump sum; and

(c) Both the principal and interest portions of payments from a sales contract, that meet the definition in WAC 182-512-0350(10), are unearned income.

(6) To be eligible for WAH categorically needy (CN) SSI-related health care coverage, a person's countable income cannot exceed the WAH CN program standard described in:

(a) WAC 182-512-0010 for noninstitutional WAH coverage unless living in an alternate living facility; or

(b) WAC ((~~182-513-1305(2)~~)) 182-513-1205 for noninstitutional WAH CN coverage while living in an alternate living facility; or

(c) WAC 182-513-1315 for institutional and waiver services coverage.

(7) To be eligible for SSI-related health care coverage provided under the WAH medically needy (MN) program, a person must:

(a) Have countable income at or below the effective WAH MN program standard as described in WAC 182-519-0050;

(b) Satisfy spenddown requirements described in WAC 182-519-0110;

(c) Meet the requirements for noninstitutional WAH MN coverage while living in an alternate living facility (ALF). See WAC ((~~182-513-1305(3)~~)) 182-513-1205; or

(d) Meet eligibility for institutional WAH MN coverage described in WAC 182-513-1315.

WSR 19-13-011
PERMANENT RULES
CRIMINAL JUSTICE TRAINING COMMISSION

[Filed June 7, 2019, 7:43 a.m., effective July 8, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: Chapter 139-11 WAC, Law Enforcement Training and Community Safety Act, as directed by HB [SHB] 1064 (2019), the commission adopted rules that adopt training hour requirements and develop curriculum on de-escalation training, mental health training, alternatives to use of physical or deadly force as part of de-escalation training; it also adopted rules for providing or facilitating first aid and practices for securing a scene to provide first aid. The agency adopted WAC 139-11-050 to receive continued community input via two annual summits, and by a report that details de-escalation training, biographies of the trainers and waivers for credit granted to agencies on WAC 139-11-030 training.

Citation of Rules Affected by this Order: New WAC 139-11-010, 139-11-020, 139-11-030, 139-11-040, 139-11-050, and 139-11-060.

Statutory Authority for Adoption: RCW 43.101.080.

Adopted under notice filed as WSR 19-10-083 on May 1, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 4, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 2, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 6, 2019.

Derek Zable
Human Resources and
Government Affairs Manager
Rules Coordinator

Chapter 139-11 WAC

LAW ENFORCEMENT TRAINING AND COMMUNITY SAFETY ACT

NEW SECTION

WAC 139-11-010 Definitions. For the purposes of this section the term violence de-escalation means tactics, action, and communication methods used by officers to achieve the following objectives, when safe and feasible:

(1) Manage the pace of an interaction;

(2) Manage the distance between the officer and person involved;

(3) Utilize shielding to protect the officer and others from an imminent threat; and

(4) Engage in communication in order to increase options for resolving the incident and reduce the likelihood of injury to all parties involved.

NEW SECTION

WAC 139-11-020 Requirements of training for law enforcement. This rule implements parts of Initiative Mea-

sure No. 940, passed in November 2018, and chapter 4, Laws of 2019 (SHB 1064), signed into law in February 2019. As stated in section 2 of Initiative Measure No. 940, "The intent of the people in enacting this act is to make our communities safer. This is accomplished by requiring law enforcement officers to obtain violence de-escalation and mental health training, so that officers will have greater skills to resolve conflicts without the use of physical or deadly force." While it is understood that police culture is part of the larger culture, it is critical for law enforcement training to proactively address the issue of law enforcement and its intersection with marginalized communities and contribute to changing outcomes for the better.

(1) Beginning December 7, 2019, all new general authority peace officers must complete a minimum of two hundred hours of initial violence de-escalation and mental health training in the basic law enforcement academy (BLEA). Violence de-escalation and mental health training will include the following topics:

(a) Patrol tactics, actions and communication methods that de-escalate situations when appropriate to reduce the likelihood of injury to all parties involved, avoid unnecessarily escalating situations that may lead to violence, and avoid unnecessarily placing officers in situations that require or lead to deadly force by:

(i) Managing the distance between the officer and the persons involved;

(ii) Utilizing shielding to protect the officer and others from a threat;

(iii) Managing the pace of an interaction; and

(iv) Engaging in communication to increase options for resolving the incident and reduce the likelihood of injury to all parties involved.

(b) Recognizing and managing the impact of stress on the officer's perceptions and reactions;

(c) Understanding emotional intelligence and self-awareness;

(d) Understanding the psychology and foundational principles of procedural justice to build trust and rapport, including training on ethics;

(e) Recognizing and mitigating the impact of implicit and explicit bias on the officer's perceptions and reactions;

(f) Recognizing patterns of behavior in individuals that may be related to mental or behavioral health issue or other disability, per RCW 43.101.427(5);

(g) Use of techniques and communication strategies to calm persons who appear to be agitated or demonstrating unusual behavior related to a mental or behavioral health issue or other disability, per RCW 43.101.427(5);

(h) Proper use of nonlethal defensive tactics to gain physical control when necessary;

(i) Alternatives to the use of physical or deadly force so that de-escalation tactics and less lethal alternatives are part of the decision-making process leading up to the consideration of deadly force;

(j) Use of a decision-making simulator ("shoot don't shoot") and cognitive exercises to improve accurate recognition of threats and proper level of force response;

(k) Understand the "good faith" standard as stated in RCW 9A.16.040 (4)(a);

(l) Learning about the historical intersection of race and policing, the experience of Black Americans then and now, including: The institution of slavery through the Civil Rights Act of 1964, mass incarceration, the role and impacts of police in schools, the ongoing influence of race relations, strategies to reconcile past injustice, and the importance of fair and impartial policing. This training should be supplemented by current data and research;

(m) Understanding how culture and differences in experiences, histories, and social norms impacts community perceptions of law enforcement and employing cultural humility skills, with the goal of learning about respectful and effective approaches with communities of color including, but not limited to, Black Americans, African Immigrants, Latinxs, Native Americans, Asian Americans, Pacific Islanders, American Muslims, Sikhs, and Arabs;

(n) Learning to build more positive relationships with specific communities within areas officers serve by understanding how biases, stereotypes, and a lack of understanding about varying cultural norms negatively impacts police interactions with the public;

(o) Learning about the history of police interaction with the LGBTQ+ communities and learning about respectful and effective communication and interaction with these communities;

(p) Learning about effective communication and interaction with:

(i) Youth;

(ii) Individuals who have experienced domestic violence, sexual assault, or human trafficking;

(iii) Immigrant and refugee communities, and those with limited-English proficiency;

(iv) Persons who have barriers to hearing, understanding, or otherwise complying with law enforcement officers.

(q) Learning about the systemic challenges facing indigent populations, the nature of crimes and poverty, and the cycle of recidivism for those experiencing poverty;

(r) Examining alternatives to jail, booking, and arrest and the impacts on members of the community and public safety;

(s) Learning about the history of police interaction with Native American communities, including learning about tribal sovereignty, tribal culture and traditions, and how to meet the new state law requirements for notification of tribal governments when a tribal person is killed or injured;

(t) First-aid training on the new statewide policy, which states: "All law enforcement personnel must provide or facilitate first aid such that it is rendered at the earliest safe opportunity to injured persons at a scene controlled by law enforcement," focused on:

(i) Critical life-saving skills;

(ii) Understanding the need to balance the many essential duties of officers with "the solemn duty to preserve the life of a person with whom officers come into direct contact";

(iii) Understanding best practices for securing a scene to facilitate the safe, swift, and effective provisions for first aid to anyone injured at a scene controlled by law enforcement or as a result of law enforcement action.

(2) All peace officers certified in Washington before December 7, 2019, and lateral peace officers certified in Washington after December 7, 2019, must complete a mini-

mum of forty hours of continuing de-escalation and mental health training every three years after receiving their initial peace officer certification. Incumbent peace officers must complete their first cycle of continuing de-escalation and mental health training by January 1, 2028. Continuing mental health and violence de-escalation training must include the following topics:

(a) Patrol tactics, actions and communication methods that de-escalate situations when appropriate to reduce the likelihood of injury to all parties involved, avoid unnecessarily escalating situations that may lead to violence, and avoid unnecessarily placing officers in situations that require or lead to deadly force by:

(i) Managing the distance between the officer and the persons involved;

(ii) Utilizing shielding to protect the officer and others from a threat;

(iii) Managing the pace of an interaction; and

(iv) Engaging in communication to increase options for resolving the incident and reduce the likelihood of injury to all parties involved.

(b) Recognizing and managing the impact of stress on the officer's perceptions and reactions;

(c) Understanding emotional intelligence and self-awareness;

(d) Understanding the psychology and foundational principles of procedural justice to build trust and rapport, including training on ethics;

(e) Recognizing and mitigating the impact of implicit and explicit bias on the officer's perceptions and reactions;

(f) Recognizing patterns of behavior in individuals that may be related to mental or behavioral health issue or other disability, per RCW 43.101.427(5);

(g) Use of techniques and communication strategies to calm persons who appear to be agitated or demonstrating unusual behavior related to a mental or behavioral health issue or other disability, per RCW 43.101.427(5);

(h) Proper use of nonlethal defensive tactics to gain physical control when necessary;

(i) Alternatives to the use of physical or deadly force so that de-escalation tactics and less lethal alternatives are part of the decision-making process leading up to the consideration of deadly force;

(j) Use of a decision-making simulator ("shoot don't shoot") and cognitive exercises to improve accurate recognition of threats and proper level of force response;

(k) Understand the "good faith" standard as stated in RCW 9A.16.040 (4)(a);

(l) Learning about the historical intersection of race and policing, the experience of Black Americans then and now, including: The institution of slavery through the Civil Rights Act of 1964, mass incarceration, the role and impacts of police in schools, the ongoing influence of race relations, strategies to reconcile past injustice, and the importance of fair and impartial policing. This training should be supplemented by current data and research;

(m) Understanding how culture and differences in experiences, histories, and social norms impacts community perceptions of law enforcement and employing cultural humility skills, with the goal of learning about respectful and effective approaches with communities of color including, but not limited to, Black Americans, African Immigrants, Latinxs, Native Americans, Asian Americans, Pacific Islanders, American Muslims, Sikhs and Arabs;

(n) Learning to build more positive relationships with specific communities within areas officers serve by understanding how biases, stereotypes, and a lack of understanding about varying cultural norms negatively impacts police interactions with the public;

(o) Learning about the history of police interaction with the LGBTQ+ communities and learning about respectful and effective communication and interaction with these communities;

(p) Learning about effective communication and interaction with:

(i) Youth;

(ii) Individuals who have experienced domestic violence, sexual assault, or human trafficking;

(iii) Immigrant and refugee communities, and those with limited-English proficiency; and

(iv) Persons who have barriers to hearing, understanding, or otherwise complying with law enforcement officers.

(q) Learning about the systemic challenges facing indigent populations, the nature of crimes and poverty, and the cycle of recidivism for those experiencing poverty;

(r) Examining alternatives to jail, booking, and arrest and the impacts on members of the community and public safety;

(s) Learning about the history of police interaction with Native American communities, including learning about tribal sovereignty, tribal culture and traditions, and how to meet the new state law requirements for notification of tribal governments when a tribal person is killed or injured;

(t) First-aid training on the new statewide policy, which states: "All law enforcement personnel must provide or facilitate first aid such that it is rendered at the earliest safe opportunity to injured persons as a scene controlled by law enforcement," focused on:

(i) Critical life-saving skills;

(ii) Understanding the need to balance the many essential duties of officers with "the solemn duty to preserve the life of a person with whom officers come into direct contact";

(iii) Understanding best practices for securing a scene to facilitate the safe, swift, and effective provisions for first aid to anyone injured at a scene controlled by law enforcement or as a result of law enforcement action.

NEW SECTION

WAC 139-11-030 Exemption, waiver, extension, or variance. Any request for exemption, waiver, extension, or variance from any requirement of this chapter must be made under WAC 139-03-030. This information must be available to the public.

NEW SECTION

WAC 139-11-040 Curriculum review, development, and assessment. (1) All curricula will be reviewed and approved consistent with commission policies and procedures.

(2) All training and student performance will be assessed consistent with current commission policies and procedures.

(3) All training will utilize an effective pedagogical approach for law enforcement on sensitive issues, and the efficacy of training should be continuously assessed with before-and-after testing of officer-participant if recommended by the subject matter experts involved in developing the curriculum.

(4) Continuing training will be developed by commission staff in partnership with subject matter experts from across the state and across various related disciplines. The training will be delivered in a variety of local/regional venues including, but not limited to, classrooms, gymnasiums, simulators, ranges, online platforms, and community settings. A variety of educational methods will be employed including classroom lectures, mock scenarios, and physical skill development practice. The training will be delivered by a cadre comprised of commission certified instructors who have completed an eighty hour, "train the trainer" course and shall use to the extent possible field training officers from local agencies, as well as other trainers with unique qualifications from outside of the law enforcement profession.

NEW SECTION

WAC 139-11-050 Community input. (1) The commission will develop a working roster of community members that includes, but is not limited to, representatives of stakeholder groups identified in RCW 43.101.455 and family members who have lost loved ones in fatal encounters with police. The commission will host an annual summit on each side of the state with the stakeholders to seek input and assistance with the development and delivery of training and the recruitment of subject matter experts.

(2) The commission will develop an annual report on the following topics and post those reports on their web site:

(a) Hours and learning objectives for new curriculum related to the de-escalation training topics identified in WAC 139-11-020;

(b) Biographies of trainers delivering training on topics identified in WAC 139-11-020; and

(c) Waivers granted to agencies requesting credit for training that meets the requirements of WAC 139-11-030.

(3) The commission will appoint an ad hoc committee on December 6, 2019, to work with commission staff to develop a structure and format for the annual meetings. The ad hoc committee will report back to the commission at the March 2020 commission meeting.

NEW SECTION

WAC 139-11-060 Miscellaneous. (1) All incumbent peace officers are required to complete forty hours of violence de-escalation and mental health training once every three years. This training may substitute for the annual twenty-four hour in-service requirement under WAC 139-05-300 in the year the officer completes the forty hour violence de-escalation training.

(2) Beginning January 2020, the commission will retain records submitted by law enforcement agencies demonstrating compliance with WAC 139-11-020 in accordance with state records retention schedules. The commission must make this information available to the public.

WSR 19-13-013
PERMANENT RULES
DEPARTMENT OF FISH AND WILDLIFE

[Order 18-120—Filed June 7, 2019, 2:16 p.m., effective July 8, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: The department removes pinto abalone from the list of classified shellfish species, removes area and season rules for pinto abalone harvest, and adds pinto abalone to the list of state endangered species.

Citation of Rules Affected by this Order: Amending WAC 220-320-010 Shellfish—Classification, 220-330-090 Crawfish, abalone, sea urchins, sea cucumbers, goose barnacles—Areas and seasons, personal-use fishery, and 220-610-010 Wildlife classified as endangered species.

Statutory Authority for Adoption: RCW 77.04.012, 77.04.013, 77.04.055, 77.12.020, and 77.12.047.

Adopted under notice filed as WSR 19-05-092 on February 20, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 3, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 7, 2019.

Larry M. Carpenter, Chair
Fish and Wildlife Commission

AMENDATORY SECTION (Amending WSR 17-05-112, filed 2/15/17, effective 3/18/17)

WAC 220-320-010 Shellfish—Classification. The following species are classified as shellfish under RCW 77.12.047 and are subject to the provisions of this title:

((~~**Abalone**~~

~~Pinto abalone~~	~~*Haliotis kamtschatkana*~~))
Mussel	
Blue mussel	*Mytilus trossulus*
California mussel	*Mytilus californianus*
Mediterranean mussel	*Mytilus galloprovincialis*

Scallops	
Pacific pink scallop	*Chlamys rubida*
Rock scallop	*Crassadoma gigantea*
Spiny scallop	*Chlamys hastata*
Weathervane scallop	*Patinopecten caurinus*
Clams	
All macoma clams	*Macoma spp.*
Butter clam	*Saxidomus giganteus*
Common cockle	*Clinocardium nuttallii*
Geoduck	*Panopea abrupta*
Horse or Gaper clam	*Tresus nuttallii*, *Tresus capax*
Mud or soft shell clam	*Mya arenaria*
Manila clam	*Venerupis philippinarum*
Piddock	*Zirfaea pilsbryi*
Razor clam	*Siliqua patula*
Rock or native little neck clam	*Leukoma staminea*
Varnish clam	*Nuttallia obscurata*
All other marine clams existing in Washington in a wild state	
Oysters	
All oysters	(Ostreidae)
Squid	
All squid	Sepiolida or Teuthida
Octopus	
Octopus	*Enteroctopus dolfleini*
Barnacles	
Goose barnacle	*Pollicipes polymerus*
Shrimp	
Coonstripe shrimp	*Pandalus danae*
Coonstripe shrimp	*Pandalus hypsinotus*
Ghost or sand shrimp	*Neotrypaea spp.*
Humpy shrimp	*Pandalus goniurus*
Mud shrimp	*Upogebia pugettensis*
Ocean pink shrimp	*Pandalus jordani*
Pink shrimp	*Pandalus eous*
Sidestripe shrimp	*Pandalopsis dispar*
Spot shrimp	*Pandalus platyceros*
Crab	
Dungeness or Pacific crab	*Cancer magister*
Red rock crab	*Cancer productus*
Tanner crab	*Chionoecetes tanneri*
King and box crab	*Lopholithodes spp.*
Blue king crab	*Paralithodes platypus*
Red king crab	*Paralithodes camtschaticus*
Golden king crab	*Lithodes aequispinus*
Crawfish	
Crawfish	*Pacifastacus sp.*
Sea cucumber	
Sea cucumber	*Parastichopus californicus*
Sea urchin	
Green urchin	*Strongylocentrotus droebachiensis*
Red urchin	*Strongylocentrotus franciscanus*
Purple urchin	*Strongylocentrotus purpuratus*

AMENDATORY SECTION (Amending WSR 17-05-112, filed 2/15/17, effective 3/18/17)

WAC 220-330-090 Crawfish, ((~~abalone,~~)) sea urchins, sea cucumbers, goose barnacles—Areas and seasons, personal-use fishery. (1) Crawfish: The open season for crawfish is the first Monday in May through October 31.

(2) ((~~Abalone: It is unlawful to fish for or possess abalone taken for personal use the entire year.~~

~~(3)~~)) Sea urchins: It is lawful to fish for sea urchins for personal use the entire year. It shall be lawful to take, fish for and possess sea urchins for personal use with any hand-operated instrument which does not penetrate the shell.

(((~~(4)~~))) (3) Sea cucumbers: It is lawful to fish for sea cucumbers for personal use the entire year except closed year-round in Marine Area 12. It shall be lawful to take, fish for and possess sea cucumbers for personal use with any hand-operated instrument which does not penetrate the animal.

(((~~(5)~~))) (4) Goose barnacles: It is lawful to take goose barnacles for personal use the entire year.

AMENDATORY SECTION (Amending WSR 18-17-153, filed 8/21/18, effective 9/21/18)

WAC 220-610-010 Wildlife classified as endangered species. Endangered species include:

Common Name	Scientific Name
pygmy rabbit	*Brachylagus idahoensis*
fisher	*Pekania pennanti*
gray wolf	*Canis lupus*
grizzly bear	*Ursus arctos*
killer whale	*Orcinus orca*
sei whale	*Balaenoptera borealis*
fin whale	*Balaenoptera physalus*
blue whale	*Balaenoptera musculus*
humpback whale	*Megaptera novaeangliae*
North Pacific right whale	*Eubalaena japonica*

Common Name	Scientific Name
sperm whale	*Physeter macrocephalus*
Columbian white-tailed deer	*Odocoileus virginianus leucurus*
woodland caribou	*Rangifer tarandus caribou*
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*
sandhill crane	*Grus canadensis*
snowy plover	*Charadrius nivosus*
upland sandpiper	*Bartramia longicauda*
spotted owl	*Strix occidentalis*
western pond turtle	*Clemmys marmorata*
leatherback sea turtle	*Dermochelys coriacea*
mardon skipper	*Polites mardon*
Oregon silverspot butterfly	*Speyeria zerene hippolyta*
Oregon spotted frog	*Rana pretiosa*
northern leopard frog	*Rana pipiens*
Taylor's checkerspot	*Euphydryas editha taylori*
Streaked horned lark	*Eremophila alpestris strigata*
Tufted puffin	*Fratercula cirrhata*
North American lynx	*Lynx canadensis*
marbled murrelet	*Brachyramphus marmoratus*
Loggerhead sea turtle	*Caretta caretta*
Yellow-billed cuckoo	*Coccyzus americanus*
Pinto abalone	*Haliotis kamtschatkana*

WSR 19-13-014
PERMANENT RULES
OFFICE OF MINORITY AND WOMEN'S BUSINESS ENTERPRISES

[Filed June 7, 2019, 2:24 p.m., effective July 8, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: The purpose of these rule changes are to provide clarification, eliminate unnecessary barriers and restrictions to certification for small businesses, and to clarify language and grammar to reflect modern and respectful wording. These changes will bring [the] office of minority and women's business enterprises into alignment with state and federal laws, rules and policies, such as the Governor's Executive Order #17-01.

Citation of Rules Affected by this Order: New WAC 326-20-035, 326-20-055, 326-20-086 and 326-20-099; repealing WAC 326-20-030, 326-20-040, 326-20-092, 326-20-095, 326-20-096 and 326-20-115; and amending WAC 326-02-030, 326-02-045, 326-20-048, 326-20-050, 326-20-060, 326-20-080, 326-20-081, and 326-20-094.

Statutory Authority for Adoption: RCW 39.19.030 and 39.19.120.

Adopted under notice filed as WSR 19-08-083 on April 3, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 1, Amended 8, Repealed 6.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 4, Amended 8, Repealed 6.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 7, 2019.

Mynor Lopez
Assistant Director
Legislative Affairs and Outreach

AMENDATORY SECTION (Amending WSR 04-08-093, filed 4/6/04, effective 5/7/04)

WAC 326-02-030 Definitions. Words and terms used in this title ((~~shall~~)) have the same meaning as each has under chapter ((~~120, Laws of 1983~~)) 43.19 RCW, unless otherwise specifically provided in this title, or the context in which they are used clearly indicates ((~~that they should be given some other~~)) another meaning.

(1) "Advisory committee" means the advisory committee ((~~on minority, women, and socially and economically disadvantaged individual's~~)) for the office of minority and women's business enterprises.

(2) "Affiliation" has the same meaning as the Small Business Administration (SBA) regulations, 13 C.F.R. Part 121. Except as otherwise provided in 13 C.F.R. Part 121, concerns are affiliates of each other when, either directly or indirectly:

(a) One concern controls or has the power to control the other;

(b) A third party or parties controls or has the power to control both; or

(c) An identity of interest between or among parties exists such that affiliation may be found.

(3) "Alaska native corporation" means any regional corporation, village corporation, urban corporation, or group corporation organized under the laws of the state of Alaska in accordance with the Alaska Native Claims Settlement Act, as amended (43 U.S.C. 1601, et seq.).

(4) "Assets" means all the property of a person available for paying debts or for distribution, including the person's respective share of jointly held assets. This includes, but is not limited to, cash on hand and in banks, savings accounts, IRA or other retirement accounts, accounts receivable, life

insurance, stocks and bonds, real estate, and personal property.

(5) "Broker" means a person ((~~that~~)) who provides a bona fide service, such as professional, technical, consultant, brokerage, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of a contract.

(((~~(3)~~))) (6) "Certified business" ((~~or "certified"~~)) means a for profit business ((~~or the status of a business that has been examined~~)) that has been approved for certification by the Washington state office of minority and women's business enterprises ((~~and deemed to be~~)). Businesses certified through the agency's state program include: A minority business enterprise (MBE), a women's business enterprise (WBE), a minority woman's business enterprise (MWBE), a combination business enterprise (CBE), ((~~or~~)) and a socially and economically disadvantaged business enterprise (SEDBE).

(((~~(4)~~))) (7) "Class of contract basis" means an entire group of contracts having a common characteristic. Examples include, but are not limited to, personal service contracts, public works contracts, leases, purchasing contracts, and contracts for specific types of goods and/or services.

(((~~(5) "Combination business enterprise" or "CBE" means a small business concern organized for profit, performing a commercially useful function, that is fifty percent owned and controlled by one or more minority men or MBEs certified by the office and fifty percent owned and controlled by one or more nonminority women or WBEs certified by the office. The owners must be United States citizens or lawful permanent residents.~~

~~(6)~~))) (8) "Commercially useful function" means the performance of real and actual services ((~~which~~)) that are integral and necessary in the discharge of any contractual endeavor, and not solely for the purpose of obtaining certification or obtaining credit for participation goal attainment.

(((~~(7)~~))) (9) "Common industry practices" means those usages, customs, or practices which are ordinary, normal, or prevalent among businesses, trades, or industries of similar types engaged in similar work in similar situations in the community.

(((~~(8)~~))) (10) "Conduit" means a certified business which agrees to be named as a subcontractor on a contract in which such certified business does not perform the work but, rather, the work is performed by the prime contractor, prime consultant, material supplier, purchasing contractor, or any other noncertified business.

(((~~(9) "Contract" means a mutually binding legal relationship (including a purchase order, lease, or any modification thereof), which obligates the seller to furnish goods or services (including construction), and the buyer to pay for them.~~

~~(10) "Contract by contract basis" means a single contract within a specific class of contracts.~~

~~(11) "Contractor" means a party who enters into a contract directly with a state agency or educational institution.~~

~~(12) "Corporate-sponsored dealership" means a business that does not meet the requirements for certification but is participating in a program specifically developed by a national or regional corporation to address the present-day issue of lack of opportunities for minorities or women in the dealership industry.~~)) (11) "Contingent liability" means a liability that depends on the occurrence of a future and uncertain event. This includes, but is not limited to, guaranty for debts owed by the applicant concern, legal claims and judgments, and provisions for federal income tax.

(12) "Days" means calendar days. In computing any period of time described in this chapter, the day from which the period begins to run is not counted. When the last day of the period is a Saturday, Sunday, or a legal holiday, the period extends to the next day that is not a Saturday, Sunday, or legal holiday. Similarly, in circumstances where the agency is closed for all or part of the last day, the period extends to the next day on which the agency is open.

(13) "Director" means the director of the office of minority and women's business enterprises.

(14) ((~~"Economically disadvantaged individuals" means socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same or similar line of business who are not socially disadvantaged.~~

~~(15)~~))) "Educational institutions" means the state universities, the regional universities, The Evergreen State College, and the community colleges.

(((~~(16)~~))) (15) "Front" means a business which purports to be eligible for certification but is not in fact legitimately owned and controlled by minorities, women, socially and economically disadvantaged individuals, or a combination thereof.

(((~~(17) "Goods and/or services" means all goods and services, including professional services.~~

~~(18)~~))) (16) "Graduation" means the business is no longer certified because it is no longer a small business concern.

(((~~(19) "Heavy construction" means construction other than building construction; e.g., highway or street, sewer and pipeline, railroad, communication and power line, flood control, irrigation, marine, etc.~~

~~(20)~~))) (17) "Immediate family member" means father, mother, son, daughter, brother, sister, grandfather, grandmother, father-in-law, mother-in-law, sister-in-law, brother-in-law, spouse, and registered domestic partner.

(18) "Joint venture" means ((~~a partnership of two or more persons or businesses created to carry out a single business enterprise for profit, for which purpose they combine their capital, efforts, skills, knowledge or property and in which they exercise control and share in profits and losses in proportion to their contribution to the enterprise.~~

~~(21) "Legitimately owned and controlled" means that minorities, women, socially and economically disadvantaged individuals, or a combination thereof, own at least fifty-one percent interest in the business (unless the business qualifies as a corporate sponsored dealership under the provisions of subsection (12) of this section and WAC 326-20-050(4)); and the minorities, women, socially and economically disadvantaged individuals, or combination thereof, possess and exercise sufficient expertise specifically in the firm's field of operation to make decisions governing the long-term direction and the day-to-day operations of the firm.~~

~~(22) "Manufacturer" means a business which owns, operates, or maintains a factory or establishment that pro-~~

~~duces or creates goods from raw materials or substantially alters goods before reselling them.~~

~~(23) "Minority" means a person who is a citizen or lawful permanent resident of the United States and who is:~~

~~(a) Black: Having origins in any of the black racial groups of Africa;~~

~~(b) Hispanic: Of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;~~

~~(c) Asian American: Having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; or~~

~~(d) American Indian or Alaskan native: Having origins in any of the original peoples of North America.~~

~~(24) "Minority business enterprise," "minority-owned business enterprise," or "MBE" means a small business concern, organized for profit, performing a commercially useful function, which is legitimately owned and controlled by one or more minority individuals or minority business enterprises certified by the office. The minority owners must be United States citizens or lawful permanent residents.~~

~~(25) "Minority women's business enterprise" or "MWBE" means a small business concern, organized for profit, performing a commercially useful function, which is legitimately owned and controlled by one or more minority women and is certified by the office. The owners must be United States citizens or lawful permanent residents.~~

~~(26)~~)) an association of a certified firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the certified firm is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

(19) "Liabilities" means financial obligations including, but not limited to, accounts payable, notes payable to a bank or others, installment accounts, mortgages on real estate, and unpaid taxes.

(20) "Native Hawaiian organization" means any community service organization serving native Hawaiians in the state of Hawaii which is a not-for-profit organization chartered by the state of Hawaii, is controlled by native Hawaiians, and whose business activities will principally benefit such native Hawaiians.

(21) "Office" means the Washington state office of minority and women's business enterprises ((~~of the state of Washington~~)).

(((~~(27)~~))) (22) "Pass-through" means a certified business ((~~which~~)) that buys goods from a noncertified business and simply resells those goods to the state, state contractors, or other persons doing business with the state for the purpose of allowing those goods to be counted towards fulfillment of ((~~WBE or MBE~~)) goals for participation of certified firms.

(((~~(28) "Person" means one or more individuals, partnerships, associations, organizations, corporations, cooperatives, legal representatives, trustees and receivers, or any group of persons.~~

~~(29)~~)) (23) "Personal net worth" means the ((~~socially and economically disadvantaged individual's net personal assets and liabilities, excluding an individual's ownership interest in the applicant firm and the individual's equity in his or her primary residence. If the statement of personal net worth that an individual submits shows that the individual's personal net worth exceeds seven hundred fifty thousand dollars, the individual's economic disadvantage is rebutted.~~

~~(30) "Procurement" means the purchase, lease, or rental of any goods or services.~~

~~(31) "Public works" means all work, including construction, highway and ferry construction, alteration, repair, or improvement other than ordinary maintenance, which a state agency or educational institution is authorized or required by law to undertake.~~

~~(32) "Regular dealer" means a certified business that owns, operates, or maintains a store, warehouse or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business.~~

~~(33) "Services" in the context of "goods and/or services," means all services including, but not limited to, client services, personal services, and purchased services as defined in RCW 39.29.006.~~

~~(34) "Socially disadvantaged individuals" means those individuals who have been subjected to racial or ethnic prejudice or cultural bias, gender, disability, long-term residence in an isolated environment, or other similar causes negatively impacting entry into or advancement in the business world within American society because of their identities as members of groups and without regard to their individual qualities. Social disadvantage must stem from circumstances beyond their control.~~

~~(35) "Socially and economically disadvantaged business enterprise" or "SEDBE" means a small-business concern, organized for profit, performing a commercially useful function, which is legitimately owned and controlled by one or more socially and economically disadvantaged individuals or socially and economically disadvantaged business enterprises certified by the office. The socially and economically disadvantaged owners must be United States citizens or lawful permanent residents.~~

~~(36) "Socially and economically disadvantaged individual" means a person who is a citizen or lawful permanent resident of the United States and who is:~~

~~(a) Found to be a socially and economically disadvantaged individual on a case-by-case basis by OMWBE; or~~

~~(b) A member of one of the following groups that are presumed to be socially and economically disadvantaged:~~

~~(i) Minority;~~

~~(ii) Women;~~

~~(iii) Any additional groups whose members are designated as socially and economically disadvantaged by the U.S. Small Business Administration (SBA), at such time as the SBA designation becomes effective.~~

~~(37)~~)) net value of the assets of an individual remaining after total liabilities are deducted. An individual's personal net worth does not include: The individual's ownership interest in an applicant or participating firm; or the individual's equity in his or her primary place of residence. An individual's personal net worth includes only his or her own share of

assets held jointly or as community property with the individual's spouse/domestic partner.

(24) "Small Business Administration" or "SBA" means the United States Small Business Administration.

(25) "Small business concern" means a small business concern as defined under section 3 of the Small Business Act and 13 C.F.R. Part 121 that also does not exceed the cap on average annual gross receipts specified in WAC 326-20-092.

(26) "Socially disadvantaged individual" means the following for the purposes of certification, consistent with 49 C.F.R. Sec. 26.5:

(a) A person who has been subjected to racial or ethnic prejudice or cultural bias within American society because of his or her identity as a member of groups and without regard to his or her individual qualities. The social disadvantage must stem from circumstances beyond the individual's control.

(b) Any individual who the agency finds to be a socially disadvantaged individual on a case-by-case basis, per chapter 326-20 WAC.

(c) Any individual in the following groups, members of whom are rebuttably presumed to be socially disadvantaged for the purposes of certification, consistent with 49 C.F.R. Sec. 26.5:

(i) Persons who are Asian or Pacific islander: Person whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Guam, the Republic of Palau, the Federated States of Micronesia, and the Republic of Marshall Islands, Commonwealth of the Northern Mariana Islands, Samoa, Macao, Fiji, Tonga, Kirbati, Tuvalu, Nauru, Hong Kong, India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;

(ii) Persons who are black/African American: Persons having origins in any of the black racial groups of Africa;

(iii) Persons who are Hispanic/Latino: Persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

(iv) Persons who are Native American or Alaska native: Persons who are members or descendants of a federal or state recognized Indian tribe or Alaska native corporation;

(v) Persons who are native Hawaiian: Persons whose ancestors were natives, prior to 1778, of the area which now comprises the state of Hawaii;

(vi) Women; and

(vii) Any additional groups whose members are designated as socially and economically disadvantaged by the U.S. Small Business Administration (SBA), at such time as the SBA designation becomes effective.

(27) "State agency" includes the state of Washington and all agencies, departments, offices, divisions, boards, commissions, and correctional and other types of institutions. "State agency" does not include the judicial or legislative branches of government except to the extent that procurement or public works for these branches is performed by a state agency.

~~(((38) "Subcontractor" means a party that indirectly provides goods or services, including but not limited to construction, to a state agency or educational institution through a contractor.~~

~~(39) "Supplier" means a manufacturer or regular dealer that:~~

~~(a) Provides or furnishes goods or materials;~~

~~(b) Performs a commercially useful function; and~~

~~(c) Is not considered a conduit, front, pass-through or broker.~~

~~(40)~~)) (28) "Switch business" means a business ((~~which~~)) that was previously owned and controlled by ((~~a man, men or nonminorities, or individuals who are~~)) an individual(s) who is not socially and economically disadvantaged, ((~~which~~)) that has made technical changes to its business structure so that it is now purportedly owned and controlled by a ((~~woman or women or by a minority person or persons, or by a~~)) person(s) who is socially and economically disadvantaged ((~~individual or individuals~~)), but continues to operate in substantially the same manner as it did prior to the written revisions of the business structure.

(((~~(41) "Women's business enterprise," "women-owned business enterprise," or "WBE" means a small business concern, organized for profit, performing a commercially useful function, which is legitimately owned and controlled by one or more women or women's business enterprises certified by the office. The women owners must be United States citizens or lawful permanent residents.~~)) (29) "Tribally owned concern" means any small business concern at least fifty-one percent owned by an Indian tribe as defined in this section.

AMENDATORY SECTION (Amending WSR 04-08-093, filed 4/6/04, effective 5/7/04)

WAC 326-02-045 Factors considered in determining performance of commercially useful function. (1) ((~~In determining the performance of a commercially useful function, factors which may be considered include, but are not limited to, the following:~~)) A business performs a commercially useful function when:

(a) ((~~Whether~~)) The work to be performed by the business is within the scope of work included in the ((~~Standard~~)) North American Industrial Classification System code(s) ((~~under which~~)) that the business is ((~~listed in the directory of certified businesses published by the office or in the records of the office.~~

~~(b) Whether the business could be considered a conduit, front, or pass-through;~~

~~(c) Whether the minority and/or woman and/or socially and economically disadvantaged individual owner(s) has the skill and expertise to perform the work for which the business is being or has been certified;~~

~~(d) Whether~~)) certified under or applying to be certified under.

(b) The business is or will be responsible for executing a distinct element of work in the performance of a contract((~~;~~)) and ((~~the principals or employees of the business~~)) is carrying out its responsibilities by actually ((~~perform, manage, and supervise~~)) performing, managing, and supervising the work ((~~for which the business is or will be responsible;~~

~~(2) In addition, a business that functions as a supplier shall:~~

~~(a) Be the manufacturer of the goods or materials or assume the actual and contractual responsibility for furnish-~~

~~ing the goods or materials and execute material changes in the configuration of those goods or materials; or~~

~~(b) Prior to submitting an application for certification, secure a contract or distributor agreement with a manufacturer to act as an independent authorized representative capable of passing on product warranties to the purchaser.~~

~~(3) Factors which may indicate that a supplier is not performing~~)) involved; and

(c) The business is responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (when applicable) and paying for the material itself.

(2) A business does not perform a commercially useful function ((~~include, but are not limited to, the following:~~

~~(a) A minimum amount of inventory is not maintained.~~

~~(b) Billing and shipping arrangements are performed by nonowners or staff of nonowners.~~

~~(c) A significant amount of deliveries are shipped directly from the producer or manufacturer to the end user.~~

~~(d) The firm does not take ownership of the product.~~)) when:

(a) Its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of participation. The agency will consider similar transactions in which certified firms do not participate to evaluate standard industry practice.

(b) It does not exercise responsibility for at least thirty percent of the total cost of its contract with its own workforce, or it subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved.

NEW SECTION

The following section of the Washington Administrative Code is decodified and recodified as follows:

Old WAC Number	New WAC Number
326-02-045	326-20-230

NEW SECTION

WAC 326-20-035 Presumptive group membership. (1) After reviewing an applicant's sworn declaration of membership in a presumptively disadvantaged group, the agency may ask the applicant to present additional evidence that the person is a member of the identified group, if the agency has a well-founded reason to question the applicant's claim of group membership.

(2) The agency will provide the applicant an explanation of the reason(s) for questioning the applicant's group membership. The agency will consider whether the person has held themselves out as a member of the group for an extended period of time prior to application for certification, and whether the relevant community regards the person as a member of that group. The agency may require the applicant to produce appropriate documentation of group membership.

(3) The agency will not impose a disproportionate burden on members of any particular designated group in violation of Title VI of the Civil Rights Act of 1964.

(4) If the agency determines an individual claiming membership of a presumed disadvantaged group is not a member, the individual must demonstrate social and economic disadvantage on an individual basis under WAC 326-20-045.

(5) The decisions concerning membership in a designated group are subject to the certification appeals process outlined in WAC 326-20-171.

AMENDATORY SECTION (Amending WSR 17-13-020, filed 6/12/17, effective 8/1/17)

WAC 326-20-048 Presumption of disadvantage. (1) ((~~The office presumes that citizens of the United States or lawfully admitted permanent residents who are women, African Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, or other minorities found to be disadvantaged by the program, are socially and economically disadvantaged individuals. Applicants are required to~~)) Social disadvantage. The agency rebuttably presumes the following persons are socially disadvantaged individuals for the purposes of certification, consistent with 49 C.F.R. Part 26.67: Women; persons who are black/African American, Hispanic/Latino, Native American, Asian, Pacific Islander, native Hawaiian, and Alaska native; and other minorities found disadvantaged by the small business association.

(2) Each presumptively socially disadvantaged applicant must submit a signed declaration that ((~~each disadvantaged owner is, in fact,~~)) she or he is socially and economically disadvantaged.

(((~~2~~))) (3)(a) Economic disadvantage. Each owner of a firm applying for state certification must sign a declaration that he or she has a personal net worth that does not exceed 1.32 million dollars, per WAC 326-20-049.

(b) Rebuttal of economic disadvantage. If the statement of personal net worth that an individual submits under this section shows that the individual's personal net worth exceeds 1.32 million dollars or shows that a person has been able to accumulate substantial wealth, the individual's economic disadvantage is rebutted, and the individual is not deemed to be economically disadvantaged. Such an individual is no longer eligible to participate in the program and cannot regain eligibility by making an individual showing of disadvantage. The office is not required to have a proceeding under this section in order to rebut the presumption of economic disadvantage in this case.

(((~~3~~))) (4) Individual determinations of social and economic disadvantage. Firms owned and controlled by individuals who are not presumed to be socially and economically disadvantaged may apply for SEDBE certification. The office makes a case-by-case determination of whether each individual whose ownership and control are relied upon for SEDBE certification is socially and economically disadvantaged. In such a proceeding, the applicant firm has the burden of demonstrating to the office, by a preponderance of the evidence, that the individuals who own and control it are

socially and economically disadvantaged. An individual whose personal net worth exceeds 1.32 million dollars shall not be deemed to be economically disadvantaged. In making these determinations, the office uses ((~~the guidance found in 49 C.F.R. Part 26, Appendix E~~)) WAC 326-20-046 and 326-20-047. The office requires that applicants provide sufficient information to permit determinations under ((~~the guidance of 49 C.F.R. Part 26, Appendix E~~)) WAC 326-20-046 and 326-20-047.

AMENDATORY SECTION (Amending WSR 04-08-093, filed 4/6/04, effective 5/7/04)

WAC 326-20-050 Proof of ownership of business. (((~~(1) All minority, women, or socially and economically disadvantaged owners shall submit to the office proof of their ownership of the requisite percentage of the business at the time the application is submitted. Such proof shall consist of stock certificates, a notarized affidavit of stock ownership from the corporate treasurer, a partnership agreement, canceled check used to purchase ownership, or other recognized proof of ownership. The ownership shall be real, substantial, and continuing, shall go beyond the pro forma ownership of the business reflected in the ownership documents, and shall be based on the owner's capital contribution. The minority, and/or women, and/or socially and economically disadvantaged owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their ownership interests, as demonstrated by an examination of the substance and the form of the arrangements.~~

~~(2) In cases of sole proprietorships or other cases where documentary proof of ownership is not available, the minority, women, or socially and economically disadvantaged owners shall so advise the office, which may undertake further investigation. The office may also require documents showing how and when the minority, women, or socially and economically disadvantaged owners' interest in the business was acquired.~~

~~(3) The office may, for any reason, require any minority, women, or socially and economically disadvantaged owners to provide additional proof of, or information concerning, ownership. The office may request additional information regarding separate ownership of a business including, but not limited to, a separate property agreement.~~

~~(4) Ownership of a corporate sponsored dealership shall be evaluated by using the following standards:~~

~~(a) The minority, women, or socially and economically disadvantaged owner(s) have entered into a written agreement, contract, or arrangement with a national or regional corporation and has been granted a license to offer, sell, or distribute goods or services at wholesale or retail, leasing, or otherwise use the name, service mark, trademark, or related characteristics of the sponsoring corporation.~~

~~(b) The capital investment for the dealership or business is jointly contributed by the minority, women, or socially and economically disadvantaged owner(s) and the sponsoring corporation.~~

~~(c) The original investment contributed by the minority, women, or socially and economically disadvantaged owner(s) may be less than fifty-one percent, but must constitute at least twenty-five percent of the capitalization investment (total required equity capital) in the dealership corporation.~~

~~(d) A specified time limit of not more than ten years must be established, binding between the minority, women, or socially and economically disadvantaged owner(s) and the sponsoring corporation, within which the buy-out of the corporate sponsor's interest shall be complete.~~

~~(e) The sponsoring corporation must have specifically developed a national or regional corporate sponsored dealership program which includes such features as capitalization assistance from the sponsoring corporation, on-going business operations training, technical assistance to the dealership owner, and a corporate sponsored minority, women, and socially and economically disadvantaged individual's business program.~~

~~(f) The minority, women, or socially and economically disadvantaged owner(s) must demonstrate that the relationship between the corporate sponsor and the minority, women, or socially and economically disadvantaged individual's business was not formed for the primary purpose of achieving certification under chapter 39.19 RCW, or any similar provision of any ordinance, regulation, rule, or law.~~)) (1) In determining whether a socially and economically disadvantaged participant(s) in a firm owns the business, the agency considers all facts in the record viewed as a whole, including the origin of all assets and how and when they were used in obtaining the firm. All transactions for the establishment and ownership, or transfer of ownership, must be in the normal course of business.

(2) To be an eligible for certification, a firm must be at least fifty-one percent owned by a socially and economically disadvantaged individual(s).

(a) In the case of a sole proprietorship or other cases where documentary proof of ownership is not available, the agency may undertake further investigation and may require documents showing how and when the socially and economically disadvantaged owner(s) interest in the business was acquired.

(b) In the case of a corporation, a socially and economically disadvantaged individual(s) must own at least fifty-one percent of each class of voting stock outstanding and fifty-one percent of the aggregate of all stock outstanding.

(c) In the case of a partnership, a socially and economically disadvantaged individual(s) must own at least fifty-one percent of each class of partnership interest.

(d) In the case of a limited liability company, a socially and economically disadvantaged individual(s) must own at least fifty-one percent of each class of member interest.

(3) The socially and economically disadvantaged individual(s) ownership, including the individual's contribution of capital or expertise to acquire ownership interests, must be real, substantial, and continuing, going beyond pro forma ownership of the firm. It may include ownership interest acquired:

(a) As the result of a final property settlement or court order in a divorce or legal separation, provided no term or condition of the agreement or divorce decree is inconsistent with this section;

(b) Through inheritance or because of the death of the former owner; and

(c) Through debt instruments from financial institutions or other organizations lending funds in the normal course of business, even when the debtor's ownership interest is security for the loan.

(4) The disadvantaged owner(s) must enjoy the customary incidents of ownership, share in the risks, and be entitled to the profits and loss commensurate with their ownership interests, as demonstrated by the substance, not merely the form of arrangements.

(5) When expertise is relied upon as part of a disadvantaged owner's contribution to acquire ownership, the applicant must have a significant financial investment in the firm, and the applicant's expertise must be:

(a) In a specialized field;

(b) In areas critical to the firm's operations;

(c) Indispensable to the firm's potential success;

(d) Specific to the type of work the firm performs; and

(e) Documented in the records of the firm, which must show the contribution of expertise and value to the firm.

(6) The following are insufficient to be considered ownership in a firm by a socially and economically disadvantaged individual for the purposes of certification:

(a) A promise to contribute capital; an unsecured note payable to the firm or an owner who is not a disadvantaged individual; mere participation in a firm's activities as an employee; capitalization not commensurate with the value for the firm; and any terms or practices giving a nondisadvantaged individual or firm a priority or superior right to a firm's profits, compared to the disadvantaged owner(s).

(b) Except as allowed by this section, interests or assets obtained by an applicant in the form of a gift or transfer without adequate consideration from any nondisadvantaged individual or firm who is: Involved in the same firm or affiliate where the individual is seeking certification; involved in the same or a similar line of business; or engaged in an ongoing business relationship with the firm or an affiliate where the individual is seeking certification. To overcome this presumption and permit the interests or assets, the disadvantaged individual must demonstrate by clear and convincing evidence that: The gift or transfer to the disadvantaged individual was made for reasons other than obtaining certification; and the disadvantaged individual controls the management, policy, and operations of the firm, notwithstanding the continuing participation of a nondisadvantaged individual who provided the gift or transfer.

NEW SECTION

WAC 326-20-055 Subsidiaries. An eligible firm must be owned by an individual(s) who is socially and economically disadvantaged, rather than owned by another firm, except as provided below:

(1) If a socially and economically disadvantaged individual(s) owns and controls a firm through a parent or holding company that is established for tax, capitalization, or other purposes consistent with industry practice; and the parent or holding company owns and controls the subsidiary.

(2) The agency may certify such a subsidiary if there is cumulatively fifty-one percent ownership of the subsidiary by a socially and economically disadvantaged individual(s). Examples of such subsidiaries include, but are not limited to:

(a) A socially and economically disadvantaged individual(s) owns one hundred percent of a holding company and has a wholly owned subsidiary. The subsidiary may be certified, if it meets all other requirements.

(b) A socially and economically disadvantaged individual(s) owns one hundred percent of the holding company and owns fifty-one percent of a subsidiary. The subsidiary may be certified, if all other requirements are met.

(c) A socially and economically disadvantaged individual(s) owns eighty percent of the holding company and the holding company in turn owns seventy percent of a subsidiary. In this case, the cumulative ownership of the subsidiary by disadvantaged individuals is fifty-six percent (eighty percent of the seventy percent). This is more than fifty-one percent, so the agency may certify the subsidiary, if all other requirements are met.

(d) Same as the examples in (b) and (c) of this subsection, but someone other than the socially and economically disadvantaged owner(s) of the parent or holding company control the subsidiary. Even though the subsidiary is owned by disadvantaged individuals, through the holding or parent company, the agency cannot certify it because it fails to meet control requirements.

(e) A socially and economically disadvantaged individual(s) owns sixty percent of the holding company and fifty-one percent of a subsidiary. In this case, the cumulative ownership of the subsidiary by disadvantaged individuals is approximately thirty-one percent. This is less than fifty-one percent, so the agency cannot certify the subsidiary.

(f) The holding company, in addition to the subsidiary seeking certification, owns several other companies. The combined gross receipts of the holding companies and its subsidiaries are greater than the size standard for the subsidiary seeking certification or the gross receipts cap of WAC 326-20-096. Under the rules concerning affiliation, the subsidiary fails to meet the size standard and cannot be certified.

AMENDATORY SECTION (Amending WSR 92-11-007, filed 5/11/92, effective 6/11/92)

WAC 326-20-060 Community ownership. (1) When an ownership interest ((~~arising~~)) arises in a nonapplicant spouse or registered domestic partner solely because ((~~of the operation~~)) of community property laws, the agency will not disqualify the applicant ((~~spouse from certification. Both spouses shall~~)) if both parties certify that:

(a) Only ((~~one~~)) the applicant spouse or registered domestic partner participates in the management of the business((~~.~~)); and

(b) The nonparticipating spouse or registered domestic partner relinquishes control over his/her community interest in the ((~~subject~~)) business.

(2) When an ownership interest arising in a nonapplicant spouse or registered domestic partner solely because of community property laws, the agency will not disqualify the applicant because of a provision for the nonapplicant spouse

or domestic partner to cosign a financing agreement, contract for the purchase or sale of real or personal property, bank signature card, or other document.

(3) The agency must give particular scrutiny to the ownership and control of a firm to ensure it is owned and controlled, in substance as well as in form, by a socially and economically disadvantaged individual, when the ownership of the firm or its assets is transferred from a spouse or registered domestic partner who is not a socially and economically disadvantaged individual.

AMENDATORY SECTION (Amending WSR 04-08-093, filed 4/6/04, effective 5/7/04)

WAC 326-20-080 Factors considered in determining control. (((1) The minority, woman, or socially and economically disadvantaged owner(s) must possess and exercise managerial and operational control over the day-to-day affairs of the business.

(a) Managerial control. The minority, woman, or socially and economically disadvantaged owner(s) has the demonstrable ability to make independent and unilateral business decisions needed to guide the future and direction of the firm.

(b) Operational control. The minority, woman, or socially and economically disadvantaged owner(s) has the demonstrable ability to independently make basic decisions pertaining to the daily operations of the business.

(2) Whether a minority, woman, or socially and economically disadvantaged owner meets the control requirement is determined on an application-by-application basis. Office management, clerical, or other experience unrelated to the firm's field of operations, is insufficient to establish that the business is legitimately owned and controlled.

(3) Factors which may be considered in determining whether the minority, woman, or socially and economically disadvantaged owner meets the control requirement include, but are not limited to, the following:

(a) Authority and restrictions as indicated in the articles of incorporation, bylaws, partnership agreements and/or other business agreements and documents;

(b) The financial interest and/or participation in any other business by any owner or key personnel;

(c) Past and current employment history of minority and women owners involved in the business;

(d) Members of the board of directors and corporate officers;

(e) Experience, training, and expertise of any owners and key personnel;

(f) Recent changes in ownership and/or control of the business;

(g) Financial obligation to and capital contributions from owners and nonowners of the business; and

(h) Documentation indicating who has ultimate authority to make policy and management decisions and to legally obligate the business.

(4) If persons who are not minorities, women, or socially and economically disadvantaged are disproportionately responsible for the operation of the business, then the business is not eligible for certification.

(5) The requirements of this section shall not apply, if the business qualifies as a corporate-sponsored dealership under the provisions of WAC 326-20-050(4). Control of a corporate-sponsored dealership will be evaluated using the following standards:

(a) If the sponsoring corporation retains majority voting rights and control of the board of directors, then the minority, women, or socially and economically disadvantaged owner(s) must annually apply at least fifty percent of the net profit and bonuses toward the buy-out of the corporate sponsors' interest within the buy-out time limit established with the corporation.

(b) The minority, women, or socially and economically disadvantaged owner(s) must show active participation in the decision-making process on the board of directors of the dealership.

(c) The minority, women, or socially and economically disadvantaged owner(s) must have and exercise managerial and operational control over the day-to-day management of the dealership, with responsibility for sales, service volume, and profits.

(d) The minority, women, or socially and economically disadvantaged owner(s) must have prior business or management experience relating to the business being entered into as an owner.

(e) The minority, women, or socially and economically disadvantaged owner(s) must be president of any corporation formed by the business.)) (1) In determining whether disadvantaged owner(s) control a business, the office must consider all of the facts in the record, viewed as a whole.

(2) The disadvantaged owner(s) must demonstrate the ability to make independent and unilateral business decisions needed to guide the future and direction of the business.

(3) The certifiable business must not be subject to any formal or informal restrictions limiting the customary discretion of the disadvantaged owner(s). Restrictions through corporate charter provisions, bylaw requirements, contracts or any other formal or informal devices, such as cumulative voting rights, voting powers attached to different classes of stock, employment contracts, requirements for concurrence by nondisadvantaged partners, conditions precedent or subsequent, executory agreements, voting trusts, limitations on or assignments of voting rights, preventing the disadvantaged owner(s), without the cooperation or vote of any nondisadvantaged individual, from making any business decision are prohibited. This subsection does not preclude a spouse or registered domestic partner cosignature on the office's spouse or domestic partner nonparticipation statement.

(4) Disadvantaged owner(s) must possess the power to direct or cause the direction of the management and policies of the business and make daily and long-term decisions on matters of management, policy, and operations.

(a) Disadvantaged owner(s) must hold the highest officer position in the company, such as chief executive officer or president.

(b) In a corporation, disadvantaged owners must control the board of directors.

(c) In a partnership, one or more disadvantaged owners must serve as general partners, with control over all partnership decisions. In order for a partnership to be controlled by

disadvantaged individuals, any nondisadvantaged partners must not have the power, without the specific written concurrence of the socially and economically disadvantaged partner(s), to contractually bind the partnership or subject the partnership to contract or tort liability.

(d) Nondisadvantaged or immediate family members may be involved in a certified business as owners, managers, employees, stockholders, officers, or directors. They must not possess or exercise the power to control the business or be disproportionately responsible for the operation of the business.

(e) Disadvantaged owner(s) of the business may delegate various areas of the management, policymaking, or daily operations of the business to other participants in the business, regardless of whether these participants are disadvantaged individuals. Such delegations of authority must be revocable, and the disadvantaged owner(s) must retain the power to hire and fire any person to whom such authority is delegated. The disadvantaged owner(s) managerial role in the business's overall affairs must be such that the recipient can reasonably conclude the disadvantaged owners actually exercise control over the business's operations, management, and policy.

(f) Disadvantaged owner(s) must demonstrate the ability to make basic decisions pertaining to the daily operations of the business independently and have an overall understanding of, managerial and technical competence and experience directly related to, the type of business in which the business is engaged and operating. The owner(s) are not required to have experience or expertise in every critical area of operations or given field than managers or key employees. They must have the ability to intelligently and critically evaluate information presented by other participants in the business's activities and to use this information to make independent decisions concerning the business's daily operations, management, and policymaking. Generally, expertise limited to office management, administration, or bookkeeping functions unrelated to the principle business activities of the business is insufficient to demonstrate control.

(g) If state or local law requires the persons to have a particular license or other credential in order to own or control a certain type of business, then the disadvantaged person(s) who own and control a potential certifiable business of that type must possess the required license or credential. If state or local law does not require the applicant to possess such a license or credential to own or control a business, the office must not deny certification solely on the ground the person lacks the license or credential. However, the office may take into account the absence of the license or credential as one factor in determining whether the disadvantaged owner(s) actually control the business.

(h) The office may consider differences in remuneration between the disadvantaged owner(s) and other business participants in determining whether to certify a business. Such consideration must be in the context of the duties of the persons involved, normal industry practices, the business's policy and practice concerning reinvestment of income, and any other explanations for the differences proffered by the business. The office may determine a disadvantaged owner controls a business although that owner's remuneration is lower than that of some other participants in the business. In a case where a nondisadvantaged individual formerly controlled the business, and a disadvantaged individual now controls it, the office may consider a difference between the remuneration of the former and current controller of the business as a factor in determining who controls the business, particularly when the nondisadvantaged individual remains involved with the business and continues to receive greater compensation than the disadvantaged individual.

(i) In order to be viewed as controlling a business, a disadvantaged owner cannot engage in outside employment or other business interests that conflict with the management of the business or prevent the individual from devoting sufficient time and attention to the affairs of the business to control its activities. For example, absentee ownership of a business and part-time work in a full-time business are not viewed as constituting control. However, an individual could be viewed as controlling a part-time business that operates only on evenings or weekends, if the individual controls it all the time it is operating.

(j) A disadvantaged individual may control a business even though one or more of the individual's nondisadvantaged immediate family members, participate in the business as a manager, employee, owner, or in another capacity. Except as otherwise provided in this subsection, the office must make a judgment about the control the disadvantaged owner exercises vis-a-vis other persons involved in the business as the office does in other situations, without regard to whether or not the other persons are immediate family members. If the office cannot determine the disadvantaged owners, as distinct from the family as a whole, control the business, then the disadvantaged owners failed to carry their burden of proof concerning control, even though they may participate significantly in the business's activities.

(k) When a business was formerly owned or controlled by a nondisadvantaged individual, whether or not an immediate family member, and ownership or control was transferred to a disadvantaged individual, and the nondisadvantaged individual remains involved with the business in any capacity, there is a rebuttable presumption of control by the nondisadvantaged individual unless the disadvantaged individual now owning the business demonstrates to the office, by clear and convincing evidence, that:

(i) The transfer of ownership or control to the disadvantaged individual was made for reasons other than obtaining certification; and

(ii) The disadvantaged individual actually controls the management, policy, and operations of the business, notwithstanding the continuing participation of a nondisadvantaged individual who formerly owned or controlled the business.

(l) In determining whether its disadvantaged owner controls a business, the office may consider whether the business owns equipment necessary to perform its work. However, the office must not determine a business is not controlled by disadvantaged individuals solely because the business leases, rather than owns, such equipment, where leasing equipment is a normal industry practice and the lease does not involve a relationship with a prime contractor or other party that compromises the independence of the business.

(m) A business operating under a franchise or license agreement may be certified if it meets the standards in this paragraph and the franchiser or licenser is not affiliated with the franchisee or licensee. In determining whether affiliation exists, the office should generally not consider the restraints relating to standardized quality, advertising, accounting format, and other provisions imposed on the franchisee or licensee by the franchise agreement or license, provided the franchisee or licensee has the right to profit from its efforts and bears the risk of loss commensurate with ownership. Alternatively, even though a franchisee or licensee may not be controlled by virtue of such provisions in the franchise agreement or license, affiliation could arise through other means, such as common management or excessive restrictions on the sale or transfer of the franchise interest or license.

(n) The disadvantaged individual(s) controlling a business may use an employee leasing company. The use of such a company does not preclude the individual(s) from controlling their business if they continue to maintain an employer-employee relationship with the leased employees. This includes responsibility for hiring, firing, training, assigning, and otherwise controlling on-the-job activities of the employees, as well as ultimate responsibility for wage and tax obligations related to the employees.

AMENDATORY SECTION (Amending WSR 92-11-007, filed 5/11/92, effective 6/11/92)

WAC 326-20-081 ((~~Intertwinement.~~)) Independence. ((~~To be eligible for certification, a business must be independent. Intertwinement with a noncertified business may be grounds for denial or decertification of a business. The office will determine whether a business is intertwined with a noncertified business by looking for factors which include, but are not limited to, the following:~~

~~(1) Shared ownership;~~

~~(2) Common directors or partners;~~

~~(3) Shared equipment, facilities, resources, or employees;~~

~~(4) Beneficial financial arrangements which indicate less than arms length transactions with a noncertified business;~~

~~(5) Overdependency on a noncertified business to obtain and perform work;~~

~~(6) Such an identity of interest exists between the business seeking certification and a noncertified business that an affiliation may be presumed; and~~

~~(7) The degree to which financial, equipment, leasing, business and other relationships with noncertified businesses vary from normal industry practice.~~)) Only an independent business may be certified. An independent business is one the viability of which does not depend on its relationship with another business or businesses.

(1) In determining whether a potential certified business is an independent business, the office must scrutinize relationships with noncertified businesses in areas such as personnel, facilities, equipment, financial or bonding support, and other resources.

(2) The office must consider whether present or recent employer and employee relationships between the disadvantaged owner(s) of the potential certifiable business and noncertified business or persons associated with noncertified businesses compromise the independence of the potential certifiable business.

(3) The office must examine the business's relationships with prime contractors to determine whether a pattern of exclusive or primary dealings compromises the independence of the potential certifiable business.

(4) In considering factors relating to the independence of a potential certifiable business, the office must consider the consistency of relationships between the potential certifiable business and noncertifiable businesses with normal industry practice.

NEW SECTION

WAC 326-20-086 Native Americans—Native Hawaiians—Alaska native corporations. (1) A firm owned by a Native American tribe, native Hawaiian organization, or Alaska native corporation, rather than by individuals, may be eligible for certification. Such a firm must meet the size standards of WAC 326-20-096 and be controlled by a socially and economically disadvantaged individual(s) per WAC 326-20-080.

(2) A firm owned by a Native American tribe, native Hawaiian organization, or Alaska native corporation will not be considered affiliated with other businesses owned by the tribe, organization, or corporation if there is a firewall, such as a legally binding mechanism, in place to prevent firms from accessing the resources of the tribe's, organization's, or corporation's other businesses.

AMENDATORY SECTION (Amending WSR 04-08-075, filed 4/5/04, effective 5/6/04)

WAC 326-20-094 Assignment of North American Industrial Classification System (NAICS) code. (((~~(1) The office will determine which NAICS code an applicant falls under based on information submitted by the business. The office will prepare conversion tables showing the department of general administration's commodity code designations, the codes developed by the Construction Specifications Institute, and the corresponding NAICS codes listed in the directory of certified businesses as described in WAC 326-20-190.~~

~~(2) In the event the business plans to expand the areas in which it operates, it must notify the office in writing at least thirty calendar days before the effective date of such expansion.~~)) The office must grant certification to a business only for specific types of work the disadvantaged owner(s) have the ability to control. To become certified in an additional type of work, the business needs to demonstrate its owner(s) are able to control the business with respect to that type of work. The office must not require the business to recertify or submit a new certification application but verify the disadvantaged owner(s) control of the business in the additional type of work.

(1) The types of work a business can perform, whether at initial certification or when a new type is added, must be described in terms of the most specific available North American Industry Classification System (NAICS) code for that type of work. In addition to applying the appropriate NAICS code, the office may apply a descriptor from a classification

scheme of equivalent detail and specificity. A correct NAICS code is one describing, as specifically as possible, the principle goods or services the business would provide to the state. Multiple NAICS codes may be assigned when appropriate. The office must rely on, and not depart from, the plain meaning of NAICS code descriptions in determining the scope of a business's certification.

(2) Businesses and recipients must check carefully to make sure the NAICS codes cited in a certification are current and accurately reflect work the office has determined the business owners can control. The business bears the burden of providing detailed company information the office needs to make an appropriate NAICS code designation.

(3) If a business believes there is not a NAICS code that fully or clearly describes the type(s) of work in which it is seeking to be certified, the business may request the office, in its certification documentation, supplement the assigned NAICS code(s) with a clear, specific, and detailed narrative description of the type of work in which the business is certified. A vague, general, or confusing description is not sufficient for this purpose, and recipients must not rely on such a description in determining whether a business's participation can be counted toward goals.

(4) The office is not precluded from changing a certification classification or description if there is a factual basis in the record. However, the office must not make after-the-fact statements about the scope of a certification, not supported by evidence in the record of the certification action.

NEW SECTION

WAC 326-20-099 Small business concern requirement and size standards. (1) In addition to meeting the ownership and control requirements of chapter 39.19 RCW, a business must qualify as a small business concern for certification eligibility or recertification.

(a) A small business concern is a business that is independently owned and operated, is not dominant in its field of operations, and does not exceed the size limitations as set forth in the current table of North American Industrial Classification System (NAICS) codes or corresponding industry size standards as set forth in 49 C.F.R. Part 26 and amendments or inflationary adjustments thereof.

(b) The number of employees or amount of annual receipts listed as the size standard for each NAICS code indicates the maximum allowed for a business, including its affiliates, to qualify as a small business concern.

(c) The office's determination of whether a business qualifies as a small business concern must be, whenever possible, based on criteria consistent with the small business requirements defined under section 3 of the Small Business Act, 15 U.S.C. 632, and its implementing regulations, taking into consideration statewide markets.

(2) A business exceeding the small business size limits after certification by the office must be subject to graduation.

(3) At the time of application for certification and recertification, a business must demonstrate to the office that it is a small business concern. The office may verify the business is still a small business concern at any time after certification. In verifying the business's size, the office will review such financial documentation made available to the office, such as annual financial statements, federal income tax returns, state and local excise tax reports, and other relevant information.

(4) Except as otherwise provided in this chapter, affiliation occurs when either directly or indirectly:

(a) One business controls or has power to control the other;

(b) A third party or parties controls or has power to control both; or

(c) An "identity of interest" exists among them so the presumption of affiliation exists.

(5) When reference sets the maximum size standard to "annual receipts," a business exceeding the monetary figure in the standard is not eligible for certification. Annual receipts includes all revenue received or accrued from sources, such as sales of products or services, interest, dividends, rents, royalties, fees, or commissions, reduced by returns and allowances. The term "receipts" excludes proceeds from any of the following:

(a) Sales of capital assets and investments;

(b) Proceeds from transactions between a concern and its domestic and foreign affiliates;

(c) Proceeds from payments of notes receivable, accounts receivable, and amounts collected as an agent for another, such as gross bookings when a commission is earned, in which case only the commission earned constitutes revenue, and taxes collected for remittance to a taxing authority.

(6) The measurement period must comply with the following:

(a) The size of a business with three or more completed fiscal years will be determined by averaging the annual receipts of the business for the most recent three years;

(b) The size of a business with less than three fiscal years will be determined by computing the average of the annual receipts from the time the business formed, calculating total revenues compiled over the period divided by the number of weeks, including fractions of a week, multiplied by fifty-two;

(c) Method of determining annual receipts. Revenue may be taken from the regular books of account of the concern. If the office so elects or the business has not kept regular books of account or the Internal Revenue Service has found such records to be inadequate and has reconstructed income of the concern, then revenue as shown on the federal income tax return of the concern may be used in determining annual receipts along with other information the office deems relevant.

(7) Where the size standard is "number of employees," size eligibility requires the concern may not exceed the number of employees in that standard.

(a) "Number of employees" means that average employment of the concern, including domestic and foreign affiliate employees, based upon employment during each of the pay periods for the preceding completed twelve calendar months.

(b) In computing average employment, part-time and temporary employees count as full-time employees for each applicable pay period.

(c) If a concern has not been in business for twelve months, "number of employees" means the average employ-

ment of the concern, including its affiliates, during each of the pay periods during which it has been in business.

(8) No business, regardless of its primary NAICS code, is eligible for certification if it exceeds the largest annual revenue limit contained in 49 C.F.R. Part 26 and any amendments or inflationary adjustments thereof.

(9) In determining the business's primary industry, including its affiliates, the office must consider the distribution of receipts, employees, and costs in the differing industry areas the business operated during its most recently completed fiscal year. Other factors, such as patents, contract awards, and assets, may be considered.

(10) If the activities of the business encompass two or more NAICS codes, the first NAICS code listed in the directory is the primary industry classification of the business.

(11) A business exceeding the small business size limits after certification by the office must be subject to graduation.

(12) For purposes of utilization on projects funded by any operating modal of the U.S. Department of Transportation the maximum dollar size standard in 49 C.F.R. Part 26 as may be amended or adjusted for inflation, must apply, even if the size standard would otherwise be set by reference to number of employees. This standard is a maximum. Certified businesses are still subject to applicable lower limits on business size as established by the United States Small Business Administration and these regulations.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 326-20-030	Proof of minority status.
WAC 326-20-040	Proof of woman's status.
WAC 326-20-092	Small business concern requirement.
WAC 326-20-095	Determination of firm size.
WAC 326-20-096	Size standard.
WAC 326-20-115	Signatures of applicant business owners.

WSR 19-13-022
PERMANENT RULES
HEALTH CARE AUTHORITY

[Filed June 10, 2019, 1:49 p.m., effective July 11, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: As authorized in SSB 5883, the agency is creating rules for a new model of care called collaborative care model which is part of the integration of mental health and physical health.

Citation of Rules Affected by this Order: New WAC 182-531-0425.

Statutory Authority for Adoption: RCW 41.05.021, 41.05.160.

Other Authority: SSB 5779 Concerning behavioral health integration in primary care, RCW 41.05.021, 41.05.-160.

Adopted under notice filed as WSR 19-06-083 on March 6, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 1, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 1, Amended 0, Repealed 0.

Date Adopted: June 10, 2019.

Wendy Barcus
Rules Coordinator

NEW SECTION

WAC 182-531-0425 Collaborative care. (1) Under the authority of RCW 74.09.497, and subject to available funds, the medicaid agency covers collaborative care provided in clinical care settings.

(2) For the purposes of this section:

(a) **Collaborative care** means a specific type of integrated care where medical providers and behavioral health providers work together to address behavioral health conditions, including mental health conditions and substance use disorders.

(b) **Collaborative care model** is a model of behavior health integration that enhances usual clinical care by adding two key services:

(i) Care management support for clients receiving behavioral health treatment; and

(ii) Regular psychiatric or board certified addiction medicine consultation with the clinical care team, particularly for clients whose conditions are not improving.

(c) **Collaborative care team** means a team of licensed behavioral health professionals operating within their scope of practice who participate on the clinical care team along with the collaborative care billing provider to provide collaborative care to eligible clients. The team must include a collaborative care billing provider, a behavioral health care manager, and a psychiatric consultant. Professionals making up this team include, but are not limited to:

(i) Advanced registered nurses;

(ii) Chemical dependency professionals;

(iii) Chemical dependency professional trainees under the supervision of a certified chemical dependency professional;

(iv) Marriage and family therapists;

(v) Marriage and family therapist associates under the supervision of a licensed marriage and family therapist or equally qualified mental health practitioner;

(vi) Mental health counselors;

(vii) Mental health counselor associates under the supervision of a licensed mental health counselor, psychiatrist, or physician;

(viii) Physicians;

(ix) Physician assistants under the supervision of a licensed physician;

(x) Psychiatrists;

(xi) Psychiatric advanced registered nurses;

(xii) Psychologists;

(xiii) Registered nurses;

(xiv) Social workers;

(xv) Social worker associate-independent clinical, under the supervision of a licensed independent clinical social worker or equally qualified mental health practitioner; and

(xvi) Social worker associate-advanced, under the supervision of a licensed independent clinical social worker, advanced social worker, or equally qualified mental health practitioner.

(3) The behavioral health care manager is a designated licensed professional with formal education or specialized training in behavioral health (including social work, nursing, or psychology), working under the oversight and direction of the treating medical provider.

(4) The collaborative care billing provider must meet all of the following:

(a) Be enrolled with the agency as one of the following:

(i) A physician licensed under Titles 18 RCW and 246 WAC;

(ii) An advanced registered nurse practitioner licensed under Titles 18 RCW and 246 WAC;

(iii) A federally qualified health center (FQHC);

(iv) A rural health clinic (RHC); or

(v) A clinic that is not an FQHC or RHC that meets the requirements of Titles 70 RCW and 247 WAC.

(b) Complete, sign, and return the Attestation for Collaborative Care Model, form HCA 13-0017, to the agency; and

(c) Agree to follow the agency's guidelines for practicing a collaborative care model.

(5) Providers of collaborative care must:

(a) Use a registry to track the client's clinical outcomes;

(b) Use at least one validated clinical rating scale;

(c) Ensure the registry is used in conjunction with the practice's electronic health records (EHR);

(d) Include a plan of care; and

(e) Identify outcome goals of the treatments.

(6) If a provider no longer meets the agreed upon requirements in the agency's Attestation for Collaborative Care Model, form HCA 13-0017, the provider must immediately notify the agency. The agency does not pay for collaborative care if a provider does not meet the agreed upon requirements.

(7) Providers are subject to post pay review by the agency. The agency may recoup payment if the provider is found to have not met the requirements for providing collaborative care as agreed to in the agency's Attestation for Collaborative Care Model, form HCA 13-0017.

WSR 19-13-031
PERMANENT RULES
UTILITIES AND TRANSPORTATION COMMISSION

[Docket U-161024, General Order R-597—Filed June 12, 2019, 8:00 a.m., effective July 13, 2019]

Reviser's note: The material contained in this filing exceeded the page-count limitations of WAC 1-21-040 for appearance in this issue of the Register. It will appear in the 19-15 issue of the Register.

WSR 19-13-034
PERMANENT RULES
DEPARTMENT OF HEALTH

[Filed June 12, 2019, 11:34 a.m., effective October 1, 2019]

Effective Date of Rule: October 1, 2019.

Purpose: WAC 246-808-990 Chiropractic fees and renewal cycle, 246-830-990 Massage fees and renewal cycle, 246-841-990 Nursing assistant—Fees and renewal cycle and 246-940-990 Certified animal massage therapist—Fees and renewal cycle, the adopted rules increase application and active license renewal fees and update late renewal penalties for chiropractors, chiropractic X-ray technicians, massage therapists, nursing assistants, and animal massage therapists. The fee increases are needed to generate sufficient revenue to address projected large deficits for these professions and maintain reserves necessary to cover unanticipated expenditures, such as costly disciplinary cases. Without these fee increases, the programs cannot remain self-supporting, as required in RCW 43.70.250.

Citation of Rules Affected by this Order: Amending WAC 246-808-990, 246-830-990, 246-841-990, and 246-940-990.

Statutory Authority for Adoption: RCW 43.70.250 and 43.70.280.

Adopted under notice filed as WSR 19-08-087 on April 3, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 4, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 4, Repealed 0.

Date Adopted: June 11, 2019.

Jessica Todorovich
Chief of Staff
for John Wiesman, DrPH, MPH
Secretary

AMENDATORY SECTION (Amending WSR 17-08-061, filed 3/31/17, effective 8/1/17)

WAC 246-808-990 Chiropractic fees and renewal cycle. (1) Licenses and registrations must be renewed on the practitioner's birthday every year as provided in chapter 246-12 WAC, Part 2.

(2) The following nonrefundable fees will be charged for chiropractic licensure:

Title of Fee	Fee
Original application	
Application	$((~~330.00~~)) 625.00
Jurisprudence examination and reexamination	100.00
UW online access fee (HEAL-WA)	16.00
Temporary practice permit	
90-day permit	105.00
Preceptorship - Initial and renewal	155.00
Active license renewal	
Renewal	((~~380.00~~)) 550.00
Late renewal penalty	((~~190.00~~)) 225.00
Expired license reissuance	302.00
UW online access fee (HEAL-WA)	16.00
Inactive license renewal	
Renewal	257.00
Expired license reissuance	157.00
Duplicate license	30.00
Verification of license	30.00

(3) The following nonrefundable fees will be charged for chiropractic X-ray technician registration:

Title of Fee	Fee
Application	((~~47.00~~)) 135.00
Original registration	47.00
Renewal	((~~62.00~~)) 90.00
Late renewal penalty	((~~62.00~~)) 50.00
Expired registration reissuance	62.00
Duplicate registration	30.00
Verification of registration	30.00

AMENDATORY SECTION (Amending WSR 16-15-013, filed 7/8/16, effective 10/1/16)

WAC 246-830-990 Massage fees and renewal cycle. (1) Licenses must be renewed every year on the practitioner's birthday as provided in chapter 246-12 WAC, Part 2.

(2) The following nonrefundable fees will be charged:

Title of Fee	Fee
Original application	
Application and initial license	((~~125.00~~)) $210.00
UW online access fee (HEAL-WA)	16.00
Active license renewal	
Renewal	((~~90.00~~)) 150.00
Late renewal penalty	((~~50.00~~)) 75.00
Expired license reissuance	50.00
UW online access fee (HEAL-WA)	16.00
Inactive license renewal	
Inactive license renewal	50.00
Expired inactive license reissuance	50.00
UW online access fee (HEAL-WA)	16.00
Verification of license	10.00
Duplicate license	10.00
Intraoral massage endorsement	25.00

AMENDATORY SECTION (Amending WSR 16-15-013, filed 7/8/16, effective 10/1/16)

WAC 246-841-990 Nursing assistant—Fees and renewal cycle. (1) Credentials must be renewed every year on the practitioner's birthday as provided in chapter 246-12 WAC, Part 2.

(2) The following nonrefundable fees will be charged for registration credentials:

Title of Fee	Fee
Application - Registration	$((~~65.00~~)) 85.00
Renewal of registration	((~~70.00~~)) 95.00
Duplicate registration	10.00
Registration late penalty	50.00
Expired registration reissuance	52.00

(3) The following nonrefundable fees will be charged for certification credentials:

Title of Fee	Fee
Application for certification	$((~~65.00~~)) 85.00

Title of Fee	Fee
Certification renewal	((~~70.00~~)) 95.00
Duplicate certification	10.00
Certification late penalty	50.00
Expired certification reissuance	52.00

(4) The following nonrefundable fees will be charged for medication assistant endorsement credentials:

Title of Fee	Fee
Application for endorsement	$25.00
Endorsement renewal	10.00

AMENDATORY SECTION (Amending WSR 17-11-058, filed 5/16/17, effective 7/1/17)

WAC 246-940-990 Certified animal massage therapist—Fees and renewal cycle. (1) Certification must be renewed every year on or before the animal massage therapist's birthday as provided in chapter 246-12 WAC, Part 2.

(2) The following nonrefundable fees will be charged for certification:

Title of Fee	Fee
Application for large animal certification	$((~~250.00~~)) 440.00
Application for small animal certification	((~~250.00~~)) 440.00
Renewal of certification for large animal certification	((~~190.00~~)) 335.00
Renewal of certification for small animal certification	((~~190.00~~)) 335.00
Late renewal penalty fee per certification	((~~95.00~~)) 170.00
Expired credential reissuance fee per certification	95.00
Duplicate credential per certification	30.00
Verification of credential per certification	30.00

WSR 19-13-041
PERMANENT RULES
DEPARTMENT OF HEALTH

[Filed June 12, 2019, 12:21 p.m., effective July 13, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: Chapter 246-828 WAC, Hearing and speech rules, the board of hearing and speech is adopting these rules to better align with industry standards by more clearly describing and clarifying when a hearing aid specialist credential applicant may apply to take a written licensing exam, and updating postgraduate professional work experience requirements for audiologists and speech pathologists, supervision of audiologist and speech-language pathologist interim permit holders, and approval of educational programs for hearing aid specialist instruction. The rules also repeal procedures for hearing aid specialists to appeal examination results since the contract with the examination agency does not allow appeals to the board.

Citation of Rules Affected by this Order: Repealing WAC 246-828-040; and amending WAC 246-828-020, 246-828-025, 246-828-045, 246-828-04503, 246-828-04505, and 246-828-600.

Statutory Authority for Adoption: RCW 18.35.161.

Adopted under notice filed as WSR 19-06-048 on March 4, 2019.

A final cost-benefit analysis is available by contacting Kim-Boi Shadduck, Department of Health, P.O. Box 47852, Olympia, WA 98504-7852, phone 360-236-2912, fax 360-236-2901, TTY 360-833-6388 or 711, email kimboi.shadduck@doh.wa.gov.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 6, Repealed 1.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 6, Repealed 1.

Date Adopted: March 22, 2019.

Lisa Illich, Chair
Board of Hearing and Speech

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-020 Examinations. (1) ((~~All~~)) A hearing aid specialist credential applicant((~~s are~~)) is required to take the written International Licensing Exam developed by the International Hearing Society or other entity approved by the board. An applicant((~~s~~)) must obtain a passing score as recommended by the examination administrator and as approved by the board. An applicant may apply to take the written examination no more than ninety days prior to the anticipated completion date of the educational program. The anticipated completion date must be verified by the educational program.

(2) Hearing aid specialist credential applicants who have completed a board-approved nine-month certificate program are required to take the practical examination approved by the board. Applicants must obtain a passing score as recommended by the examination administrator and as approved by the board.

(3) Audiology credential applicants are required to take the Praxis audiology exam or other entity approved by the board. Applicants must obtain a passing score as recom-

mended by the examination administrator and as approved by the board.

(4) Speech-language pathologist credential applicants are required to take the Praxis speech-language pathology exam or other entity approved by the board. Applicants must obtain a passing score as recommended by the examination administrator and as approved by the board.

(5) All credential applicants are required to take and pass a jurisprudence examination approved by the board. The passing score on the jurisprudence examination is one hundred percent.

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-025 Definitions. The ((~~following~~)) definitions in this section apply throughout this chapter unless the context clearly indicates otherwise.

(1) "Board-approved institution of higher education" means:

(a) An institution offering a program in audiology or speech-language pathology leading to a master's degree or its equivalent, or a doctorate degree or its equivalent, that has been accredited by the council on academic accreditation in audiology and speech-language pathology, or an equivalent program.

(b) An institution offering a speech-language pathology assistant program or a speech, language, and hearing program approved by the state board for community and technical colleges, the higher education coordinating board, or an equivalent body from another state or province. Institutions where education was obtained outside of the United States or Canada has an equivalency determination completed by the board. This program must lead to an associate of arts or sciences degree, certificate of proficiency, or bachelor of arts or sciences degree.

(c) A board-approved institution must integrate instruction in multicultural health as part of its basic education preparation curriculum under RCW 43.70.615.

(2) "Direct supervision" means the supervisor is on-site and in view during the procedures or tasks.

(3) "Indirect supervision" means the procedures or tasks are performed under the supervising speech-language pathologist's, audiologist's, or hearing aid specialist's overall direction and control and the supervisor is accessible, but the supervisor's presence is not required during the performance of procedures or tasks.

(4) "Place or places of business" means a permanent address open to the public, which may include an "establishment" as defined in RCW 18.35.010(6), where a licensee engages in the fitting and dispensing of hearing instruments.

(5) "Postgraduate professional work experience" means a supervised full-time professional experience, or the part-time equivalent, as defined in these rules, involving direct patient or client contact, consultations, recordkeeping, and administrative duties relevant to a bona fide program of clinical work((~~.~~

~~(a) "Full-time professional experience" means at least 30 hours per week over 36 weeks. Postgraduate professional work experience must be obtained over a period of at least 36 weeks. Applicants who obtain an Au.D. at a board-approved institution of higher education are considered to have met the postgraduate professional work experience requirement.~~

~~(b) "Part-time equivalent" means any of the following:~~

~~(i) 15-19 hours per week over 72 weeks;~~

~~(ii) 20-24 hours per week over 60 weeks;~~

~~(iii) 25-29 hours per week over 48 weeks~~)). Applicants who obtain an Au.D. at a board-approved institution of higher education are considered to have met the postgraduate professional work experience requirement.

(6) "Purchaser" or "buyer" means a patient, client, or legally authorized representative.

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-045 Interim permit—Audiologist and speech-language pathologist. (1) The department will issue an interim permit to any audiologist or speech-language pathologist applicant who has shown to the satisfaction of the department that the applicant:

(a) Has completed the academic course work and clinical practicum as required in RCW 18.35.040.

(b) Is supervised by a speech-language pathologist or audiologist who is licensed and in good standing under chapter 18.35 RCW unless otherwise approved by the board.

(c) Has paid the application and permit fee as required by WAC 246-828-990.

(2) The interim permit must contain the name and title of the approved supervisor ((~~licensed under chapter 18.35 RCW~~)).

(3) The interim permit expires one year from the date it is issued. The board may extend the interim permit up to an additional twenty-four months to accommodate part-time postgraduate professional work experience or upon request of the interim permit holder due to illness or extenuating circumstances.

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-04503 Postgraduate professional work experience requirements—Audiologist and speech-language pathologist. (1)(a) The interim permit period must consist of at least thirty-six weeks of full-time postgraduate professional work experience or its part-time equivalent.

(((~~(a)~~))) (b) Full-time post graduate professional experience means at least thirty hours per week over thirty-six weeks. Postgraduate professional work experience must be obtained over a period of at least thirty-six weeks, with a total of at least one thousand eighty hours completed.

(c) Part-time equivalent means at least fifteen hours per week completed within a thirty-six to seventy-two week time frame, with a total of at least one thousand eighty hours completed. The board may extend the interim permit period under WAC 246-828-045.

(d) Postgraduate professional work experience of less than fifteen hours per week does not meet the requirement and may not be counted toward the postgraduate professional work experience. Experience of more than thirty hours per

week may not be used to shorten the postgraduate professional work experience to less than thirty-six weeks.

((~~(b)~~)) (2) The supervisor must submit to the department, on a form provided by the department, documentation of supervision and progress during the postgraduate professional work experience, at the end of ((~~each three-month period.~~

~~(2)~~)) the postgraduate professional work experience, unless there are concerns documented by the supervisor. Documented concerns must be submitted to the department within thirty days.

(3) Postgraduate professional work experience will be accepted if completed under a supervisor who is licensed and in good standing under chapter 18.35 RCW or holds a license in another state that the board has determined to be substantially equivalent to Washington state.

(4) The supervisor must cosign all purchase agreements in the fitting and dispensing of hearing instruments.

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-04505 ((~~Supervisor delegation for~~)) Supervision of audiologist and speech-language pathologist interim permit holders. (1) The supervisor may delegate portions of the supervisory activities to another ((~~qualified~~)) licensed supervisor of the same discipline ((~~in another facility~~)) working for the same employer or contracting entity. Before delegating supervision responsibility to another licensed supervisor of the same discipline working for a different employer or contracting entity, the supervisor must obtain department approval.

(2) An interim permit holder may have more than one approved supervisor when working under more than one employer or contracting entity.

(3) The department may approve a qualified supervisor upon the written request of the supervisor or the interim permit holder.

((~~(3)~~)) (4) The supervisor of an interim permit holder who desires to terminate the responsibility as supervisor must immediately notify the department in writing of the termination. The supervisor is responsible for the interim permit holder until the notification of termination is received by the department.

((~~(4)~~)) (5) The interim permit holder must immediately report the termination of a supervisor to the department in writing. The interim permit holder may only practice with an approved supervisor.

((~~(5)~~)) (6) An audiologist or speech-language pathologist licensed and in good standing under chapter 18.35 RCW may supervise up to four interim permit holders concurrently.

AMENDATORY SECTION (Amending WSR 15-14-092, filed 6/29/15, effective 7/1/15)

WAC 246-828-600 Approval of programs for hearing aid specialist instruction. (1) Minimum educational requirements for licensure to practice as a hearing aid specialist in Washington are:

(a) Satisfactory completion of a two-year degree program in hearing aid specialist instruction approved by the board. The board will consider for approval any program which meets the requirements as outlined in this section; ((~~or~~))

(b) A two-year or four-year degree in a field of study approved by the board from an accredited institution and satisfactory completion of a nine-month certificate program in hearing aid specialist instruction approved by the board. Two-year and four-year degrees must be completed prior to enrolling in a nine-month certificate program. The board will consider for approval any program which meets the requirements as outlined in this section((~~.~~)); or

(c) Acceptable prerequisite degrees for entry into nine-month certificate programs are baccalaureate or associate degrees from accredited institutions in any field of study which include at least five quarter credits or four semester credits each of 100 level or greater English composition((~~, basic math,~~)) and humanities, and at least four quarter credits or three semester credits of 100 level or greater basic math.

(2) Procedure for approval of two-year degree programs in hearing aid specialist instruction:

(a) An authorized representative of an institution may apply for approval from the board.

(b) The application for approval must be submitted on forms provided by the department.

(c) The authorized representative of the program may request approval of the program as of the date of the application or retroactively to a specified date.

(d) The program application for approval must include, but may not be limited to, documentation required by the board pertaining to curriculum standards as set in WAC 246-828-615.

(e) A program must be fully recognized by the appropriate accreditation body in that jurisdiction.

(f) The board will evaluate the application and may conduct a site inspection of the program prior to granting approval by the board.

(g) Upon completion of the evaluation of the application, the board may grant or deny approval or grant approval conditioned upon appropriate modification of the application.

(h) An authorized representative of an approved program must notify the board of significant changes with respect to information provided on the application within sixty days of change.

(3) Procedure for approval of nine-month certificate programs in hearing aid specialist instruction:

(a) An authorized representative of a program may apply for approval from the board.

(b) The application for approval must be submitted on forms provided by the department.

(c) The authorized representative of the program may request approval of the program as of the date of the application or retroactively to a specified date.

(d) The program application for approval must include, but may not be limited to, documentation required by the board pertaining to curriculum standards as set in WAC 246-828-615.

(e) The board will evaluate the application and may conduct a site inspection of the program prior to granting approval by the board.

(f) Upon completion of the evaluation of the application, the board may grant or deny approval or grant approval conditioned upon appropriate modification of the application.

(g) An authorized representative of an approved program must notify the board of significant changes with respect to information provided on the application within sixty days of change.

(4) The board may inspect a currently approved program or a program requesting approval. These inspections may be at any reasonable time during the normal business hours of the program. The board may withdraw its approval if it finds the program has failed to comply with requirements of law, administrative rules, or representations in the application.

REPEALER

The following section of the Washington Administrative Code is repealed:

WAC 246-828-040 Examination review and appeal procedures—Hearing aid specialist.

WSR 19-13-064

PERMANENT RULES

HORSE RACING COMMISSION

[Filed June 14, 2019, 2:56 p.m., effective July 15, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: To correct an error discovered regarding the acceptable threshold level in urine for geldings for testosterone.

Citation of Rules Affected by this Order: Amending WAC 260-70-630.

Statutory Authority for Adoption: RCW 67.16.020.

Adopted under notice filed as WSR 19-08-017 on March 25, 2019.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 1, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 1, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 14, 2019.

Douglas L. Moore
Executive Secretary

AMENDATORY SECTION (Amending WSR 19-03-081, filed 1/14/19, effective 2/14/19)

WAC 260-70-630 Threshold levels. (1) Permitted medications.

(a) The following quantitative medications and/or metabolites are permissible in test samples up to the stated concentrations in urine:

Acepromazine - 10 ng/ml
Albuterol - 1 ng/ml
Bupivicaine - 5 ng/ml
Butorphanol - 300 ng/ml
Carboxydetomidine - 1 ng/ml
Clenbuterol - 140 pg/ml (in quarter horse and mixed breed races the presence of clenbuterol is prohibited)
Mepivacaine - 10 ng/ml
Promazine - 25 ng/ml
Pyrilamine - 25 ng/ml

(b) The following quantitative medications and/or metabolites are permissible in test samples up to the stated concentrations in serum or plasma:

Betamethasone - 10 pg/ml
Butorphanol - 2 ng/ml
Clenbuterol - 2 pg/ml (in quarter horse and mixed races the presence of clenbuterol is prohibited)
Cetirizine - 6 ng/ml
Cimetidine - 400 ng/ml
Dantrolene - 100 pg/ml
Detomidine - 1 ng/ml
Dexamethasone - 5 pg/ml
Diclofenac - 5 ng/ml
DMSO - 10 mcg/ml
Firocoxib - 20 ng/ml
Glycopryrrolate - 3 pg/ml
Guaifenesin - 12 ng/ml
Isoflupredone - 100 pg/ml
Lidocaine - 20 pg/ml
Methocarbamol - 1 ng/ml
Methylprednisolone - 100 pg/ml
Omeprazole - 10 ng/ml
Prednisolone - 1 ng/ml
*Procaine penicillin - 25 ng/ml
Ranitidine - 40 ng/ml
Triamcinolone acetonide - 100 pg/ml
Xylazine - 200 pg/ml

* Administration of procaine penicillin to those horses entered must be reported to the commission and may require surveillance up to six hours prior to post time.

(c) Hair samples in pre- or post-race testing for quarter horses and mixed breed races may not be found to contain clenbuterol, ractopamine, zilpaterol, or albuterol in any concentration.

(d) Where a permitted medication has thresholds in both urine and serum or plasma, as set forth in this section, it is not a defense to a violation that the permitted medication does not exceed both thresholds.

(2) Androgenic-anabolic steroids.

(a) The following androgenic-anabolic steroids are permissible in test samples up to the stated concentrations after hydrolysis of conjugates in urine:

Boldenone (Equipoise) - 15 ng/ml urine in male horses other than geldings - 1 ng/ml in urine for geldings, fillies or mares.

Nandrolone (Durabolin) - 1 ng/ml urine in geldings, fillies, and mares, and for nandrolone metabolite (5a-oestrane-3β,17a-diol) - 45 ng/ml urine in male horses other than geldings.

Testosterone - Not ((~~less~~)) greater than 20 ng/ml urine in geldings. Not greater than 55 ng/ml urine in fillies and mares (unless in foal). Samples from male horses other than geldings will not be tested for the presence of testosterone.

(b) The following androgenic-anabolic steroids are permissible in test samples up to the stated free (not conjugated), concentration in plasma or serum:

Boldenone (equipoise) - 25 pg/ml for all horses regardless of sex.

Nandrolone (durabolin) - 25 pg/ml for fillies and mares and geldings, male horses other than geldings shall be tested for nandrolone in urine.

Testosterone - 100 pg/ml in fillies, mares, and geldings.

(c) The sex of the horse must be identified to the laboratory on samples submitted for all pre- and post-race testing designated specifically for AAS screening.

(d) If an anabolic steroid is reported as administered to any horse to assist it with recovery from injury or illness, the horse may be placed on the official veterinarian list until such time as a sample is submitted and the levels are reported below the approved thresholds.

(e) All other androgenic-anabolic steroids are prohibited in race horses.

WSR 19-13-071
PERMANENT RULES
PARAEDUCATOR BOARD

[Filed June 17, 2019, 8:05 a.m., effective July 18, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: To clarify use of professional growth plans in relation to obtaining the general paraeducator certificate.

Citation of Rules Affected by this Order: Amending WAC 179-11-040.

Statutory Authority for Adoption: Chapter 28A.413 RCW.

Adopted under notice filed as WSR 19-02-011 on December 20, 2018.

A final cost-benefit analysis is available by contacting Rules Coordinator, Old Capitol Building, Olympia, Washington 98502, phone 360-725-6275, email rulespesb@k12.wa.us, web site www.PESB.wa.gov.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 1, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 14, 2019.

Justin Montermini
Rules Coordinator

AMENDATORY SECTION (Amending WSR 18-16-107, filed 7/31/18, effective 8/31/18)

WAC 179-11-040 Process. (1) School districts must implement this section only in school years for which state funding is appropriated specifically for the purposes of this section and only for the number of days that are funded by the appropriation.

(2) The paraeducator must complete the general paraeducator certificate in three years after completing the fundamental course of study, as follows:

(a) If the fundamental course of study is completed prior to June 30th of a calendar year, then it shall have a completion date calculated on the basis that it was completed on June 30th of the same calendar year regardless of the date of completion; and

(b) If the fundamental course of study is completed July 1st or later in the calendar year, then it shall have a completion date calculated on the basis that it was completed on June 30th of the next calendar year regardless of the date of completion.

(3) To attain the paraeducator general certificate, the paraeducator must complete training that meets in-service education approval standards as written in chapter 181-85 WAC.

(4) A maximum of one professional growth plan may be completed towards the attainment of the general paraeducator certificate.

(5) A paraeducator who holds the English language learner subject matter certificate and/or special education subject matter certificate may deduct twenty continuing education credit hours per subject matter certificate from the hours required to meet the general paraeducator certificate.

(((~~(5)~~))) (6) The paraeducator shall be responsible for completing filing requirements with the superintendent of public instruction, in accordance with WAC 179-01-020, the completion of the general paraeducator certificate.

WSR 19-13-080
PERMANENT RULES
DEPARTMENT OF HEALTH
(Chiropractic Quality Assurance Commission)

[Filed June 17, 2019, 4:16 p.m., effective July 18, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: WAC 246-808-020 Accreditation and approval of colleges—Policy (formerly Colleges—Policies), 246-808-030 Accreditation of colleges—Procedure, and 246-808-040

Colleges—Educational standards required for accreditation. The chiropractic quality assurance commission (commission) adopted revisions of these sections to update, clarify, and modernize the language of these rules. The commission also adopted WAC 246-808-050 Early remediation program—Purpose, 246-808-060 Early remediation program—Definitions, and 246-808-070 Early remediation program—Criteria, to create an alternative to correcting allegations of practice deficiencies of a less serious nature than those requiring formal discipline.

Citation of Rules Affected by this Order: New WAC 246-808-050, 246-808-060 and 246-808-070; and amending WAC 246-808-020, 246-808-030, and 246-808-040.

Statutory Authority for Adoption: RCW 18.25.0171 and 18.130.050.

Adopted under notice filed as WSR 18-24-121 on December 5, 2018.

A final cost-benefit analysis is available by contacting Robert Nicoloff, Exectutive [Executive] Director, P.O. Box 47858, Olympia, WA 98504-7858, phone 360-236-4924, fax 360-236-2360, TTY 360-833-6388 or 711, email cqac@doh.wa.gov, web site www.doh.wa.gov/CQAC.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 3, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 3, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 3, Amended 3, Repealed 0.

Date Adopted: January 10, 2019.

Aaron W. Chan, DC, Chair
Chiropractic Quality Assurance Commission

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-020 Accreditation and approval of chiropractic colleges—Policy. (1) In determining a chiropractic college's eligibility for accreditation and approval in the state of Washington, the commission may utilize((, at its discretion,)) recognized national or international chiropractic accrediting ((associations, recognized regional accrediting associations, and appropriate professional firms, agencies and individuals)) bodies that meet the criteria in WAC 246-808-040 (3)(d), (e), and (f), unless the chiropractic college applies directly to the commission for accreditation and approval under RCW 18.25.025, and meets all criteria of WAC 246-808-040.

(2) ((Accreditation shall be)) The commission shall accredit and approve chiropractic colleges primarily contingent upon a course of study ((which)) that incorporates educationally sound practices and complies with the chiropractic educational requirements for the state of Washington as defined in WAC 246-808-040.

(((3) A college must have successfully graduated a class prior to making application for accreditation.))

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-030 Accreditation of chiropractic colleges—Procedure. In determining a chiropractic college's eligibility for accreditation and approval in the state of Washington, the chiropractic college must be accredited by a commission-recognized national or international accrediting body whose standards meet the criteria of WAC 246-808-040 (3)(d), (e), and (f), or receive accreditation and approval from the commission in accordance with RCW 18.25.025 and WAC 246-808-040.

(1) Application and determination. ((A chiropractic college which desires to be accredited by the commission may secure an application form by sending a written request to the commission. The applicant shall complete the application form and submit it to the commission, along with any accompanying documents. Recent photographs of the college or the buildings in which the college is located shall be submitted with the application.))

(a) To apply for accreditation and approval by the commission, a chiropractic college shall send a written request to the commission requesting an application form. The applicant shall complete the application form and submit it to the commission, along with any accompanying documents, and recent photographs of the chiropractic college or the buildings in which the chiropractic college is located.

(b) Within one hundred twenty days after the receipt of the completed application, the commission shall consider the application, determine whether or not the chiropractic college fulfills the requirements ((for accreditation)) in WAC 246-808-040, and notify the applicant((, by mail,)) of the commission's determination. If the commission determines that the chiropractic college ((is not)) cannot be accredited and approved ((for accreditation)), the notice shall ((set forth)) include the reasons for denial. The commission may withhold making a determination for a reasonable period of time for any justifiable cause upon giving notice to the applicant.

(2) ((Interrogatories. If)) Additional information. The commission ((desires, it)) may request additional information from the applicant ((to)) including answers to specific inquiries. The ((granting or the denial of accreditation may be)) commission may grant or deny the accreditation and approval contingent upon the applicants' response to such inquiries.

(3) ((Oath. The answers to the inquiries in the application, and any other inquiries, shall be sworn to before a notary public.

(4))) Inspection. ((If)) The commission ((desires, it)), at its discretion, may make ((the)) a physical inspection of ((a particular)) the applicant's chiropractic college a condition for ((its being accredited. Reasonable costs for necessary on-campus visitation shall be paid by the applicant.

(5))) accreditation and approval.

(4) Duration. ((~~A college which is once accredited~~)) An accredited and approved chiropractic college shall continue to be accredited and approved for ((~~so~~)) as long as it fulfills the requirements ((~~set forth by the commission, or to be set forth by the commission. Upon receiving convincing evidence that a college has ceased to fulfill the requirements, the commission shall withdraw the accreditation of the college and shall inform the college of its reasons for doing so~~)) of this chapter.

(a) A chiropractic college shall ((~~inform~~)) report to the commission ((~~of~~)) any changes((~~, if any, in status which could reasonably jeopardize the~~)) to its accreditation status, financial solvency, ownership status, administration, or curriculum.

(b) A chiropractic college shall also report any changes to its faculty, facilities, or equipment that may affect the chiropractic college's qualifications for ((~~accreditation. Such changes shall include, but are not limited to, changes in curriculum, administration, faculty, classrooms and equipment.~~

~~(6) Revocation of accreditation. When the commission receives evidence that an accredited institution is not complying with commission criteria, it may, after meeting with institutional representatives, place the institution on probation. The institution shall be supplied~~)) commission accreditation and approval.

(5) Enforcement. The commission may place an accredited and approved chiropractic college on probation when the commission receives evidence that the chiropractic college is not meeting criteria for continued commission accreditation and approval. The commission will provide the chiropractic college with a written statement of ((~~charges setting forth~~)) deficiencies describing the specific((~~s~~)) areas of ((~~the~~)) noncompliance. The commission and ((~~chief administrative officer of the institution~~)) the chiropractic college may agree on a mutually acceptable timetable and procedures for correction of the deficiencies or the commission may set the timetable. Should the ((~~institution~~)) chiropractic college not make the required corrections ((~~recommended~~)), or should further deficiencies develop during the probation, the commission may((~~, after meeting with institutional representatives,~~)) revoke the ((~~accreditation~~)) approval of the chiropractic college. The commission need not place a chiropractic college on probation before pursuing suspension or revocation of the approval.

(((~~(7) Reinstatement of accredited status. Once the commission has revoked the accredited status of an institution, it must reapply by submitting either a new self-study or an updated self-study as may be required by the commission. The commission's usual procedure for applicants for initial accreditation and petitions for renewal is applied to petitioners for reinstatement. The visitation team report, hearing evidence and supporting data must show not only correction of the deficiencies which led to the disaccreditation but, in addition, compliance with the commission's criteria.~~

~~(8) Appeal. An appeal of a decision adverse to the college~~)) (6) Appeal. A chiropractic college whose approval is suspended or revoked may request an adjudicative proceeding under chapter 246-11 WAC to contest the decision. A request for an adjudicative proceeding must be filed with the commission within thirty calendar days of ((~~receipt~~)) service of the commission's ((~~written~~)) notice of decision. ((~~To be valid the appeal must contain a certified copy of a formal action authorizing the appeal, taken by a lawfully constituted meeting of the governing body of the institution. The appeal is based on a review of self-evaluation documents, catalog, visitor's report, institution's response to visitor's report, predecision hearing of the commission and commission decision. Alleged improvements effective subsequent to the evaluation which can be verified only through another on-site visit provide the basis for another evaluation, not for an appeal. An appeal does not include a dispute on a finding of fact unless appellant presents a valid reason showing the finding is clearly erroneous in view of the reliable, probative and substantial evidence on the whole record before the commission. The commission shall meet to consider the appeal at its earliest opportunity, and send a formal reply to the appealing college within thirty days of such meeting, unless it extends the time for good cause shown.~~))

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-040 Chiropractic colleges—Educational standards required for accreditation and approval. (1) ((~~Objectives - The college~~)) A chiropractic college seeking to obtain or maintain commission accreditation and approval shall have clearly defined education objectives.

(2) Administration and organization((~~—~~)). The chiropractic college shall:

(a) Be incorporated as a nonprofit institution and recognized as such by its state of domicile((~~.~~));

(b) Have a full-time administrator((~~.~~));

(c) Have either a president or a dean of education with a doctor of chiropractic degree((~~.~~)); and

(d) Adopt ((~~policy of~~)) policies on nondiscrimination as to national origin, race, religion, or ((~~sex~~)) sexual orientation.

(3) The chiropractic college shall provide educational offerings ((~~—The college shall~~)) that:

(a) ((~~Provide educational offerings which prepare~~)) Prepare the student for successfully completing the licensing examination and engaging in practice((~~.~~));

(b) ((~~Offer~~)) Have an educational program with a minimum of four thousand ((~~in-class~~)) classroom hours provided over a four year academic term((~~.~~));

(c) Have available syllabi for all courses((~~.~~));

(d) Offer a chiropractic curriculum as follows:

(i) Principles of chiropractic - Two hundred ((~~in-class~~)) classroom hours;

(ii) Adjustive technique - Four hundred ((~~in-class~~)) classroom hours;

(iii) Spinal roentgenology - One hundred seventy-five ((~~in-class~~)) classroom hours;

(iv) Symptomatology and diagnosis - Four hundred twenty-five ((~~in-class~~)) classroom hours; and

(v) Clinic - Six hundred twenty-five ((~~in-class~~)) classroom hours.

(e) ((~~Offer at least one hundred twenty hours for the study of "principles of chiropractic" as the study of chiropractic philosophy, which shall be defined as the commonly held~~

~~tenets which provide the basis for chiropractic as a separate and distinct form of practice.~~

~~The required one hundred twenty hours of philosophy instruction shall be clearly identified in the application and subsequent college catalogue as philosophy of chiropractic by course title and description. The remaining eighty required hours may include history of chiropractic, ethics, interprofessional relationships and other subjects specifically relating to the principles and practice of chiropractic.~~

~~(f)~~)) The computation of hours required in subsection (3)(d) of this section do not include mechanotherapy, physiotherapy, acupuncture, acupressure, ((~~or dietary therapy~~)) or any other therapy ((~~in computation of the qualifying four thousand classroom hours.~~

~~(g)~~)); and

(f) Maintain a clinical program sufficient to fulfill the objectives of the chiropractic college.

(4) Faculty - The chiropractic college shall provide sufficient faculty to support the educational program of the chiropractic college.

(5) Students - The chiropractic college shall:

(a) Select students on a nondiscriminatory basis((~~.~~));

(b) Require that students maintain a 2.00 grade point average and have no chiropractic subject grade less than ((~~2.0.~~)) 2.00; and

(c) Require the student to complete a four-year academic program ((~~which~~)) that meets all requirements of ((~~statute and rule~~)) chapter 18.25 RCW and this chapter for licensing to practice chiropractic in Washington state.

(6) Physical facilities and equipment - The chiropractic college shall:

(a) Maintain a library of size and quality sufficient to serve the educational program((~~.~~));

(b) Maintain a ((~~basic~~)) physical plant that facilitates the educational program((~~.~~)); and

(c) Maintain clinic facilities that are of sufficient size and equipped appropriately to serve the number of students enrolled.

(7) Financial - The chiropractic college shall:

(a) Have adequate present and anticipated income to sustain a sound educational program((~~.~~));

(b) Have well formulated plans for financing existing and projected education programs((~~.~~));

(c) Have an annual audit of financial records by a ((~~CPA.~~)) certified public accountant; and

(d) Make records available for review by the commission upon request.

(8) Self-evaluation - The chiropractic college shall have a program of continuing self-evaluation and such evaluation must be made available upon request by the commission.

(9) A chiropractic college must have successfully graduated a class prior to making application for commission accreditation and approval.

NEW SECTION

WAC 246-808-050 Early remediation program—Purpose. The purpose of the early remediation program is to address minor practice deficiencies that have not resulted in patient harm. The early remediation program may include education, training, and monitoring to improve the quality of care and reduce the risk of patient harm.

WAC 246-808-060 and 246-808-070 establish the early remediation program and its eligibility criteria and procedures.

The commission intends to use the early remediation program only in cases in which there is no evidence of patient harm as a direct result of the licensee's practice-related deficiencies. The commission may resolve allegations of practice deficiencies through early remediation during an investigation.

NEW SECTION

WAC 246-808-060 Early remediation program—Definitions. The definitions in this section apply to WAC 246-808-050 through 246-808-070, unless the context clearly requires otherwise.

(1) "Complaint" means a documented report of a possible violation of the Uniform Disciplinary Act, for which the commission shall assess and may subsequently authorize an investigation.

(2) "Licensee" means a chiropractor or chiropractic X-ray technician who holds an active license under chapter 18.25 RCW.

(3) "Remediation plan" means a documented agreement between the licensee named in the complaint(s) and the commission listing remedial steps to be taken by the licensee to resolve the identified practice deficiencies. Remediation plans may include education, training, and monitoring of the licensee.

NEW SECTION

WAC 246-808-070 Early remediation program—Criteria. (1) The commission shall use the following criteria to determine eligibility for early remediation:

(a) Practice limitations are not needed to ensure patient protection;

(b) The identified practice deficiencies may be corrected by education, training, monitoring, or any combination of these;

(c) The respondent is willing and able to participate in the early remediation program; and

(d) The practice deficiency did not result in patient harm.

(2) The commission may offer a remediation plan to resolve a complaint in cases of the following practice deficiencies:

(a) Documentation of care;

(b) Radiographic standards;

(c) Billing and coding;

(d) Advertising or marketing;

(e) Continuing education; or

(f) Other minor practice concerns as determined by the commission.

(3) The commission may offer a remediation plan to resolve eligible complaints. Nothing in this section requires the commission to offer a remediation plan. A licensee who accepts a remediation plan waives any right to a hearing to modify a remediation plan or challenge the commission's

decision regarding successful completion of a remediation plan.

(4) The commission shall use the following process to implement the early remediation program:

(a) After a preliminary investigation identifies the practice deficiencies, the commission shall apply criteria in subsections (1) and (2) of this section to determine eligibility for the early remediation program;

(b) If all of the criteria are met, and if the commission determines the licensee is eligible for participation in the early remediation program, the commission shall propose a remediation plan to the licensee;

(c) The commission shall evaluate whether the practice deficiencies have been corrected and are unlikely to recur;

(d) The commission may decide to conduct a full investigation and consider disciplinary action if additional facts become known or circumstances change such that the licensee is no longer eligible based on the criteria in subsections (1) and (2) of this section; and

(e) If the licensee complies with the agreed remediation plan, the commission may consider the licensee's completion of the remediation plan as grounds to close the matter without further action.

WSR 19-13-081
PERMANENT RULES
DEPARTMENT OF HEALTH
(Chiropractic Quality Assurance Commission)

[Filed June 17, 2019, 4:18 p.m., effective July 18, 2019]

Effective Date of Rule: Thirty-one days after filing.

Purpose: WAC 246-808-320 Protected health information (formerly Privileged communications), 246-808-330 Discontinuation of care (formerly Patient abandonment), 246-808-350 Unethical requests, 246-808-360 Patient welfare, 246-808-390 Illegal practitioners and 246-808-520 Identification, the chiropractic quality assurance commission (commission) adopted revisions of these sections to update, consolidate, clarify, and modernize the language of these rules. The commission is also repealing WAC 246-808-370 Patient disclosure and 246-808-380 Degree of skill, after incorporating the rule language into the adopted amended sections.

Citation of Rules Affected by this Order: Repealing WAC 246-808-370 and 246-808-380; and amending WAC 246-808-320, 246-808-330, 246-808-350, 246-808-360, 246-808-390, and 246-808-520.

Statutory Authority for Adoption: RCW 18.25.0171 and 18.130.050.

Adopted under notice filed as WSR 18-24-122 on December 5, 2018.

A final cost-benefit analysis is available by contacting Robert Nicoloff, Executive Director, P.O. Box 47858, Olympia, WA 98504-7858, phone 360-236-4924, fax 360-236-2360, TTY 360-833-6388 or 711, email cqac@doh.wa.gov, web site www.doh.wa.gov/CQAC.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 0, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 6, Repealed 2.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 6, Repealed 2.

Date Adopted: January 10, 2019.

Aaron W. Chan, DC, Chair
Chiropractic Quality Assurance Commission

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-320 ((~~Privileged communications.~~)) Protected health information. ((~~A chiropractor shall not, without the consent of the patient, reveal any information acquired in attending such patient, which was necessary to enable the chiropractor to treat the patient. This shall not apply to the release of information in an official proceeding where the release of information may be compelled by law.~~)) A chiropractor shall comply with the provisions of the Federal Health Insurance Portability and Accountability Act, 42 U.S.C. Sec. 1302(a) and 42 U.S.C. Sec. 1302d-1320d-9, the Health Information Portability and Accountability Act (HIPAA), 45 C.F.R. Parts 160, 162, and 165.

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-330 ((~~Patient abandonment.~~)) Discontinuation of care. ((~~The chiropractor shall always be free to accept or reject a particular patient, bearing in mind that whenever possible a chiropractor shall respond to any reasonable request for his/her services in the interest of public health and welfare.~~)) If a chiropractor chooses to discontinue care, the chiropractor shall:

(1) Advise the patient in writing and document in the patient record that the chiropractor is terminating the doctor-patient relationship; and

(2) Advise the patient to seek any future treatment from another chiropractor or health care provider.

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-350 Unethical requests. A chiropractor shall not ((~~assist in any immoral practice such as aiding~~)) aid a patient in the pretense ((~~of disability in order to avoid jury or military duty,~~)) or the concealment of a physical condition or disability ((~~in order to secure favorable insurance~~)).

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-360 Patient welfare. The health and welfare of the patient shall always be paramount((~~, and expectation of remuneration or lack thereof shall not in any way affect the quality of service rendered the indigent patient~~)).

(1) A chiropractor owes their patient(s) the highest degree of skill and care.

(2) Absolute honesty shall characterize all transactions with patients.

(3) A chiropractor shall act in the best interest of the patient and not in the interest of any other party.

(4) A chiropractor shall provide evaluations, opinions, and recommendations that are unbiased.

(5) A chiropractor shall neither intentionally exaggerate nor minimize the gravity of the patient's condition, nor offer any false hope or prognosis.

(6) A chiropractor shall provide the highest quality of services regardless of expectation of reimbursement or lack thereof, including care provided to an indigent patient.

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-390 Illegal practitioners. A chiropractor((~~s~~)) shall safeguard their profession by exposing those who ((~~might attempt to~~)) practice without proper credentials((~~, and by reporting violations of the laws regulating chiropractic to the proper authorities~~)). This is in addition to mandatory reporting rules adopted by the secretary of health.

AMENDATORY SECTION (Amending WSR 96-16-074, filed 8/6/96, effective 9/6/96)

WAC 246-808-520 Identification. (1) ((~~A~~)) When using their name, a licensed chiropractor must clearly identify oneself as a chiropractor on ((~~his/her~~)) their office signs, web site, business cards, letterhead, electronic and other media with the use of one or more of the following: Doctor of chiropractic; D.C.; D.C., Ph.C.; chiropractor; or chiropractic physician consistent with RCW 18.25.090.

(2) ((~~All identification of chiropractic practice shall be presented~~)) A chiropractor shall identify and present their chiropractic practice in a dignified manner, and ((~~shall not be~~)) not in a sensational or misleading way.

(3) A chiropractor practicing in a multidisciplinary setting must identify oneself as a chiropractor.

(4) Nothing in this section prohibits the use of a business name that does not include one of the terms in subsection (1) of this section.

REPEALER

The following sections of the Washington Administrative Code are repealed:

WAC 246-808-370 Patient disclosure.

WAC 246-808-380 Degree of skill.

WSR 19-13-083
PERMANENT RULES
DEPARTMENT OF LABOR AND INDUSTRIES

[Filed June 18, 2019, 10:00 a.m., effective August 1, 2019]

Effective Date of Rule: August 1, 2019.

Purpose: This rule making is being adopted to comply with the Division of Occupational Safety and Health (DOSH) eRules initiative in addition to making necessary corrections to the rule that have been identified since the updated rule was adopted on May 3, 2016. The eRules portion of this rule making provides a format consistent with all the other DOSH rules, and allows ease of access using the DOSH web site. Washington is a state plan state under the Occupational Safety and Health Administration (OSHA). As a state plan state, Washington assumes responsibility for occupational safety and health in the state under the Washington Industrial Safety and Health Act (WISHA). To maintain its status, Washington's safety and health standards must be at-least-as-effective-as those standards adopted or recognized by OSHA. Additional amendments include: Correct an error relating to hard hats; include a reference in the scope of this rule to chapter 296-32 WAC; include language in the scope of this chapter identifying a WAC that applies to line clearance tree trimmers to align with and be at-least-as-effective-as OSHA; include language relating to doing work with voltages over 72.5 kilovolts to align with and be at-least-as-effective-as OSHA. Below are the adopted amendments:

DOSH eRules amendments throughout the chapter:

- Changed "shall" to "must" or "will."
- Changed "may not" to "cannot" or "must not."
- Removed "shall" from the definitions.
- Changed "he/she" and "his/her" to "they" or "their."
- Reformatted definitions to eRule format.

Additional corrections include:

WAC 296-45-015 Scope and application.

- In subsection (1)(e)(ii), added WAC 296-45-067 Information transfer, to the list [of] WAC that apply to line-clearance tree-trimming operations to align with and be at-least-as-effective[-as] OSHA.
- In subsection (4), added a reference to chapter 296-32 WAC, Safety standards for telecommunications.

WAC 296-45-045 NESC applicable.

- Updated the National Electrical Safety Code (NESC) to the 2017 edition.

WAC 296-45-075 Employer's safety program.

- In subsection (7), added the words "and communicated to employees" to this sentence. It now reads, "Existing conditions related to the safety of the work to be performed must be determined and communicated to employees before work on or near electric lines or equipment is started." This change was for clarity.

WAC 296-45-105 Work required of leadworkers.

- In subsection (1), removed the words "look out for" in this sentence. It now reads, "A leadworker cannot properly supervise the work and the safety of employees under their direction if required to work as a leadworker

and a qualified electrical employee at the same time." This change was for clarity.

WAC 296-45-17505 Lockout/tagout (hazardous control) program.

- In subsection (1), replaced the word "inoperative" with "inoperable." OSHA changed "inoperative" wherever it appeared in their existing standard to "inoperable" as it is a more precise term.

WAC 296-45-25505 Personal protective equipment.

- In subsection (2), removed the words "Type II" from this sentence. This change was to correct an error made in the 2016 rule making.

WAC 296-45-325 Working on or near exposed energized parts.

- In subsection (4)(c), added a reference to Appendix A for additional information relating to working on exposed energized parts. This change was for clarity.
- In subsection (4)(d), added language relating to doing work with voltages over 72.5 kilovolts to align with and be at-least-as-effective-as OSHA. Also, added a new Table 4, Assumed Maximum Per-Unit Transient Overvoltage, this table is identical to OSHA's Table R-9.
- Modified Table 2, AC Live Work Minimum Approach Distance, to match OSHA's tables of minimum approach distances.
- Reformatted the notes in Table 2, AC Live Work Minimum Approach Distance.
- In subsection (5)(a), added the words "and communicated to employees" to this sentence. It now reads, "Before any work is performed, the location of energized lines and their condition, the location and condition of energized equipment, the condition of the poles, the location of circuits and equipment including power communication lines, CATV and fire alarm circuits, must be determined and communicated to employees as will any other particular hazard of a particular worksite."
- In subsection (12)(b), replaced the word "workers" with the word "employees" for consistency.

WAC 296-45-355 Underground grounding.

- In subsection (3), replaced the word "worker" with the word "employee" for consistency.

WAC 296-45-375 Mechanical equipment, including aerial manlift equipment.

- In subsection (18), replaced the word "inoperative" with "inoperable." OSHA changed "inoperative" wherever it appeared in their existing standard to "inoperable" as it is a more precise term.

WAC 296-45-385 Overhead lines.

- In subsection (2)(d), replaced the word "inoperative" with "inoperable." OSHA changed "inoperative" wherever it appeared in their existing standard to "inoperable" as it is a more precise term.

WAC 296-45-465 Communication facilities.

- Added a note/reference to this section relating to additional information about radio frequency radiation exposure can be found in WAC 296-32-22572 and 296-32-22574.

WAC 296-45-475 Substations.

- Updated NESC to the 2017 edition.
- Reformatted the notes by removing numbers and adding bullets.
- In subsection (2), replaced the word "inoperative" with "inoperable." OSHA changed "inoperative" wherever it appeared in their existing standard to "inoperable" as it is a more precise term.

WAC 296-45-48515 Access and working space and 296-45-48525 Guarding of energized parts.

- Updated NESC to the 2017 edition.
- Reformatted the notes by removing numbers and adding bullets.

WAC 296-45-52540 Lasers.

- Added a note/reference to this section relating to additional information about lasers can be found in WAC 296-32-22576.

WAC 296-45-902 Appendix A—Working on exposed energized parts—Nonmandatory.

- Fixed a grammatical error in the first note of this appendix.
- Removed an OSHA reference to live-line barehand work since that type of work is prohibited in Washington state.
- Deleted Tables 6 through 13, they became obsolete on April 1, 2015.
- Added a note letting employers know that Tables 6 through 13 have been deleted, they became obsolete on April 1, 2015.
- Corrected Tables 14 through 21 relating to "phase-to-ground" vs. "phase-to-phase" terminology.

WAC 296-45-906 Appendix D—Protection from flames and electric arcs—Nonmandatory and 296-45-910 Appendix H—Reference documents.

- Updated NESC to the 2017 edition.

Citation of Rules Affected by this Order: Amending WAC 296-45-015, 296-45-035, 296-45-045, 296-45-055, 296-45-065, 296-45-067, 296-45-075, 296-45-085, 296-45-095, 296-45-105, 296-45-115, 296-45-125, 296-45-135, 296-45-17505, 296-45-17510, 296-45-17515, 296-45-17525, 296-45-17530, 296-45-17535, 296-45-17540, 296-45-17545, 296-45-17550, 296-45-17555, 296-45-17560, 296-45-17565, 296-45-195, 296-45-205, 296-45-215, 296-45-225, 296-45-255, 296-45-25505, 296-45-25510, 296-45-275, 296-45-285, 296-45-295, 296-45-305, 296-45-315, 296-45-325, 296-45-335, 296-45-345, 296-45-355, 296-45-365, 296-45-375, 296-45-385, 296-45-455, 296-45-45505, 296-45-45510, 296-45-45515, 296-45-45520, 296-45-45525, 296-45-45530, 296-45-465, 296-45-475, 296-45-48505, 296-45-48510, 296-45-48515, 296-45-48520, 296-45-48525, 296-45-48530, 296-45-48535, 296-45-48540, 296-45-48545, 296-45-48550, 296-45-48555, 296-45-48560, 296-45-52505, 296-45-52510, 296-45-52515, 296-45-52520, 296-45-52525, 296-45-52540, 296-45-52545, 296-45-52550, 296-45-545, 296-45-675, 296-45-67503, 296-45-67506, 296-45-67513, 296-45-67515, 296-45-67517, 296-45-67519, 296-45-67521, 296-45-67522,

296-45-67523, 296-45-67525, 296-45-67527, 296-45-67529, 296-45-67531, 296-45-67533, 296-45-67536, 296-45-67537, 296-45-67541, 296-45-67545, 296-45-902, 296-45-903, 296-45-905, 296-45-906, and 296-45-910.

Statutory Authority for Adoption: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060.

Other Authority: Chapter 49.17 RCW.

Adopted under notice filed as WSR 19-06-067 on March 5, 2019.

A final cost-benefit analysis is available by contacting Cynthia Ireland, P.O. Box 44620, Olympia, WA 98504-4620, phone 360-902-5522, fax 360-902-5619, email cynthia.ireland@Lni.wa.gov, web site https://www.Lni.wa.gov.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 98, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 98, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 98, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 0, Repealed 0.

Date Adopted: June 18, 2019.

Joel Sacks
Director

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-015 Scope and application. (1) This chapter covers the operation, maintenance, and construction of electric power generation, control, transformation, transmission, and distribution lines and equipment. These provisions apply to:

(a) Power generation, transmission, and distribution installations, including related equipment for the purpose of communication or metering, which are accessible only to qualified electrical employees;

Note: The types of installations covered by this chapter include the generation, transmission, and distribution installations of electric utilities, as well as equivalent installations of industrial establishments. Trolley maintenance, jumpering, and bypass is also covered by this chapter. Supplementary electric generating equipment that is used to supply a workplace for emergency, standby, or similar purposes only is covered under Part L of chapter 296-24 WAC and WAC 296-800-280.

(b) Other installations at an electric power generating station, as follows:

(i) Fuel and ash handling and processing installations, such as coal conveyors;

(ii) Water and steam installations, such as penstocks, pipelines, and tanks, providing a source of energy for electric generators; and

(iii) Chlorine and hydrogen systems.

(c) Test sites where electrical testing involving temporary measurements associated with electric power generation, transmission, and distribution is performed in laboratories, in the field, in substations, and on lines, as opposed to metering, relaying, and routine line work;

(d) Work on or directly associated with the installations covered in subsection((~~s~~)) (1)(a) through (c) of this section; and

(e) Line-clearance tree-trimming operations, as follows:

(i) This chapter except WAC 296-45-455, applies to line-clearance tree-trimming operations performed by qualified electrical employees (those who are knowledgeable in the construction and operation of electric power generation, transmission, or distribution equipment involved, along with the associated hazards).

(ii) WAC 296-45-065, 296-45-067, 296-45-125, 296-45-135, 296-45-255, 296-45-315, 296-45-375, and 296-45-455 through 296-45-45530 apply to line-clearance tree-trimming operations performed by line-clearance tree trimmers who are not qualified electrical employees.

(2) Notwithstanding subsection (1) of this section, this chapter does not apply to electrical installations, electrical safety-related work practices, or electrical maintenance considerations covered by Part L of chapter 296-24 WAC and WAC 296-800-280.

Note 1: Work practices conforming to WAC 296-24-970 through 296-24-985 are considered as complying with the electrical safety-related work practice requirements of this chapter, provided the work is being performed on a generation or distribution installation meeting WAC 296-24-95601 through 296-24-95699. This chapter also applies to work by qualified electrical employees directly on or associated with installations of electric power generation, transmission, and distribution lines or equipment, regardless of compliance with WAC 296-24-970 through 296-24-985.

Note 2: Work practices performed by qualified electrical employees and conforming to this chapter are considered as complying with WAC 296-24-95601 through 296-24-95699.

(3) This section applies in addition to all other applicable safety and health standards administered by the department. Specific references in this section to other standards are provided for emphasis only.

(4) Operation, conditions, work methods and other work related situations or activities not specifically covered by this chapter are subject to the rules and regulations of chapter 296-24 WAC General safety and health standards; chapter 296-27 WAC Recordkeeping and reporting; chapter 296-32 WAC Safety standards for telecommunications; chapter 296-62 WAC General occupational health standards; chapter 296-155 WAC Safety standards for construction work; chapter 296-800 WAC Safety and health core rules; and, insofar as applicable to employee safety and health, chapter 19.29 RCW. Additionally, operations, conditions, work methods and other work related situations or activities may be subject to additional rules and regulations depending upon the nature of the work being performed.

(5) These rules ((~~shall~~)) do not apply to the use of existing electrical installations during their lifetime, provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at

the time they were installed, and provided that reconstruction ((~~shall~~)) conforms to the rules as herein provided.

(6) Any rule, regulation or standard contained within this chapter, if subject to interpretation, ((~~shall~~)) must be interpreted ((~~so as~~)) to achieve employee safety, which is the ultimate purpose of this chapter.

(7) Should a rule or standard contained within this chapter conflict, in any manner, with a standard or rule contained within any other chapter of Title 296 WAC the standard or rule contained herein ((~~shall apply~~)) applies so long as the work being done is power generation, transmission, and distribution installations, including related equipment for the purpose of communication or metering, which are accessible only to qualified electrical employees. If there are rules within this chapter that conflict, the rule that provides the greatest employee safety will apply.

(8) Neither the promulgation of these rules, nor anything contained in these rules ((~~shall~~)) will be construed as affecting the relative status or civil rights or liabilities between employers and their employees and/or the employees of others and/or the public generally; nor ((~~shall~~)) will the use herein of the words "duty" and "responsibility" or either, import or imply liability other than provided for in the industrial insurance and safety laws of the state of Washington, to any person for injuries due to negligence predicated upon failure to perform or discharge any such "duty" or "responsibility," but failure on the part of the employees, leadworker, or employer to comply with any compulsory rule may be cause for the department of labor and industries to take action in accordance with the industrial insurance and safety laws.

(9) ((~~"Shall" and~~)) "Must" as used in this chapter make the provisions mandatory. ((")Should,((" "))may,((")) or ((")))it is recommended((")), are used to indicate the provisions are not mandatory but are recommended.

(10) If any section, subsection, phrase, or provisions of this chapter or part thereof should be held invalid by any court for any reason, such invalidity ((~~shall~~)) will not in any way affect the validity of the remainder of this chapter, unless such decision renders the remainder of the provision unintelligible, or changes the meaning of such other provision or provisions.

(11) When the language used in this chapter indicates that it is the responsibility, duty, or obligation of the leadworker or other employee, it ((~~shall~~)) must also be the employer's responsibility, obligation, and duty.

(12) Whenever this chapter refers to the provisions of another safety and health standard or statute affecting safety and health, such reference refers to the statute or code in effect at the time the work is being performed.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-035 Definitions. These definitions apply to chapter 296-45 WAC.

((")Aerial manlift equipment((")). Equipment such as extended towers, boom-mounted cages or baskets, and truck-mounted ladders, that is primarily designed to place personnel and equipment aloft to work on elevated structures and equipment.

((")Affected employee((")). An employee whose job requires him or her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him or her to work in an area in which such servicing or maintenance is being performed.

((")Apprentice((")). An employee who is being trained to be journey level.

((")Approved((")). Meets or exceeds the recognized standards of safety within the industry.

((")Approved protectors((")). Gloves worn over rubber insulating gloves which are of such material or substance and so constructed as to protect the rubber gloves from abrasions, lacerations, or other physical damage which might otherwise occur to rubber gloves. Approved protectors must conform to the standards which are recognized by the industry.

((")Attendant((")). An employee assigned to remain immediately outside the entrance to an enclosed or other space to render assistance as needed to employees inside the space.

((")Authorized employee((")). An employee who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

((")Automatic reclosing device((")). A self-controlled device for interrupting and reclosing an alternating current circuit with a predetermined sequence of opening and reclosing followed by resetting, hold-closed, or lockout operation.

((")Barricade((")). A physical obstruction such as tapes, cones, or A-frame type wood or metal structures intended to provide a warning about and to limit access to a hazardous area.

((")Barrier((")). A physical obstruction which is intended to prevent contact with energized lines or equipment or to prevent unauthorized access to a work area.

((")Bond((")). The electrical interconnection of conductive parts designed to maintain a common electrical potential.

((")Bus((")). A conductor or a group of conductors that serve as a common connection for two or more circuits.

((")Bushing((")). An insulating structure, including a through conductor or providing a passageway for such a conductor, with provision for mounting on a barrier, conducting or otherwise, for the purposes of insulating the conductor from the barrier and conducting current from one side of the barrier to the other.

((")Cable((")). A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).

((")Cable sheath((")). A conductive protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

((")Circuit((")). A conductor or system of conductors through which an electric current is intended to flow.

((")))Clearance((")) (between objects)((—)). The clear distance between two objects measured surface to surface.

((")))Clearance((")) (for work)((—)). Authorization to perform specified work or permission to enter a restricted area.

((")))Communication lines.(("))) (See "Lines, communication.").

((")))Conductor((")—)). A material, usually in the form of a wire, cable, or bus bar, used for carrying an electric current.

((")))Contract employer((")—)). An employer, other than a host employer, that performs work covered by this chapter under contract.

((")))Covered conductor((")—)). A conductor covered with a dielectric having no rated insulating strength or having a rated insulating strength less than the voltage of the circuit in which the conductor is used.

((")))Current-carrying part((")—)). A conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent-carrying parts are those not intended to be so connected.

((")))Deenergized((")—)). Free from any electrical connection to a source of potential difference and from electric charge; not having a potential difference from that of the earth.

Note: The term is used only with reference to current-carrying parts, which are sometimes energized (alive).

((")))Designated employee((")—)). A person who is designated by the employer to perform specific duties under the terms of this chapter and who is knowledgeable in the construction and operation of the equipment and the hazards involved.

Note: Considering an employee to be a designated employee will depend on various circumstances in the workplace, on the level of training they have received, and the proficiency demonstrated by the employee with the tasks required of the job.

((")))Electric line truck((")—)). Any vehicle used to transport employees, tools, and material, which serves as a traveling workshop for electric power line construction and maintenance work. It may be equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material and/or workers.

((")))Electric supply equipment((")—)). Equipment that produces, modifies, regulates, controls, or safeguards a supply of electric energy.

((")))Electric supply lines.(("))) (See "Lines, electric supply.").

((")))Emergency((")—)). An unforeseen occurrence endangering life, limb, or property.

((")))Enclosed((")—)). Surrounded by a case, cage, fence or otherwise which will protect the contained equipment and prevent accidental contact of a person with live parts.

((")))Enclosed space((")—)). A working space, such as a manhole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic employee entry under normal operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions.

Note: Spaces that are enclosed but not designed for employee entry under normal operating conditions are not considered to be enclosed spaces for the purposes of this section. Similarly, spaces that are enclosed and that are expected to contain a hazardous atmosphere are not considered to be enclosed spaces for the purposes of this section. Such spaces meet the definition of permit spaces in chapter 296-809 WAC, Confined spaces, and entry into them must be performed in accordance with that standard.

((")))Energized((")) (alive, live)((—)). Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.

((")))Energy isolating device((")—)). A physical device that prevents the transmission or release of energy, including, but not limited to, the following: A manually operated electric circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, a line valve, blocks, and any similar device with a visible indication of the position of the device. (Push buttons, selector switches, and other control-circuit-type devices are not energy isolating devices.)

((")))Energy source((")—)). Any electrical, mechanical, hydraulic, pneumatic, chemical, nuclear, thermal, or other energy source that could cause injury to personnel.

((")))Entry(("))) (as used in WAC 296-45-205 of this chapter)((—)). The action by which a person passes through an opening into an enclosed space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

((")))Equipment((")) (electric)((—)). A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like used as part of or in connection with an electrical installation.

((")))Exposed((")—)). Not isolated or guarded.

((")))Fall restraint system((")—)). A fall protection system that prevents the user from falling any distance.

((")))Fault current((")—)). The current that flows in an electrical system because of a defect in the circuit induced accidentally or otherwise.

((")))First-aid training((")—)). Training in the initial care, including cardiopulmonary resuscitation (which includes chest compressions, rescue breathing, and, as appropriate, other heart and lung resuscitation techniques), performed by a person who is not a medical practitioner, of a sick or injured person until definitive medical treatment can be administered.

((")))Fixed ladder((")—)). A ladder that is permanently secured to a structure.

((")))Ground((")—)). A conducting connection, whether intentional or accidental, between an electric circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

((")))Grounded((")—)). Connected to earth or to some conducting body that serves in place of the earth.

((")))Grounded system((")—)). A system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded either solidly or through a current-limiting device (not a current-interrupting device).

((")))**Groundperson((")).** A member of crew working on ground under direction of a leadworker.

((")))**Guarded((")).** Covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats, or platforms, designed to prevent the possibility, under normal conditions, of dangerous approach or accidental contact by persons or objects.

Note: Wires which are insulated, but not otherwise protected, are not considered as guarded.

((")))**Hazardous atmosphere((")).** An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from an enclosed space), injury, or acute illness from one or more of the following causes:

((•)) (a) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable 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 (1.52 m) or less;

((•)) (c) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

((•)) (d) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in chapter 296-62 WAC, Part L, or in chapter 296-62 WAC, toxic and hazardous substances, and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

((•)) (e) Any other atmospheric condition that is "immediately dangerous to life or health" (IDLH).

((")))**High-power tests((")).** Tests in which fault currents, load currents, magnetizing currents, and line-dropping currents are used to test equipment, either at the equipment's rated voltage or at lower voltages.

((")))**High-voltage tests((")).** Tests in which voltages of approximately 1000 volts are used as a practical minimum and in which the voltage source has sufficient energy to cause injury.

((")))**High wind((")).** A wind of such velocity that the following hazards would be present:

((•)) (a) An employee would be exposed to being blown from elevated locations; or

((•)) (b) An employee or material handling equipment could lose control of material being handled; or

((•)) (c) An employee would be exposed to other hazards not controlled by the standard involved.

Note: Winds exceeding 40 miles per hour (64.4 kilometers per hour), or 30 miles per hour (48.3 kilometers per hour) if material handling is involved, are normally considered as meeting this criteria unless precautions are taken to protect employees from the hazardous effects of the wind.

((")))**Host employer((")).** An employer that operates, or that controls the operating procedures for, an electric power generation, transmission, or distribution installation on which a contract employer is performing work covered by this chapter.

Note: The division of occupational safety and health (DOSH) will treat the electric utility or the owner of the installation as the host employer if it operates or controls operating procedures for the installation. If the electric utility or installation owner neither operates nor controls operating procedures for the installation, DOSH will treat the employer that the utility or owner has contracted with to operate or control the operating procedures for the installation as the host employer. In no case will there be more than one host employer.

((")))**IDLH((")).** 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.

Note: Some materials (hydrogen fluoride gas and cadmium vapor, for example) may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse twelve to seventy-two hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Note: For air contaminants for which WISHA has not determined a dose or permissible exposure limit, other sources of information, such as safety data sheets that comply with the hazard communication program, WAC 296-901-140, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

((")))**Insulated((")).** Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current.

Note: When any object is said to be insulated, it is understood to be insulated for the conditions to which it is normally subjected. Otherwise, it is, within the purpose of this section, uninsulated.

((")))**Insulation((")) (cable)**((—)). That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

((")))**Insulation shielding((")).** An envelope which encloses the insulation of a cable and provides an equipotential surface in contact with cable insulation.

((")))**Isolated((")).** An object that is not readily accessible to persons unless special means of access are used.

((")))**Leadworker((")).** The person directly in charge of workers doing the work, regardless of title.

((")))**Line-clearance tree trimmer((")).** An employee who, through related training or on-the-job experience or both, is familiar with the special techniques and hazards involved in line-clearance tree trimming.

Note 1: An employee who is regularly assigned to a line-clearance tree-trimming crew and who is undergoing on-the-job training and who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a line-clearance tree trimmer is considered to be a line-clearance tree trimmer.

Note 2: A line-clearance tree trimmer is not considered to be a "qualified electrical employee" under this section unless they have the training required for a qualified electrical employee under WAC 296-45-065. However, under the electrical safety-related

work practices standard, a line-clearance tree trimmer is considered to be a "qualified employee." Tree trimming performed by such "qualified employees" is not subject to the electrical safety-related work practice requirements contained in WAC 296-24-970. (See also the note following WAC 296-24-970 for information regarding the training an employee must have to be considered a qualified employee.)

((")))Line-clearance tree trimming((")). The pruning, trimming, repairing, maintaining, removing, or clearing of trees or the cutting of brush that is within the following distance of electric supply lines and equipment:

((•)) (a) For voltages to ground of 50 kilovolts or less - 3.05 meters (10 feet);

((•)) (b) For voltages to ground of more than 50 kilovolts - 3.05 meters (10 feet) plus 0.10 meters (4 inches) for every 10 kilovolts over 50 kilovolts.

((")))Lines((")).

((•)) (a) **"Communication lines."**((—)) The conductors and their supporting or containing structures which are used for public or private signal or communication service, and which operate at potentials not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. If the lines are operating at less than 150 volts, no limit is placed on the transmitted power of the system. Under certain conditions, communication cables may include communication circuits exceeding these limitations where such circuits are also used to supply power solely to communication equipment.

Note: Telephone, telegraph, railroad signal, data, clock, fire, police alarm, cable television, and other systems conforming with this definition are included. Lines used for signaling purposes, but not included under this definition, are considered as electric supply lines of the same voltage.

((•)) (b) **"Electric supply lines."**((—)) Conductors used to transmit electric energy and their necessary supporting or containing structures. Signal lines of more than 400 volts are always supply lines within this section, and those of less than 400 volts are considered as supply lines, if so run and operated throughout.

((")))Live-line tools and ropes((")). Tools and ropes specifically designed for work on energized high voltage lines and equipment.

((")))Load-break elbow((")). A connector designed to close and interrupt current on energized circuits within the design current and voltage rating.

((")))Manhole((")). A subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining submersible equipment or cable.

((")))Manhole steps((")). A series of steps individually attached to or set into the walls of a manhole structure.

((")))May(("))) and **((")))should((")))** or **((")))it is recommended((")).** These terms are used to indicate the provisions are not mandatory but are recommended.

((")))Minimum approach distance((")). The closest distance an employee is permitted to approach an energized or a grounded object.

((")))Must((~~" and "shall"~~)). As used in this chapter make the provisions mandatory.

((")))Network system((")). An electrical installation fed from multiple primary sources directly associated with area-wide secondary network connected into a common grid.

((")))Neutral((")). A system in which one conductor is used as the neutral for one or more circuits; one conductor may be used as the neutral for both primary and secondary circuits of a distribution system.

((")))Personal fall arrest system((")). A system used to arrest an employee in a fall from a working level.

((")))Pole((")). Any device used to support a power distribution or transmission line. The pole may be made of any substance including wood, concrete, metal, is usually cylindrical in shape and comparatively slender. It is the upright standard to which is affixed part of the power distribution and transmission line system as defined in this chapter.

((")))Power dispatcher((")) (load dispatcher or system operator)((—)). A person who has been designated by the employer as having authority over switching and clearances of high voltage lines and station equipment.

((")))Protective devices((")). Devices such as rubber gloves, rubber blankets, line hose, rubber boots, or other insulating devices, which are specifically designed for the protection of employees.

((")))Qualified electrical employee((")). A person who is familiar and knowledgeable in the construction and operation of the electric power generation, transmission, and distribution equipment involved, and such lines and/or equipment that concerns his/her position and who is fully aware of the hazards connected therewith, or, one who has passed a journey status examination for the particular branch of the electrical trades with which he/she may be connected.

Notes:
- An employee must have the training required by WAC 296-45-065 in order to be considered a qualified electrical employee.
- An employee who is undergoing on-the-job training (an apprentice) who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training and who is under the direct supervision of a qualified electrical employee is considered to be a qualified electrical employee for the performance of those duties.
- An employee having experience and training comparable to journey level would be considered a qualified electrical employee.

((")))Roadway or public highway((")). Every way, land, road, street, boulevard, and every other way or place in the state open as a matter of right to public vehicular travel, both inside and outside the limits of cities and towns, regardless of ownership.

((")))Rubber((")). Any goods, equipment, or tool made out of either natural or synthetic rubber.

((")))Secured ladder((")). A ladder which is not capable of being dislodged from the top by lateral, or jerking motion(s).

((~~**"Shall"** and **"must"** as used in this chapter make the provisions mandatory.~~

")))Sheath((")). As applied to tools carried in a lineman's tool belt, a sheath that effectively covers the tool and prevents such tool from falling from the belt.

((")))Should(("))) and **((")))may((")))** or **((")))it is recommended((")))).** These terms are used to indicate the provisions are not mandatory but are recommended.

((")))Statistical sparkover voltage((")—)). A transient overvoltage level that produces a 97.72 percent probability of sparkover (that is, two standard deviations above the voltage at which there is a 50 percent probability of sparkover).

((")))Statistical withstand voltage((")—)). A transient overvoltage level that produces a 0.14 percent probability of sparkover (that is, three standard deviations below the voltage at which there is a 50 percent probability of sparkover).

((")))Step bolt((")—)). A bolt or rung attached at intervals along a structural member and used for foot placement during climbing or standing.

((")))Supporting structure((")—)). The main supporting unit (usually a pole or tower).

((")))Switch((")—)). A device for opening and closing or for changing the connection of a circuit. In these rules, a switch is understood to be manually operable, unless otherwise stated.

((")))System operator or power dispatcher((")—)). A qualified electrical employee who has been designated by the employer and having authority over switching, clearances, and operation of the system and its parts.

((")))Tag((")—)). A system or method of identifying circuits, systems, or equipment for the purpose of alerting employees and others that the circuit, system, or equipment is being worked on.

((")))Underground residential distribution system((")) (URD)((—)). An electrical installation normally fed from a single primary source which may feed one or more transformers with secondaries not connected to a common grid.

((")))Utility((")—)). An organization responsible for the installation, operation, or maintenance of electric supply or communications systems.

((")))Vault((")—)). An enclosure, above or below ground, which personnel may enter and which is used for the purpose of installing, operating, or maintaining equipment or cable.

((")))Vented vault((")—)). A vault that has provision for air changes using exhaust flue stacks and low level air intakes operating on differentials of pressure and temperature providing for airflow which precludes a hazardous atmosphere from developing.

((")))Voltage((")—)). The effective (rms) potential difference between any two conductors or between a conductor and ground. Voltages are expressed in nominal values unless otherwise indicated. The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The operating voltage of the system may vary above or below this value.

Note: Low voltage includes voltages from 50 to 600 volts. High voltage shall mean those voltages of 601 volts to 230,000. Extra high voltage means any voltage over 230,000 volts. Where the words "high voltage" are used in this chapter it shall include extra high voltage, unless otherwise specified.

((")))Work-positioning equipment((")—)). A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a utility pole or tower leg, and work with both hands free while leaning.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-045 NESC applicable. (1) All electric utilities and entities operating transmission and distribution facilities within the state of Washington must design, construct, operate, and maintain their lines and equipment according to the requirements of the ((~~2012~~)) 2017 National Electrical Safety Code (NESC) (ANSI-C2), parts (1), (2), and (3).

Note: The department has copies of the NESC available for review at each service location across the state. To purchase a copy, write to:
The Institute of Electrical and Electronics Engineers, Inc. (IEEE, Inc.)
445 Hoes Lane
Piscataway, NJ 08855-1331

(2) The employer must ensure that climbing space is provided on all poles and structures. The climbing space must meet the requirements of the ((~~2012~~)) 2017 National Electrical Safety Code (NESC) (ANSI-C2), except that Rule 236H does not apply.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-055 Employer's responsibility. (1) The employer ((~~shall~~)) must provide and maintain the necessary protective devices specified in these rules and require the employees to use them properly.

(2) The employer ((~~shall~~)) must develop and maintain a hazard communication program as required by chapter 296-901 WAC, which will provide information to all employees relative to hazardous chemicals or substances to which they are exposed, or may become exposed, in the course of their employment.

(3) There ((~~shall~~)) must be installed and maintained in every fixed establishment employing eight or more persons a safety bulletin board of a size to display and post safety bulletins, newsletters, posters, accident statistics and other safety educational material. It is recommended that safety bulletin boards be painted green and white.

(4) The employer ((~~shall~~)) must require the leadworker to observe and enforce all safety rules and ((~~shall~~)) furnish a copy of the electrical workers' safety rules to each employee who is covered by these rules.

(5) The employer ((~~shall~~)) must appoint only competent workers to supervise other employees and those appointed ((~~shall~~)) will be responsible for the safety of the employees under their supervision.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-065 Training. (1) Each employee ((~~shall~~)) must be trained and proficient in the safety-related work practices, safety procedures, and other safety requirements in this section that pertain to their respective job

assignments. Employees ((~~shall~~)) must also be trained in and proficient with any other safety practices, including applicable emergency procedures (such as pole top, aerial, manhole, and tree rescue), that are not specifically addressed by this section but that are related to their work and are necessary for their safety.

(2) The degree of training ((~~shall~~)) must be determined by the risk of the employee for the hazard involved.

(3) Qualified electrical employees ((~~shall~~)) must also be trained and competent in:

(a) The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment;

(b) The skills and techniques necessary to determine the nominal voltage of exposed live parts;

(c) The minimum approach distances specified in this chapter corresponding to the voltages to which the qualified electrical employee will be exposed and the skills and techniques necessary to maintain those distances;

(d) The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment; and

(e) The recognition of electrical hazards to which the employee may be exposed and the skills and techniques necessary to control or avoid these hazards.

Note: For the purposes of this section, a person must have this training in order to be considered a qualified electrical employee.

(4) The employer ((~~shall~~)) must determine, through regular supervision and through inspections conducted on at least an annual basis, that each employee is complying with the safety-related work practices required by this chapter.

(5) An employee ((~~shall~~)) must receive additional training (or retraining) under any of the following conditions:

(a) If the supervision and annual inspections required by subsection (4) of this section indicate that the employee is not complying with the safety-related work practices required by this chapter; or

(b) If new technology, new types of equipment, or changes in procedures necessitate the use of safety-related work practices that are different from those which the employee would normally use; or

(c) If the employee must employ safety related work practices that are not normally used during their regular job duties.

Note: DOSH would consider tasks that are performed less often than once per year to necessitate retraining before the performance of the work practices involved.

(6) The training required by this section ((~~shall~~)) must be of the classroom or on-the-job type.

(7) The training ((~~shall~~)) must establish employee proficiency in the work practices required by this section and ((~~shall~~)) must introduce the procedures necessary for compliance with this section.

(8) The employer ((~~shall~~)) must certify that each employee has received the training required by this section. This certification ((~~shall~~)) must be made when the employee demonstrates proficiency in the work practices involved and ((~~shall~~)) must be maintained for the duration of the employee's employment.

Notes:
- Employment records that indicate that an employee has received the required training are an acceptable means of meeting this requirement.
- For an employee with previous training, an employer may determine that the employee has demonstrated the proficiency required by this subsection using the following process:
  - Confirm that the employee has the training required by this section;
  - Use an examination or interview to make an initial determination that the employee understands the relevant safety related work practices before he or she performs any work covered by this chapter; and
- Supervise the employee closely until that employee has demonstrated proficiency as required by this section.

(9) Each line-clearance tree trimmer who is not a qualified electrical employee ((~~shall~~)) must also be trained and competent in:

(a) The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment;

(b) The skills and techniques necessary to determine the nominal voltage of exposed live parts; and

(c) The minimum approach distances specified in this chapter corresponding to the voltages to which the employee will be exposed and the skills and techniques necessary to maintain those distances.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-067 Information transfer. (1) Host employer responsibilities. Before work begins, the host employer ((~~shall~~)) must inform contract employers of:

(a) The characteristics of the host employer's installation that are related to the safety of the work to be performed and are listed in subsection (4)(a) through (e) of this section;

Note: This subsection requires the host employer to obtain information listed in subsection (4)(a) through (e) of this section if it does not have this information in existing records.

(b) Conditions that are related to the safety of the work to be performed, that are listed in subsection (4)(f) through (h) of this section, and that are known to the host employer;

Note: For the purposes of this subsection, the host employer need only provide information to contract employers that the host employer can obtain from its existing records through the exercise of reasonable diligence. This subsection does not require the host employer to make inspections of worksite conditions to obtain this information.

(c) Information about the design and operation of the host employer's installation that the contract employer needs to make the assessments required by this chapter; and

Note: This subsection requires the host employer to obtain information about the design and operation of its installation that contract employers need to make required assessments if it does not have this information in existing records.

(d) Any other information about the design and operation of the host employer's installation that is known by the host employer, that the contract employer requests, and that is related to the protection of the contract employer's employees.

Note: For the purposes of this subsection, the host employer need only provide information to contract employers that the host employer can obtain from its existing records through the exercise of reasonable diligence. This subsection does not require the host employer to make inspections of worksite conditions to obtain this information.

(2) Contract employer responsibilities.

(a) The contract employer ((~~shall~~)) must ensure that each of its employees is instructed in the hazardous conditions relevant to the employee's work that the contract employer is aware of as a result of information communicated to the contract employer by the host employer under subsection (1) of this section.

(b) Before work begins, the contract employer ((~~shall~~)) must advise the host employer of any unique hazardous conditions presented by the contract employer's work.

(c) The contract employer ((~~shall~~)) must advise the host employer of any unanticipated hazardous conditions found during the contract employer's work that the host employer did not mention under subsection (1) of this section. The contract employer ((~~shall~~)) must provide this information to the host employer within two working days after discovering the hazardous condition.

(3) Joint host- and contract-employer responsibilities. The contract employer and the host employer ((~~shall~~)) must coordinate their work rules and procedures so that each employee of the contract employer and the host employer is protected as required by this section.

(4) Existing characteristics and conditions. Existing characteristics and conditions of electric lines and equipment that are related to the safety of the work to be performed ((~~shall~~)) must be determined before work on or near the lines or equipment is started. Such characteristics and conditions include, but are not limited to:

(a) The nominal voltages of lines and equipment;

(b) The maximum switching-transient voltages;

(c) The presence of hazardous induced voltages;

(d) The presence of protective grounds and equipment grounding conductors;

(e) The locations of circuits and equipment, including electric supply lines, communication lines, and fire protective signaling circuits;

(f) The condition of protective grounds and equipment grounding conductors;

(g) The condition of poles; and

(h) Environmental conditions relating to safety.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-075 Employer's safety program. (1) The employer ((~~shall~~)) must hold safety meetings at least once a month, which meetings ((~~shall~~)) will be held at a reasonable time and place as selected by the employer. The employer ((~~shall~~)) must require all employees subject to provisions of this chapter to attend said meetings: Provided, That employees whose presence is otherwise required by reason of an emergency or whose function is such that they cannot leave their station or cease their work without serious detriment to the service provided, such as dispatcher, may be excused from such meeting under those circumstances. Minutes ((~~shall~~)) must be kept of each safety meeting and retained for a period of one year.

(2) The employer or a representative(s) designated ((~~shall~~)) must investigate all accidents or injuries of a serious nature and, where possible, take the proper remedial steps to prevent the occurrence of similar accidents.

(3) The employer ((~~shall~~)) must furnish instructions stating the proper procedure in event of an emergency, which ((~~shall~~)) must include the names of those individuals to be notified and methods of contacting them.

(4) The employer ((~~shall~~)) must provide and make available to all employees accident reports and safety suggestion forms or other approved methods. Safety suggestion forms should, where possible, be used for suggesting the elimination of hazardous conditions and such reported suggestions ((~~shall~~)) must be retained (for one year) by the employer or an authorized representative.

(5) For work-related injuries and illnesses involving any employee that resulted in death, inpatient hospitalization, amputation or loss of an eye, the employer must comply with the recordkeeping and reporting regulations located in chapter 296-27 WAC.

(6) Nothing contained within this chapter ((~~shall~~)) will prohibit an employer or an authorized representative from disciplining employees for failure to comply with the provisions of this or any other safety code.

(7) Existing conditions related to the safety of the work to be performed ((~~shall~~)) must be determined and communicated to employees before work on or near electric lines or equipment is started. Such conditions include, but are not limited to, the nominal voltages of lines and equipment, the maximum switching transient voltages, the presence of hazardous induced voltages, the presence and condition of protective grounds and equipment grounding conductors, the condition of poles, environmental conditions relative to safety, and the locations of circuits and equipment, including power and communication lines and fire protective signaling circuits.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-085 Leadworker's responsibility. (1) Every leadworker ((~~shall~~)) must understand these and any other applicable safety rules and comply therewith. Leadworkers ((~~shall~~)) must require all employees under their direction or supervision to read this chapter and the provisions contained therein and require every employee subject to this chapter to be able to apply this chapter and any provision of this chapter on a day-to-day basis.

(2) Leadworkers ((~~shall~~)) must inform employees under their supervision or direction of the type and voltage of circuits on or near which the employees are to work.

(3) Leadworkers ((~~shall~~)) must require all employees under their supervision to properly use safety devices and equipment, including barricades, warning flags or signs, or any other device called for to protect employees.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-095 Leadworker-employee responsibility. (1) An employee ((~~shall~~)) must protect ((~~his/her~~)) their climbing and working space at all times if the conductors are so spaced that in climbing or working ((~~he/she~~)) they will be, or where it is possible to come within, the minimum required distances specified in these rules.

(2) Leadworkers or supervisors ((~~shall~~)) must in good faith consider verbal or written reports of hazardous conditions and shall, as soon as practicable, investigate and remedy same if warranted.

(3) When hazards are reported by employees, leadworkers and others having authority ((~~shall~~)) must accept the report in a cooperative manner, and in no case ((~~shall~~)) will an employee be reprimanded or penalized for reporting hazards or potential hazards.

(4) Leadworkers ((~~shall~~)) must require all employees under their supervision to keep their belts, spurs, and straps in good working condition. When straps and belts are in poor condition or defective, they ((~~shall~~)) must not be used.

(5) Before leaving a job site, leadworkers ((~~shall~~)) must correct or arrange to give warning of any condition which might result in injury to employees.

(6) No employee ((~~shall~~)) will be permitted or allowed to remain on the job site when under the influence of any intoxicating beverage or controlled substance or substances: Provided, That if an employee is taking prescription medication under the direction of a practicing physician and such prescription does not interfere with the safe performance of the work assigned, such employee may be permitted to work.

(7) No intoxicating beverages or controlled substances ((~~shall~~)) will be consumed on the job site other than prescription medication as set forth above.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-105 Work required of leadworkers. (1) A leadworker cannot properly supervise the work and ((~~look out for~~)) the safety of employees under their direction if required to work as a leadworker and a qualified electrical employee at the same time.

(2) Leadworkers should be constantly alert and ((~~shall~~)) must not be required to serve in such dual capacity, except in crews of not more than two qualified electrical employees, in which case they may work as one of the qualified electrical employees.

(3) In crews of two qualified electrical employees or less, each qualified electrical employee may have a groundworker but, if additional qualified electrical employees or groundworkers are added to the crew, the leadworker ((~~shall~~)) must confine ((~~his/her~~)) their activities to supervising the work, as exhibited below:

Type of Crew	Minimum Requirements
2 qualified electrical employees	One qualified electrical employee as person-in-charge.
2 qualified electrical employees plus 1 groundworker	One qualified electrical employee as person-in-charge or climbing leadworker.
2 qualified electrical employees plus 2 groundworkers	One qualified electrical employee as person-in-charge or climbing leadworker.
2 qualified electrical employees plus any combination of 3 qualified electrical employees or groundworkers	One nonclimbing leadworker.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-115 Employee's responsibility. (1) Employees ((~~shall~~)) must not engage in horseplay or scuffling while on the job or job site and the employer ((~~shall~~)) must not permit horseplay or scuffling while on the job site or otherwise in the course of employment.

(2) During such time as any employee is working on or near any energized line or energized equipment in excess of 600 volts there ((~~shall~~)) must be no talking or communication other than that which is absolutely necessary and essential for the safe and proper performance of the work. Should there be communication or talk from a person other than an employee, the work ((~~shall~~)) must stop until such time as the distraction ceases.

(3) Employees ((~~shall~~)) must report any hazardous or potentially hazardous condition, operation, means, or work in a constructive manner and ((~~shall~~)) must not engage in personality conflicts.

(4) Neither the employer nor the employees ((~~shall~~)) will throw or permit anything to be thrown from elevated position(s) or poles to the ground or lower level, nor ((~~shall~~)) must anything be thrown from the ground or lower level to an elevated position, whether that elevated position is on a pole, aerial manlift or otherwise. Tools and loose materials ((~~shall~~)) must not be left on poles, crossarms, ladders or other elevated structures or positions.

(5) Employees ((~~shall~~)) must report all injuries, regardless of severity, to the employer or designated representative. Report forms furnished by the employer should be used.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-125 Medical services and first aid. The employer ((~~shall~~)) must provide medical services and first aid as required in WAC 296-800-150. The following requirements also apply:

(1) Cardiopulmonary resuscitation and first-aid training. When employees are performing work on or associated with exposed lines or equipment energized at 50 volts or more,

persons trained in first aid including cardiopulmonary resuscitation (CPR) ((~~shall~~)) must be available as follows:

(a) For field work involving two or more employees at a work location, at least two trained persons ((~~shall~~)) must be available. However, for line-clearance tree trimming operations performed by line-clearance tree trimmers who are not qualified electrical employees, only one trained person need be available if all new employees are trained in first aid, including CPR, within 3 months of their hiring dates.

(b) For fixed work locations such as generating stations, the number of trained persons available ((~~shall~~)) must be sufficient to ensure that each employee exposed to electric shock can be reached within 4 minutes by a trained person. However, where the existing number of employees is insufficient to meet this requirement (at a remote substation, for example), all employees at the work location ((~~shall~~)) will be trained.

(2) First-aid supplies. First-aid supplies required by WAC 296-800-150 ((~~shall~~)) must be placed in weatherproof containers if the supplies could be exposed to the weather.

(3) First-aid kits. The employer ((~~shall~~)) must maintain each first-aid kit, ((~~shall~~)) ensure that it is readily available for use, and ((~~shall~~)) must inspect it frequently enough to ensure that expended items are replaced. The employer also ((~~shall~~)) must inspect each first-aid kit at least once per year.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-135 Job briefing. (1) The employer ((~~shall~~)) must ensure that the leadworker conducts a job briefing with the employees involved before they start each job.

(2) The employer ((~~shall~~)) must provide the employee in charge of the job with all available information that relates to the determination of existing characteristics and conditions required by WAC 296-45-067(4) of this chapter.

(3) The briefing ((~~shall~~)) must also cover at the least the following subjects:

(a) Hazards associated with the job;

(b) Work procedures involved;

(c) Special precautions;

(d) Energy source controls; and

(e) Personal protective equipment requirements.

(4) Number of briefings. If the work or operations to be performed during the work day or shift are repetitive and similar, at least one job briefing ((~~shall~~)) must be conducted before the start of the first job of each day or shift. Additional job briefings ((~~shall~~)) must be held if significant changes, which might affect the safety of the employees, occur during the course of the work.

(5) Extent of briefing. A brief discussion is satisfactory if the work involved is routine and if the employee, by virtue of training and experience, can reasonably be expected to recognize and avoid the hazards involved in the job. A more extensive discussion ((~~shall~~)) must be conducted:

(a) If the work is complicated or particularly hazardous; or

(b) If the employee cannot be expected to recognize and avoid the hazards involved in the job.

Note: The briefing is always required to touch on all the subjects listed in the introductory text to this section.

(6) Working alone. An employee working alone need not conduct a job briefing. However, the employer ((~~shall~~)) must ensure that the tasks to be performed are planned as if a briefing were required.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17505 Lockout/tagout (hazardous control) program. (1) The employer ((~~shall~~)) must establish a program consisting of energy control procedures, employee training, and periodic inspections to ensure that, before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the machine or equipment is isolated from the energy source and rendered ((~~inoperative~~)) inoperable.

(2) The employer's energy control program under this section ((~~shall~~)) must meet the following requirements:

(a) If an energy isolating device is not capable of being locked out, the employer's program ((~~shall~~)) must use a tagout system.

(b) If an energy isolating device is capable of being locked out, the employer's program ((~~shall~~)) must use lockout, unless the employer can demonstrate that the use of a tagout system will provide full employee protection as follows:

(i) When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device ((~~shall~~)) must be attached at the same location that the lockout device would have been attached, and the employer ((~~shall~~)) must demonstrate that the tagout program will provide a level of safety equivalent to that obtained by the use of a lockout program.

(ii) In demonstrating that a level of safety is achieved in the tagout program equivalent to the level of safety obtained by the use of a lockout program, the employer ((~~shall~~)) must demonstrate full compliance with all tagout-related provisions of this standard together with such additional elements as are necessary to provide the equivalent safety available from the use of a lockout device. Additional means to be considered as part of the demonstration of full employee protection ((~~shall~~)) must include the implementation of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energizing.

(3) Whenever replacement or major repair, renovation, or modification of a machine or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment ((~~shall~~)) must be designed to accept a lockout device.

(4) Procedures ((~~shall~~)) must be developed, documented, and used for the control of potentially hazardous energy covered by this section.

(5) The procedure ((~~shall~~)) must clearly and specifically outline the scope, purpose, responsibility, authorization, rules, and techniques to be applied to the control of hazardous

energy, and the measures to enforce compliance including, but not limited to, the following:

(a) A specific statement of the intended use of this procedure;

(b) Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;

(c) Specific procedural steps for the placement, removal, and transfer of lockout devices or tagout devices and the responsibility for them; and

(d) Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices, tagout devices, and other energy control measures.

(6) The employer ((~~shall~~)) must conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the provisions of this section are being followed.

(a) The periodic inspection ((~~shall~~)) must be performed by an authorized/designated employee who is not using the energy control procedure being inspected.

(b) The periodic inspection ((~~shall~~)) must be designed to identify and correct any deviations or inadequacies.

(c) If lockout is used for energy control, the periodic inspection ((~~shall~~)) must include a review, between the inspector and each authorized/designated employee, of that employee's responsibilities under the energy control procedure being inspected.

(d) Where tagout is used for energy control, the periodic inspection ((~~shall~~)) must include a review, between the inspector and each authorized/designated and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in this section.

(e) The employer ((~~shall~~)) must certify that the inspections required by this section have been accomplished. The certification ((~~shall~~)) must identify the machine or equipment on which the energy control procedure was being used, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

Note: If normal work schedule and operation records demonstrate adequate inspection activity and contain the required information, no additional certification is required.

(7) The employer ((~~shall~~)) must provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of energy controls are acquired by employees. The training ((~~shall~~)) must include the following:

(a) Each authorized/designated employee ((~~shall~~)) will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of energy available in the workplace, and in the methods and means necessary for energy isolation and control.

(b) Each affected employee ((~~shall~~)) must be instructed in the purpose and use of the energy control procedure.

(c) All other employees whose work operations are or may be in an area where energy control procedures may be used ((~~shall~~)) must be instructed about the procedures and about the prohibition relating to attempts to restart or reenergize machines or equipment that are locked out or tagged out.

(8) When tagout systems are used, employees ((~~shall~~)) must also be trained in the following limitations of tags:

(a) Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock.

(b) When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized/designated person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

(c) Tags must be legible and understandable by all authorized/designated employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.

(d) Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

(e) Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

(f) Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17510 Retraining. (1) Retraining ((~~shall~~)) must be provided for all authorized/designated and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard or whenever there is a change in the energy control procedures.

(2) Retraining ((~~shall~~)) must also be conducted whenever a periodic inspection reveals, or whenever the employer has reason to believe, that there are deviations from or inadequacies in an employee's knowledge or use of the energy control procedures.

(3) The retraining ((~~shall~~)) must reestablish employee proficiency and ((~~shall~~)) must introduce new or revised control methods and procedures, as necessary.

(4) The employer ((~~shall~~)) must certify that employee training has been accomplished and is being kept up to date. The certification ((~~shall~~)) must contain each employee's name and dates of training.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17515 Protective materials and hardware. (1) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware ((~~shall~~)) must be provided by the employer for isolating, securing, or blocking of machines or equipment from energy sources.

(2) Lockout devices and tagout devices ((~~shall~~)) must be singularly identified; ((~~shall~~)) must be the only devices used for controlling energy; may not be used for other purposes; and ((~~shall~~)) must meet the following requirements:

(a) Lockout devices and tagout devices ((~~shall~~)) must be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

(b) Tagout devices ((~~shall~~)) must be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

(c) Tagout devices ((~~shall~~)) must be so constructed as not to deteriorate when used in corrosive environments.

(3) Lockout devices and tagout devices ((~~shall~~)) must be standardized within the facility in at least one of the following criteria: Color, shape, size. Additionally, in the case of tagout devices, print and format ((~~shall~~)) must be standardized.

(4) Lockout devices ((~~shall~~)) must be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or metal cutting tools.

(5) Tagout devices, including their means of attachment, ((~~shall~~)) must be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means ((~~shall~~)) must be of a nonreusable type, attachable by hand, self-locking, and nonreleasable with a minimum unlocking strength of no less than fifty pounds and ((~~shall~~)) must have the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

(6) Each lockout device or tagout device ((~~shall~~)) must include provisions for the identification of the employee applying the device.

(7) Tagout devices ((~~shall~~)) will warn against hazardous conditions if the machine or equipment is energized and ((~~shall~~)) must include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.

Note: See ANSI Z535.5, 2011 for the format and design criteria of danger/warning tags.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17525 Notification. Affected employees ((~~shall~~)) must be notified by the employer or authorized/designated employee of the application and removal of lockout or tagout devices. Notification ((~~shall~~)) will be given before the controls are applied and after they are removed from the machine or equipment.

Note: This section requires that the second notification take place before the machine or equipment is reenergized.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17530 Lockout/tagout application. The established procedures for the application of energy control (the lockout or tagout procedures) ((~~shall~~)) must include the following elements and actions, and these procedures ((~~shall~~)) must be performed in the following sequence:

(1) Before an authorized/designated or affected employee turns off a machine or equipment, the authorized/designated employee ((~~shall~~)) must have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

(2) The machine or equipment ((~~shall~~)) must be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown ((~~shall~~)) must be used to avoid any additional or increased hazards to employees as a result of the equipment stoppage.

(3) All energy isolating devices that are needed to control the energy to the machine or equipment ((~~shall~~)) must be physically located and operated in such a manner as to isolate the machine or equipment from energy sources.

(4) Lockout or tagout devices ((~~shall~~)) must be affixed to each energy isolating device by authorized/designated employees.

(a) Lockout devices ((~~shall~~)) must be attached in a manner that will hold the energy isolating devices in a "safe" or "off" position.

(b) Tagout devices ((~~shall~~)) must be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.

(5) Where tagout devices are used with energy isolating devices designed with the capability of being locked out, the tag attachment ((~~shall~~)) must be fastened at the same point at which the lock would have been attached.

(6) Where a tag cannot be affixed directly to the energy isolating device, the tag ((~~shall~~)) must be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17535 Releasing stored energy. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy ((~~shall~~)) must be relieved, disconnected, restrained, or otherwise rendered safe.

(1) If there is a possibility of reaccumulation of stored energy to a hazardous level, verification of isolation ((~~shall~~)) must be continued until the servicing or maintenance is completed or until the possibility of such accumulation no longer exists.

(2) Before starting work on machines or equipment that have been locked out or tagged out, the authorized/designated employee ((~~shall~~)) must verify that isolation and deenergizing of the machine or equipment have been accomplished. If normally energized parts will be exposed to contact by an employee while the machine or equipment is deenergized, a test ((~~shall~~)) must be performed to ensure that these parts are deenergized.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17540 Release from lockout/tagout. Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures ((~~shall~~)) must be followed and actions taken by the authorized/designated employees to ensure the following:

(1) The work area ((~~shall~~)) must be inspected to ensure that nonessential items have been removed and that machine or equipment components are operationally intact.

(2) The work area ((~~shall~~)) must be checked to ensure that all employees have been safely positioned or removed.

(3) After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees ((~~shall~~)) must be notified that the lockout or tagout devices have been removed.

(4) Each lockout or tagout device ((~~shall~~)) must be removed from each energy isolating device by the authorized/designated employee who applied the lockout or tagout device. However, if that employee is not available to remove it, the device may be removed under the direction of the employer, provided that specific procedures and training for such removal have been developed, documented, and incorporated into the employer's energy control program. The employer ((~~shall~~)) must demonstrate that the specific procedure provides a degree of safety equivalent to that provided by the removal of the device by the authorized/designated employee who applied it. The specific procedure ((~~shall~~)) must include at least the following elements:

(a) Verification by the employer that the authorized/designated employee who applied the device is not at the facility;

(b) Making all reasonable efforts to contact the authorized/designated employee to inform him or her that his or her lockout or tagout device has been removed; and

(c) Ensuring that the authorized/designated employee has this knowledge before he or she resumes work at that facility.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-17545 Temporary removal of lockout/tagout. If the lockout or tagout devices must be temporarily removed from energy isolating devices and the machine or equipment must be energized to test or position the machine, equipment, or component thereof, the following sequence of actions ((~~shall~~)) must be followed:

(1) Clear the machine or equipment of tools and materials in accordance with this section;

(2) Remove employees from the machine or equipment area in accordance with this section;

(3) Remove the lockout or tagout devices as specified in this section;

(4) Energize and proceed with the testing or positioning; and

(5) Deenergize all systems and reapply energy control measures in accordance with this section to continue the servicing or maintenance.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17550 Group lockout/tagout. When servicing or maintenance is performed by a crew, craft, department, or other group, they ((~~shall~~)) must use a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. Group lockout or tagout devices ((~~shall~~)) must be used in accordance with the procedures required by the following specific requirements:

(1) Primary responsibility ((~~shall~~)) must be vested in an authorized/designated employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

(2) Provision ((~~shall~~)) must be made for the authorized/designated employee to ascertain the exposure status of all individual group members with regard to the lockout or tagout of the machine or equipment;

(3) When more than one crew, craft, department, or other group is involved, assignment of overall job-associated lockout or tagout control responsibility ((~~shall~~)) must be given to an authorized/designated employee designated to coordinate affected work forces and ensure continuity of protection; and

(4) Each authorized/designated employee ((~~shall~~)) must affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when ((~~he or she~~)) they begin((~~s~~)) work and ((~~shall~~)) must remove those devices when ((~~he or she~~)) they stop((~~s~~)) working on the machine or equipment being serviced or maintained.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-17555 Shift changes. Procedures ((~~shall~~)) must be used during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and on-coming employees, to minimize their exposure to hazards from the unexpected energizing or start up of the machine or equipment or from the release of stored energy.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-17560 Outside servicing personnel. Whenever outside servicing personnel are to be engaged in activities covered by this section, the on-site employer and the outside employer ((~~shall~~)) must inform each other of their respective lockout or tagout procedures, and each employer ((~~shall~~)) must ensure that ((~~his or her~~)) their personnel understand and comply with restrictions and prohibitions of the energy control procedures being used.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-17565 Central system operator. If energy isolating devices are installed in a central location under the exclusive control of a system operator, the following requirements apply:

(1) The employer ((~~shall~~)) must use a procedure that affords employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.

(2) The system operator ((~~shall~~)) must place and remove lockout and tagout devices in place of the authorized/designated employee.

(3) Provisions ((~~shall~~)) must be made to identify the authorized/designated employee who is responsible for (that is, being protected by) the lockout or tagout device, to transfer responsibility for lockout and tagout devices, and to ensure that an authorized/designated employee requesting removal or transfer of a lockout or tagout device is the one responsible for it before the device is removed or transferred.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-195 Trenching and excavation. (1) During excavation or trenching, in order to prevent exposure of employees to the hazards created by damage to dangerous underground facilities, efforts ((~~shall~~)) must be made to determine the location of such facilities and work conducted in a manner designed to avoid damage.

(2) Trenching and excavation operations ((~~shall~~)) must comply with the provisions of Part N, chapter 296-155 WAC.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-205 Enclosed spaces. This section covers enclosed spaces that may be entered by employees. It does not apply to vented vaults if the employer makes a determination that the ventilation system is operating to protect employees before they enter the space. This section applies to routine entry into enclosed spaces in lieu of the permit-space entry requirements contained in chapter 296-809 WAC. If, after the employer takes the precautions given in WAC 296-45-205, 296-45-215, and 296-45-225, the hazards remaining in the enclosed space endanger the life of an entrant or could interfere with an entrant's escape from the space, then entry into the enclosed space ((~~shall~~)) must meet the permit-space entry requirements of chapter 296-809 WAC.

Note: Entries into enclosed spaces conducted in accordance with the permit-space entry requirements of chapter 296-809 WAC are considered as complying with this section.

(1) ((")Safe work practices.((")) The employer ((~~shall~~)) must ensure the use of safe work practices for entry into, and work in, enclosed spaces and for rescue of employees from such spaces.

(2) ((")Training.((")) Each employee who enters an enclosed space or who serves as an attendant ((~~shall~~)) must be trained in the hazards of enclosed space entry, in enclosed space entry procedures, and in enclosed space rescue procedures.

(3) ((")Rescue equipment.((")) Employers ((~~shall~~)) must provide equipment to ensure the prompt and safe rescue of employees from the enclosed space.

(4) ((")Evaluating of potential hazards.((")) Before any entrance cover to an enclosed space is removed, the employer ((~~shall~~)) must determine whether it is safe to do so by checking for the presence of any atmospheric pressure or temperature differences and by evaluating whether there might be a hazardous atmosphere in the space. Any conditions making it unsafe to remove the cover ((~~shall~~)) must be eliminated before the cover is removed.

Note: The determination called for in this subsection may consist of a check of the conditions that might foreseeably be in the enclosed space. For example, the cover could be checked to see if it is hot and, if it is fastened in place, could be loosened gradually to release any residual pressure. An evaluation also needs to be made of whether conditions at the site could cause a hazardous atmosphere, such as an oxygen deficient or flammable atmosphere, to develop within the space.

(5) ((")Removing covers.((")) When covers are removed from enclosed spaces, the opening ((~~shall~~)) must be promptly guarded by a railing, temporary cover, or other barrier designed to prevent an accidental fall through the opening and to protect employees working in the space from objects entering the space.

(6) ((")Hazardous atmosphere.((")) Employees ((~~may not~~)) cannot enter any enclosed space while it contains a hazardous atmosphere, unless the entry conforms to the permit-required confined spaces standard in chapter 296-809 WAC.

Note: The term "entry" is defined in chapter 296-809 WAC.

(7) ((")Attendants.((")) While work is being performed in the enclosed space, an attendant with first-aid training ((~~shall~~)) must be immediately available outside the enclosed space to provide assistance if a hazard exists because of traffic patterns in the area of the opening used for entry. The attendant is not precluded from performing other duties outside the enclosed space if these duties do not distract the attendant from monitoring employees within the space or ensuring that it is safe for employees to enter and exit the space.

Note: See WAC 296-45-215(12) for additional requirements on attendants for work in manholes.

(8) ((")Calibration of test instruments.((")) Test instruments used to monitor atmospheres in enclosed spaces ((~~shall~~)) must be kept in calibration and ((~~shall~~)) must have a minimum accuracy of + or - 10 percent.

(9) ((")Testing for oxygen deficiency.((")) Before an employee enters an enclosed space, the atmosphere in the enclosed space ((~~shall~~)) must be tested for oxygen deficiency with a direct-reading meter or similar instrument, capable of collection and immediate analysis of data samples without the need for off-site evaluation. If continuous forced air ventilation is provided, testing is not required provided that the procedures used ensure that employees are not exposed to the hazards posed by oxygen deficiency.

(10) ((")Testing for flammable gases and vapors.((")) Before an employee enters an enclosed space, the internal atmosphere ((~~shall~~)) must be tested for flammable gases and vapors with a direct-reading meter or similar instrument capable of collection and immediate analysis of data samples without the need for off-site evaluation. This test ((~~shall~~)) must be performed after the oxygen testing and ventilation required by subsection (9) of this section demonstrate that there is sufficient oxygen to ensure the accuracy of the test for flammability.

(11) ((")Ventilation and monitoring for flammable gases or vapors.((")) If flammable gases or vapors are detected or if an oxygen deficiency is found, forced air ventilation ((~~shall~~)) must be used to maintain oxygen at a safe level and to prevent a hazardous concentration of flammable

gases and vapors from accumulating. A continuous monitoring program to ensure that no increase in flammable gas or vapor concentration above safe levels occurs may be followed in lieu of ventilation if flammable gases or vapors are initially detected at safe levels.

Note: See the definition of hazardous atmosphere for guidance in determining whether a specific concentration of a substance is hazardous.

(12) ((")) Specific ventilation requirements.((")) If continuous forced air ventilation is used, it ((~~shall~~)) must begin before entry is made and ((~~shall~~)) must be maintained long enough for the employer to be able to demonstrate that a safe atmosphere exists before employees are allowed to enter the work area. The forced air ventilation ((~~shall~~)) must be so directed as to ventilate the immediate area where employees are present within the enclosed space and ((~~shall~~)) must continue until all employees leave the enclosed space.

(13) ((")) Air supply.((")) The air supply for the continuous forced air ventilation ((~~shall~~)) must be from a clean source and ((~~may~~)) must not increase the hazards in the enclosed space.

(14) ((")) Open flames.((")) If open flames are used in enclosed spaces, a test for flammable gases and vapors ((~~shall~~)) must be made immediately before the open flame device is used and at least once per hour while the device is used in the space. Testing ((~~shall~~)) must be conducted more frequently if conditions present in the enclosed space indicate that once per hour is insufficient to detect hazardous accumulations of flammable gases or vapors.

Note: See the definition of hazardous atmosphere for guidance in determining whether a specific concentration of a substance is hazardous.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-215 Underground electrical installations. This section provides additional requirements for work on underground electrical installations.

(1) Protective barriers, or approved guards and warning signs must be erected before removing manhole covers or making excavations in places accessible to vehicular or pedestrian traffic.

(2) Whenever an opening is made in the street, it ((~~shall~~)) must be properly guarded or covered until same is closed and whenever an obstruction is left in the roadway after dark, it ((~~shall~~)) must be marked with approved lights, flares or similar devices.

(3) Access. A ladder or other climbing device ((~~shall~~)) must be used to enter and exit a manhole or subsurface vault exceeding 4 feet (122 cm) in depth. No employee may climb into or out of a manhole or vault by stepping on cables or hangers.

(4) When work is to be performed in a manhole or unvented vault:

(a) No entry ((~~shall~~)) will be permitted unless the atmosphere is found to be safe by testing for the presence of explosive or potentially hazardous gases or fumes.

(b) No entry ((~~shall~~)) will be permitted unless the atmosphere has been found safe by testing for oxygen deficiency or forced ventilation is provided.

(c) When unsafe conditions are detected, by testing or other means, the work area ((~~shall~~)) must be ventilated and otherwise made safe before entry.

(d) Provisions ((~~shall~~)) must be made for a continuous supply of air as provided for in Part L, chapter 296-62 WAC.

(e) When forced ventilation is not used a method of monitoring said manhole or vault so as to prevent the occurrence of oxygen deficiency due to work being performed in said manhole or vault, and to detect the presence of any explosive gases or fumes which may occur while the employees are working in said manhole or vault.

(5) When open flames are used or smoking is permitted in manholes, adequate mechanical forced air ventilation ((~~shall~~)) must be used.

(6) Before using open flames in a manhole or excavation in an area where combustible gases or liquids may be present, such as near a gasoline service station, the atmosphere of the manhole or excavation ((~~shall~~)) must be tested and found safe or cleared of the combustible gases or liquids prior to the entry.

(7) When work is to be performed in manholes containing any wires or appliances carrying electrical current, they ((~~shall~~)) must be in a sanitary condition.

(8) Care ((~~shall~~)) must be taken to prevent the possibility of vehicles or pedestrians coming in contact with the wires and equipment.

(9) Lowering equipment into manholes. Equipment used to lower materials and tools into manholes or vaults ((~~shall~~)) must be capable of supporting the weight to be lowered and ((~~shall~~)) must be checked for defects before use. Before tools or materials are lowered into the opening for a manhole or vault, each employee working in the manhole or vault ((~~shall~~)) must be clear of the area directly under the opening.

(10) Materials ((~~shall~~)) must not be thrown into or out of manholes but ((~~shall~~)) must be placed in the proper receptacle and hoisted in and out by means of a rope.

(11) Tools and materials ((~~shall~~)) must not be left on the ground around or near the manhole opening where they might be pushed or otherwise fall into the hole.

(12) Attendants for manholes.

(a) An attendant ((~~shall~~)) must be kept at the surface when there is any hazard to the employees in the manhole and the attendant should not leave the manhole unwatched until such time as all employees are out and the cover has been replaced.

(b) While work is being performed in a manhole containing energized electric equipment, an employee with first aid and CPR training meeting WAC 296-45-125(1) ((~~shall~~)) must be available on the surface in the immediate vicinity to render emergency assistance.

Notes: • An attendant may also be required under WAC 296-45-205(7). One person may serve to fulfill both requirements. However, attendants required under WAC 296-45-205(7) are not permitted to enter the manhole.

• Employees entering manholes containing unguarded, uninsulated energized lines or parts of electric equipment operating at 50 volts or more are required to be qualified electrical employees under WAC 296-45-065.

(c) No work ((~~shall~~)) must be permitted to be done in any manhole or subway on any energized wire, cable or appliance carrying more than 300 volts of electricity by less than two qualified electrical employees who ((~~shall~~)) must at all times, while performing such work, be in the same manhole or subway in which work is being done. This rule ((~~shall~~)) does not apply to work on telephone, telegraph or signal wires or cables.

(d) For the purpose of inspection, housekeeping, taking readings, or similar work, an employee working alone may enter, for brief periods of time, a manhole where energized cables or equipment are in service, if the employer can demonstrate that the employee will be protected from all electrical hazards.

(e) Reliable communications, through two-way radios or other equivalent means, ((~~shall~~)) must be maintained among all employees involved in the job.

(13) Cable in manholes or underground vaults ((~~shall~~)) must be accessible to employees and a clear working space ((~~shall~~)) must be maintained at all times; and/or approved protective guards, barriers, etc., when installed ((~~shall~~)) will be considered as providing adequate working clearance for cables over 5 k.v. If a manhole and/or underground vault is determined to have an electrical or structural hazard, no work ((~~shall~~)) will be done in the manhole and/or vault until the unsafe condition is corrected or deenergized.

(14) No work ((~~shall~~)) must be performed on cables or equipment unless they have been properly identified by an approved method.

(15) Duct rods. If duct rods are used, they ((~~shall~~)) must be installed in the direction presenting the least hazard to employees. An employee ((~~shall~~)) will be stationed at the far end of the duct line being rodded to ensure that the required minimum approach distances are maintained.

(16) Multiple cables. When multiple cables are present in a work area, the cable to be worked ((~~shall~~)) must be identified by electrical means, unless its identity is obvious by reason of distinctive appearance or location or by other readily apparent means of identification. Cables other than the one being worked ((~~shall~~)) must be protected from damage.

(17) Before cutting into a high voltage cable or opening a high voltage splice, the cable ((~~shall~~)) must be deenergized then clearance obtained, tested and then grounded in an approved manner. The cable to be worked on ((~~shall~~)) must be identified by tags or equivalent means.

(18) Moving cables. Energized cables that are to be moved ((~~shall~~)) must be inspected for defects.

(19) Insulated platforms or other protective devices ((~~shall~~)) will be provided when work is to be done on energized wires or equipment in manholes.

(20) Furnaces ((~~shall~~)) must always be placed in a secure, level position on the downhill side of the manhole to avoid spillage of hot metals or compounds into the manhole.

(21) Pulling underground cable. When pulling cable(s) all employees ((~~shall~~)) must be made aware of the hazard of being caught in the sheaves, lashings or winch gears. All employees ((~~shall~~)) must stand clear of the pulling line when the pull is begun or when the line is under tension. This rule applies to all work performed by means of a winch.

(22) Fishing conduit or ducts. When fishing conduit or ducts, it ((~~shall~~)) must first be determined that the fish tape or wires will not contact any energized line or equipment.

(23) WAC 296-45-335 on clearances ((~~shall~~)) must be complied with. Also WAC 296-45-345 and/or WAC 296-45-355 on grounding ((~~shall~~)) must be complied with.

(24) Defective cables. Where a cable in a manhole has one or more abnormalities that could lead to or be an indication of an impending fault, the defective cable ((~~shall~~)) must be deenergized before any employee may work in the manhole, except when service load conditions and a lack of feasible alternatives require that the cable remain energized. In that case, employees may enter the manhole provided they are protected from the possible effects of a failure by shields or other devices that are capable of containing the adverse effects of a fault in the joint.

Note: Abnormalities such as oil or compound leaking from cables or joints, broken cable sheaths or joint sleeves, hot localized surface temperatures of cables or joints, or joints that are swollen beyond normal tolerance are presumed to lead to or be an indication of an impending fault.

(25) Sheath continuity. When work is performed on buried cable or on cable in manholes, metallic sheath continuity ((~~shall~~)) must be maintained by bonding across the opening (or by equivalent means), or the cable sheath ((~~shall~~)) must be treated as energized.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-225 Underground residential distribution (URD). (1) General.

(a) Each employee ((~~shall~~)) must be knowledgeable of the equipment provided for their use and ((~~shall~~)) must at all times use this equipment only for the purpose intended.

(b) U.R.D. cables which are properly insulated for the voltages to which they are energized ((~~shall~~)) must be considered as an effective barrier to protect the employees and table two need not apply.

(i) Workers will take adequate precautions to avoid physical contact with energized U.R.D. cable by using approved procedures and/or protective devices.

(ii) When handling energized U.R.D. primary cables, the work ((~~shall~~)) must be done with approved tools and/or procedures by two qualified electrical employees. Switching is exempt from this rule.

(iii) When energized terminators or load-break elbows are handled by a hot stick, there ((~~shall~~)) must be two qualified electrical employees at the scene.

(c) When energized pad-mounted transformers or similar equipment are to be left unlocked and open, they ((~~shall~~)) must be attended by a designated employee.

(d) Approved tools and procedures ((~~shall~~)) must be used to remove any debris, vines, weeds, etc., from an underground system.

(e) A primary and secondary system neutral on any energized circuit ((~~shall~~)) must not be opened under any circumstances except for testing.

(f) Primary and secondary neutrals ((~~shall~~)) must be firmly connected and grounded before the circuit or equipment is energized.

(g) Where different phases are in the same vault, enclosures, or parked in some manner that they could be looped, these phases ((~~shall~~)) must be marked or identified.

(h) Bayonet fuses:

(i) Bayonet fuses ((~~shall~~)) must not be closed into suspected faults or overloads.

(ii) Submersible U.G. transformer installations will require other methods of energizing or deenergizing and bayonet fuses ((~~shall~~)) must not be used for this purpose.

(iii) Bayonet fuses ((~~shall~~)) must only be operated after pad-mount transformers have been properly vented.

(iv) Bayonet fuses ((~~shall~~)) must only be operated in accordance with manufacturing design and rating capabilities.

(2) Working on cables.

(a) Before any work is to be performed on underground cables and apparatus carrying high voltage, they ((~~shall~~)) must be deenergized with the following exceptions:

(i) Replacing fuses, operating switches, closing or opening load-break elbows, when approved protective devices are used.

(ii) Work in the high-voltage compartment of pad-mounted transformers and similar equipment installed above ground, provided the work is done by approved methods.

(b) Only one energized conductor ((~~shall~~)) must be worked on at any one time, and protective means ((~~shall~~)) must be used to insulate or isolate it from all others.

(c) When work is to be performed in manholes containing any wires or appliances carrying electrical current, they ((~~shall~~)) must be in a sanitary condition.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-255 Protective equipment. (1) Rubber protective equipment must be in accordance with and tested as follows:

Item	Standard
Rubber Insulating Gloves	(ASTM) D 120-2002
Rubber Matting for Use Around Electrical Apparatus	(ASTM) D 178-2001
Rubber Insulating Blankets	(ASTM) D 1048-1999
Rubber Insulating Hoods	(ASTM) D 1049-2002
Rubber Insulating Line Hose	(ASTM) D 1050-1999
Rubber Insulating Sleeves	(ASTM) D 1051-2002

(2) No protective equipment or material other than rubber ((~~shall~~)) must be used: Provided, That such other nonconductive equipment may be used if it provides equal or better (dielectric) electrical and mechanical protection than rubber protective equipment: Provided, That the employer obtain before placing in service, manufacturer's data or other data to demonstrate that such nonrubber protective equipment provided equal or better electrical and mechanical protection than approved rubber equipment.

(3) Protective equipment ((~~shall~~)) must not be used at voltages in excess of that for which the manufacturer has supplied data to the employer demonstrating that it is fit for such voltages.

(4) No protective equipment ((~~shall~~)) must be modified, altered, or used for purposes other than those for which it is designed unless and until the manufacturer has, in writing, agreed or suggested that there be such modification, alteration, or use.

(5) Each rubber glove before it is used ((~~shall~~)) must be inspected for defects and an approved air test performed. If, upon inspection, rubber gloves are either defective or appear to be defective, they ((~~shall~~)) must not be used.

(6) Before being placed in service, all rubber protective equipment ((~~shall~~)) must be numbered and records kept for test purposes and assignment.

(7) Rubber protective equipment ((~~shall~~)) must not be used unless it has been dielectrically tested within six months and bears marking or identification of the date of the test or the expiration date.

(8) Protector gloves must be worn over insulating gloves.

Exception: Protector gloves need not be used with Class 0 gloves, under limited-use conditions, where small equipment and parts manipulation necessitate unusually high finger dexterity.

Note: Extra care is needed in the visual examination of the glove and in the avoidance of handling sharp objects.

(9) Rubber gloves when not in use ((~~shall~~)) must be carried in an approved bag provided and designed for that purpose. It ((~~shall~~)) must be provided by the employer and made available to the employees.

(10) Approved rubber gloves and carrying bag ((~~shall~~)) must be assigned to each employee who works with, or is exposed to energized parts.

(11) Rubber protective equipment ((~~shall~~)) must not be vulcanized or patched.

(12) A compartment or box ((~~shall~~)) must be provided on each electric line truck, which box or compartment ((~~shall~~)) must be used for storing rubber protective equipment. No equipment ((~~shall~~)) must be stored in said compartment or box which can or could cause damage to the rubber equipment or goods placed in the compartment or box. Additionally, a separate container or compartment ((~~shall~~)) must be provided for rubber blankets.

(13) Line hose ((~~shall~~)) must not be doubled on themselves at any time. All blankets before storage must be wiped clean and rolled, not folded, before being placed in the container or box.

(14) Protective line equipment of material other than rubber ((~~shall~~)) must be kept clean and visually inspected before each use.

(15) If protective line equipment of material other than rubber is found to be substantially defective or unsuitable for the purpose for which it is designed and intended, said pro-

tective line equipment ((~~shall~~)) must not be used for personal protection of employees as may be required in Table 2 of this chapter. Said protective line equipment ((~~shall~~)) must be marked defective but may be otherwise used unless the defect or damage to said protective line equipment creates additional safety hazards.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-25505 Personal protective equipment. (1) General. Personal protective equipment (PPE) ((~~shall~~)) must meet the requirements of chapter 296-24 WAC, Part L and the PPE requirements in chapter 296-800 WAC. PPE required by these chapters or a hazard assessment will be provided by the employer at no cost to the employee.

(2) All protective hats ((~~shall~~)) must be in accordance with the specifications of ANSI Z89.1-2014, American National Standard for Industrial Head Protection ((~~Type II~~)), Class E, and ((~~shall~~)) must be worn at the job site by employees who are exposed to overhead or electrical hazards.

(3) Goggles, hearing protection, respirators, rubber gloves, and other such personal protective devices ((~~shall~~)) must not be interchanged among employees unless they have been sanitized.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-25510 Fall protection. (1) Personal fall arrest systems ((~~shall~~)) must meet the requirements of chapter 296-155 WAC, Part C-1, Fall protection requirements for construction.

(2) Personal fall arrest equipment used by employees who are exposed to hazards from flames or electric arcs, as determined by the employer under WAC 296-45-325(13), ((~~shall~~)) must be capable of passing a drop test equivalent to that required by subsection (3)(l) of this section after exposure to an electric arc with a heat energy of 40±5 cal/cm^2.

(3) Body belts and positioning straps for work-positioning equipment ((~~shall~~)) must meet the following requirements:

(a) Hardware for body belts and positioning straps ((~~shall~~)) must meet the following requirements:

(i) Hardware ((~~shall~~)) must be made of drop-forged steel, pressed steel, formed steel, or equivalent material.

(ii) Hardware ((~~shall~~)) must have a corrosion-resistant finish.

(iii) Hardware surfaces ((~~shall~~)) must be smooth and free of sharp edges.

(b) Buckles ((~~shall~~)) must be capable of withstanding an 8.9 kilonewton (2,000 pound-force) tension test with a maximum permanent deformation no greater than 0.4 millimeters (0.0156 inches).

(c) D-rings ((~~shall~~)) must be capable of withstanding a 22 kilonewton (5,000 pound-force) tensile test without cracking or breaking.

(d) Snaphooks ((~~shall~~)) must be capable of withstanding a 22 kilonewton (5,000 pound-force) tension test without failure.

Note: Distortion of the snaphook sufficient to release the keeper is considered to be tensile failure of a snaphook.

(e) Top grain leather or leather substitute may be used in the manufacture of body belts and positioning straps; however, leather and leather substitutes ((~~may not~~)) cannot be used alone as a load-bearing component of the assembly.

(f) Plied fabric used in positioning straps and in load-bearing parts of body belts ((~~shall~~)) must be constructed in such a way that no raw edges are exposed and the plies do not separate.

(g) Positioning straps ((~~shall~~)) must be capable of withstanding the following tests:

(i) A dielectric test of 819.7 volts, AC, per centimeter (25,000 volts per foot) for three minutes without visible deterioration;

(ii) A leakage test of 98.4 volts, AC, per centimeter (3,000 volts per foot) with a leakage current of no more than 1 mA;

Note: Positioning straps that pass direct-current tests at equivalent voltages are considered as meeting this requirement.

(iii) Tension tests of 20 kilonewtons (4,500 pounds-force) for sections free of buckle holes and of 15 kilonewtons (3,500 pounds-force) for sections with buckle holes;

(iv) A buckle-tear test with a load of 4.4 kilonewtons (1,000 pounds-force); and

(v) A flammability test in accordance with Table 1.

Table 1 - Flammability Test

Test Method	Criteria for Passing the Test
Vertically suspend a 500 mm (19.7 inch) length of strapping supporting a 100 kg (220.5 lb) weight.	Any flames on the positioning strap ((~~shall~~)) must self-extinguish. The positioning strap ((~~shall~~)) must continue to support the 100 kg (220.5 lb) mass.
Use a butane or propane burner with a 76 mm (3 inch) flame.	
Direct the flame to an edge of the strapping at a distance of 25 mm (1 inch).	
Remove the flame after 5 seconds.	
Wait for any flames on the positioning strap to stop burning.	

(h) The cushion part of the body belt ((~~shall~~)) must contain no exposed rivets on the inside and ((~~shall~~)) must be at least 76 millimeters (3 inches) in width.

(i) Tool loops ((~~shall~~)) must be situated on the body of a body belt so that the 100 millimeters (4 inches) of the body belt that is in the center of the back, measuring from D-ring to D-ring, is free of tool loops and any other attachments.

(j) Copper, steel, or equivalent liners ((~~shall~~)) must be used around the bars of D-rings to prevent wear between these members and the leather or fabric enclosing them.

(k) Snaphooks ((~~shall~~)) must be of the locking type meeting the following requirements:

(i) The locking mechanism ((~~shall~~)) must first be released, or a destructive force ((~~shall~~)) must be placed on the keeper, before the keeper will open.

(ii) A force in the range of 6.7 N (1.5 lbf) to 17.8 N (4 lbf) ((~~shall~~)) must be required to release the locking mechanism.

(iii) With the locking mechanism released and with a force applied on the keeper against the face of the nose, the keeper ((~~may not~~)) cannot begin to open with a force of 11.2 N (2.5 lbf) or less and ((~~shall~~)) must begin to open with a maximum force of 17.8 N (4 lbf).

(l) Body belts and positioning straps ((~~shall~~)) must be capable of withstanding a drop test as follows:

(i) The test mass ((~~shall~~)) must be rigidly constructed of steel or equivalent material with a mass of 100 kg (220.5 lbm). For work-positioning equipment used by employees weighing more than 140 kg (310 lbm) fully equipped, the test mass ((~~shall~~)) must be increased proportionately (that is, the test mass must equal the mass of the equipped worker divided by 1.4).

(ii) For body belts, the body belt ((~~shall~~)) must be fitted snugly around the test mass and ((~~shall~~)) must be attached to the test-structure anchorage point by means of a wire rope.

(iii) For positioning straps, the strap ((~~shall~~)) must be adjusted to its shortest length possible to accommodate the test and connected to the test-structure anchorage point at one end and to the test mass on the other end.

(iv) The test mass ((~~shall~~)) must be dropped an unobstructed distance of 1 meter (39.4 inches) from a supporting structure that will sustain minimal deflection during the test.

(v) Body belts ((~~shall~~)) must successfully arrest the fall of the test mass and ((~~shall~~)) must be capable of supporting the mass after the test.

(vi) Positioning straps ((~~shall~~)) must successfully arrest the fall of the test mass without breaking, and the arrest force ((~~may not~~)) cannot exceed 17.8 kilonewtons (4,000 pounds-force). Additionally, snaphooks on positioning straps ((~~may not~~)) cannot distort to such an extent that the keeper would release.

Note: When used by employees weighing no more than 140 kg (310 lbm) fully equipped, body belts and positioning straps that conform to American Society of Testing and Materials *Standard Specifications for Personal Climbing Equipment*, ASTM F887-12^{e1}, are deemed to be in compliance with (l) of this subsection.

(4) The following requirements apply to the care and use of personal fall protection equipment.

(a) Work-positioning equipment ((~~shall~~)) must be inspected before use each day to determine that the equipment is in safe working condition. Work-positioning equipment that is not in safe working condition ((~~may~~)) must not be used.

Note: Work-Positioning Equipment Inspection Guidelines are located in Appendix E of this chapter.

(b) Personal fall arrest systems ((~~shall~~)) must be used in accordance with chapter 296-155 WAC, Part C-1.

Note: Fall protection equipment rigged to arrest falls is considered a fall arrest system and must meet the applicable requirements for the design and use of those systems. Fall protection equipment rigged for work positioning is considered work-positioning equipment and must meet the applicable requirements for the design and use of that equipment.

(c) The employer ((~~shall~~)) must ensure that employees use fall protection systems as follows:

(i) Each employee working from an aerial lift ((~~shall~~)) must use a fall restraint system or a personal fall arrest system.

(ii) Except as provided in (c)(iii) of this subsection, each employee in elevated locations more than 1.2 meters (4 feet) above the ground on poles, towers, or similar structures ((~~shall~~)) must use a personal fall arrest system, work-positioning equipment, or fall restraint system, as appropriate, if the employer has not provided other fall protection meeting chapter 296-155 WAC, Part C-1.

(iii) Each qualified electrical employee climbing or changing location on poles, towers, or similar structures must use fall protection equipment unless the employer can demonstrate that climbing or changing location with fall protection is infeasible or creates a greater hazard than climbing or changing location without it.

Notes:
- These subsections apply to structures that support overhead electric power transmission and distribution lines and equipment. They do not apply to portions of buildings, such as loading docks, or to electric equipment, such as transformers and capacitors. Chapter 296-155 WAC, Part C-1 contains the duty to provide fall protection associated with walking and working surfaces.
- Until the employer ensures that employees are proficient in climbing and the use of fall protection under WAC 296-45-065(8), the employees are not considered "qualified electrical employees" for the purposes of (c)(ii) and (iii) of this subsection. These subsections require unqualified employees (including trainees) to use fall protection any time they are more than 1.2 meters (4 feet) above the ground.

(d) Work-positioning systems ((~~shall~~)) must be rigged so that an employee can free fall no more than 0.6 meters (2 feet).

(e) Anchorages for work-positioning equipment ((~~shall~~)) must be capable of supporting at least twice the potential impact load of an employee's fall, or 13.3 kilonewtons (3,000 pounds-force), whichever is greater.

Note: Wood-pole fall-restriction devices meeting American Society of Testing and Materials *Standard Specifications for Personal Climbing Equipment*, ASTM F887-12^{e1}, are deemed to meet the anchorage-strength requirement when they are used in accordance with manufacturers' instructions.

(f) Unless the snaphook is a locking type and designed specifically for the following connections, snaphooks on work-positioning equipment ((~~may~~)) must not be engaged:

(i) Directly to webbing, rope, or wire rope;

(ii) To each other;

(iii) To a D-ring to which another snaphook or other connector is attached;

(iv) To a horizontal lifeline; or

(v) To any object that is incompatibly shaped or dimensioned in relation to the snaphook such that accidental disengagement could occur should the connected object sufficiently depress the snaphook keeper to allow release of the object.

(5) Employees ((~~shall~~)) must not wear climbers while doing work where they are not required. Employees ((~~shall~~)) must not continue to wear their climbers while working on the ground; except for momentary or short periods of time on the ground.

(6) Employees, when working from a hook ladder, must either belt themselves securely to the ladder, attach themselves to the structures by means of a safety line, or belt themselves to ladder safety equipment, which ((~~shall~~)) must consist of a safety rope or belting threaded through the rungs or secured to the ladder at intervals of not more than three feet.

(7) Before an employee throws their weight on a belt, the employee ((~~shall~~)) must determine that the snap or fasteners are properly engaged.

(8) Safety straps ((~~shall~~)) must not be placed around poles above the cross-arm except where it is not possible for the strap to slide or be slipped over the top of the pole by inadvertence of the employee. Neither end of the strap ((~~shall~~)) must be allowed to hang loose or dangle while the employee is ascending or descending poles or other structures.

(9) Body belts and safety straps ((~~shall~~)) must not be stored with sharp-edged tools or near sharp objects. When a body belt, safety strap and climbers are kept in the same container, they ((~~shall~~)) must be stored in such a manner as to avoid cutting or puncturing the material of the body belt or safety strap with the gaffs or climbers.

(10) Employees ((~~shall~~)) must not attach metal hooks or other metal devices to body belts. Leather straps or rawhide thongs ((~~shall~~)) must have hardwood or fibre crossbars. Leather straps and rawhide thongs ((~~shall~~)) must not have metal or other conductive crossbars on them.

(11) Climbing gaffs ((~~shall~~)) must be kept properly sharpened and ((~~shall~~)) must be at least 1-1/8 inches in length.

(12) Lifelines ((~~shall~~)) must be protected against being cut or abraded.

(13) Fall arrest equipment, work positioning equipment, or travel restricting equipment ((~~shall~~)) must be used by employees working at elevated locations more than 4 feet (1.2 m) above the ground on poles, towers, or similar structures if other fall protection has not been provided.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-275 Ladders, platforms, and manhole steps. (1) General. Requirements for ladders contained in chapter 296-876 WAC apply, except as specifically noted in subsection (2) of this section.

(2) Special ladders and platforms. Portable ladders and platforms used on structures or conductors in conjunction with overhead line work need not meet chapter 296-876 WAC. However, these ladders and platforms ((~~shall~~)) must meet the following requirements:

(a) Ladders and platforms ((~~shall~~)) must be secured to prevent their becoming accidentally dislodged.

(b) Ladders and platforms ((~~may~~)) must not be loaded in excess of the working loads for which they are designed.

(c) Ladders and platforms may be used only in applications for which they were designed.

(d) In the configurations in which they are used, ladders and platforms ((~~shall~~)) must be capable of supporting without failure at least 2.5 times the maximum intended load.

(e) All ladders ((~~shall~~)) must be handled and stored in such a manner as to prevent damage to the ladder.

(f) When ascending or descending a ladder, the employee ((~~shall~~)) must face the ladder and have free use of both hands.

(g) All defective ladders ((~~shall~~)) must be taken out of service and labeled as defective.

(h) When a ladder is being used which is not fixed or otherwise secured, there ((~~shall~~)) must be an attendant to hold the ladder and watch traffic when the work is being done on streets, alleys, sidewalks, or in industrial plants or other places where there exists the possibility of accidental contact with the ladder by third persons or vehicles.

(i) When working on the ladder, employees ((~~shall~~)) must, where possible, tie the top of the ladder to a substantial object to prevent falling unless the ladder is equipped with approved hooks which may be used for the same purpose.

(j) Portable ladders ((~~shall~~)) must not be moved with employees on the ladder.

(k) No employee ((~~shall~~)) must ascend or descend a rolling ladder while it is moving.

(l) No employee ((~~shall~~)) must stand on the top two steps of a step ladder.

(m) No employee ((~~shall~~)) must use a step ladder as a straight ladder.

(n) Ladders ((~~shall~~)) must always be placed on a secure footing with both legs resting firmly on the lower surface.

(o) Ladders made by fastening cleats or similar devices across a single rail ((~~shall~~)) must not be used.

(3) Conductive ladders. Portable metal ladders and other portable conductive ladders ((~~may~~)) must not be used near exposed energized lines or equipment. However, in specialized high-voltage work, conductive ladders ((~~shall~~)) must be used where the employer can demonstrate that nonconductive ladders would present a greater hazard than conductive ladders.

Note: A greater electrical hazard would be static electricity such as might be found in extra high voltage substations.

(4) All conductive or metal ladders ((~~shall~~)) must be prominently marked and identified as being conductive and ((~~shall~~)) must be grounded when used near energized lines or equipment.

Note: See chapter 296-876 WAC for additional ladder requirements.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-45-285 Hand, and portable powered tools. (1) General requirements.

(a) The employer ((~~shall~~)) must assure that each hand and portable powered tool, including any tool provided by an employee, is maintained in serviceable condition.

(b) The employer ((~~shall~~)) must assure that each tool, including any tool provided by an employee, is inspected before initial use during each workshift. At a minimum, the inspection ((~~shall~~)) must include the following:

(i) Handles and guards, to assure that they are sound, tight-fitting, properly shaped, free of splinters and sharp edges, and in place;

(ii) Controls, to assure proper function;

(iii) Heads of shock, impact-driven and driving tools, to assure that there is no mushrooming;

(iv) Cutting edges, to assure that they are sharp and properly shaped; and

(v) All other safety devices, to assure that they are in place and function properly.

(c) The employer ((~~shall~~)) must assure that each tool is used only for purposes for which it has been designed.

(d) When the head of any shock, impact-driven or driving tool begins to chip, it ((~~shall~~)) must be repaired or removed from service.

(e) The cutting edge of each tool ((~~shall~~)) must be sharpened in accordance with manufacturer's specifications whenever it becomes dull during the workshift.

(f) Each tool ((~~shall~~)) must be stored in the provided location when not being used at a work site.

(g) Racks, boxes, holsters or other means ((~~shall~~)) must be provided, arranged and used for the transportation of tools so that a hazard is not created for any vehicle operator or passenger.

(2) Electric equipment connected by cord and plug must meet the following requirements:

(a) Cord- and plug-connected equipment supplied by premises wiring is covered by chapter 296-24 WAC, Part L and WAC 296-800-280.

(b) Any cord- and plug-connected equipment supplied by other than premises wiring ((~~shall~~)) must comply with one of the following instead of chapter 296-24 WAC, Part L and WAC 296-800-280:

(i) It ((~~shall~~)) must be equipped with a cord containing an equipment grounding conductor connected to the tool frame and to a means for grounding the other end (however, this option may not be used where the introduction of the ground into the work environment increases the hazard to an employee); or

(ii) It ((~~shall~~)) must be of the double-insulated type conforming to chapter 296-24 WAC, Part L and WAC 296-800-280; or

(iii) It ((~~shall~~)) must be connected to the power supply through an isolating transformer with an ungrounded secondary.

(3) Portable and vehicle-mounted generators. Portable and vehicle-mounted generators used to supply cord- and plug-connected equipment ((~~shall~~)) must meet the following requirements:

(a) The generator may only supply equipment located on the generator or the vehicle and cord- and plug-connected equipment through receptacles mounted on the generator or the vehicle.

(b) The noncurrent-carrying metal parts of equipment and the equipment grounding conductor terminals of the receptacles ((~~shall~~)) must be bonded to the generator frame.

(c) In the case of vehicle-mounted generators, the frame of the generator ((~~shall~~)) must be bonded to the vehicle frame.

(d) Any neutral conductor ((~~shall~~)) must be bonded to the generator frame.

(4) Hydraulic and pneumatic tools must meet the following requirements:

(a) Safe operating pressures for hydraulic and pneumatic tools, hoses, valves, pipes, filters, and fittings ((~~may~~)) must not be exceeded.

Note: If any hazardous defects are present, no operating pressure would be safe, and the hydraulic or pneumatic equipment involved may not be used. In the absence of defects, the maximum rated operating pressure is the maximum safe pressure.

(b) A hydraulic or pneumatic tool used where it may contact exposed live parts ((~~shall (~~)) must use nonconductive hoses and((~~)~~)) be designed and maintained for such use.

(c) The hydraulic system supplying a hydraulic tool used where it may contact exposed live parts ((~~shall~~)) must provide protection against loss of insulating value for the voltage involved due to the formation of a partial vacuum in the hydraulic line.

Note: Hydraulic lines without check valves having a separation of more than 35 feet (10.7 m) between the oil reservoir and the upper end of the hydraulic system promote the formation of a partial vacuum.

(d) A pneumatic tool used on energized electric lines or equipment or used where it may contact exposed live parts ((~~shall~~)) must provide protection against the accumulation of moisture in the air supply.

(e) Pressure ((~~shall~~)) must be released before connections are broken, unless quick acting, self-closing connectors are used. Hoses ((~~may~~)) must not be kinked.

(f) Employees ((~~may not~~)) cannot use any part of their bodies to locate or attempt to stop a hydraulic leak.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-295 Gasoline engine power chain saws. (1) Each chain saw placed into initial service after February 9, 1995, ((~~shall~~)) must be equipped with a chain brake and ((~~shall~~)) must otherwise meet the requirements of the ANSI B175.1-2012 "Safety Requirements for Gasoline-Powered Chain Saws." Each chain saw placed into service before February 9, 1995, ((~~shall~~)) must be equipped with a protective device that minimizes chain saw kickback, i.e., reduced kickback bar, chains, bar tip guard or chain brake. No chain-saw kickback device ((~~shall~~)) must be removed or otherwise disabled.

(2) Gasoline-engine power saw operations ((~~shall~~)) must meet the requirements of WAC 296-54-537(10).

(3) The chain saw ((~~shall~~)) must be operated and adjusted in accordance with the manufacturer's instructions.

(4) The employer must ensure that each chain saw, including any chain saw provided by an employee, is inspected before initial use during each workshift. At a minimum, the inspection ((~~shall~~)) must include the following:

(a) Chain-saw chains, to assure proper adjustment;

(b) Chain-saw mufflers, to assure that they are operational and in place;

(c) Chain brakes and nose shielding devices, to assure that they are in place and function properly;

(5) The chain saw ((~~shall~~)) must be fueled at least 10 feet (3 m) from any open flame or other source of ignition.

(6) The chain saw ((~~shall~~)) must be started at least 10 feet (3 m) from the fueling area.

(7) The chain saw ((~~shall~~)) must be started on the ground or where otherwise firmly supported. Drop-starting a chain saw is prohibited.

(8) The chain saw ((~~shall~~)) must be started with the chain brake engaged.

(9) The chain saw ((~~shall~~)) must be held with the thumbs and fingers of both hands encircling the handles during operation unless the employer demonstrates that a greater hazard is posed by keeping both hands on the chain saw in that particular situation.

(10) The chain-saw operator ((~~shall~~)) must be certain of footing before starting to cut. The chain saw ((~~shall~~)) must not be used in a position or at a distance that could cause the operator to become off-balance, to have insecure footing, or to relinquish a firm grip on the saw.

(11) Prior to felling any tree, the chain saw operator ((~~shall~~)) must clear away brush or other potential obstacles which might interfere with cutting the tree or using the retreat path.

(12) The chain saw ((~~shall~~)) must not be used to cut directly overhead.

(13) The chain saw ((~~shall~~)) must be carried in a manner that will prevent operator contact with the cutting chain and muffler.

(14) The chain saw ((~~shall~~)) must be shut off or at idle before the feller starts their retreat.

(15) The chain saw ((~~shall~~)) must be shut down or the chain brake ((~~shall~~)) must be engaged whenever a saw is carried further than 50 feet (15.2 m). The chain saw ((~~shall~~)) must be shut down or the chain brake ((~~shall~~)) must be engaged when a saw is carried less than 50 feet if conditions such as, but not limited to, the terrain, underbrush and slippery surfaces, may create a hazard for an employee.

Note: When an employee working aloft in trees or on poles when supported by climbing spurs and climbing belt, or when an employee is working from a vehicle mounted elevating and rotating work platform meeting the requirements of chapter 296-869 WAC, Elevating work platforms, leg protection covering the full length of the thigh to the top of the boot on each leg to protect against contact with a moving chain saw is not required.

(16) Each power saw weighing more than 15 pounds (6.8 kilograms, service weight) that is used in trees ((~~shall~~)) must be supported by a separate line, except when work is performed from an aerial lift and except during topping or removing operations where no supporting limb will be available, and the following:

(a) Each power saw ((~~shall~~)) must be equipped with a control that will return the saw to idling speed when released;

(b) Each power saw ((~~shall~~)) must be equipped with a clutch and ((~~shall~~)) must be so adjusted that the clutch will not engage the chain drive at idling speed;

(c) Drop starting of saws over 15 pounds (6.8 kg) is permitted outside of the bucket of an aerial lift only if the area below the lift is clear of personnel;

(d) A power saw engine may be started and operated only when all employees other than the operator are clear of the saw;

(e) A power saw ((~~may not~~)) cannot be running when the saw is being carried up into a tree by an employee; and

(f) Power saw engines ((~~shall~~)) must be stopped for all cleaning, refueling, adjustments, and repairs to the saw or motor, except as the manufacturer's servicing procedures require otherwise.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-305 Live-line tools. (1) Design of tools. Live-line tool rods, tubes, and poles ((~~shall~~)) must be designed and constructed to withstand the following minimum tests:

(a) 100,000 volts per foot (3281 volts per centimeter) of length for 5 minutes if the tool is made of fiberglass-reinforced plastic (FRP); or

(b) 75,000 volts per foot (2461 volts per centimeter) of length for 3 minutes if the tool is made of wood; or

(c) Other tests that the employer can demonstrate are equivalent.

Note: Live-line tools using rod and tube that meet ASTM F711-02 (2013), Standard Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used in Live-Line Tools, conform to subsection (1)(a) of this section.

(2) Condition of tools.

(a) Each live-line tool ((~~shall~~)) must be wiped clean and visually inspected for defects before use each day.

(b) If any defect or contamination that could adversely affect the insulating qualities or mechanical integrity of the live-line tool is present after wiping, the tool ((~~shall~~)) must be removed from service and examined and tested according to this section before being returned to service.

(c) Live-line tools used for primary employee protection ((~~shall~~)) must be removed from service every two years and whenever required under this section for examination, cleaning, repair, and testing as follows:

(i) Each tool ((~~shall~~)) must be thoroughly examined for defects.

(ii) If a defect or contamination that could adversely affect the insulating qualities or mechanical integrity of the live-line tool is found, the tool ((~~shall~~)) must be repaired and refinished or ((~~shall~~)) must be permanently removed from service. If no such defect or contamination is found, the tool ((~~shall~~)) must be cleaned and waxed.

(iii) The tool ((~~shall~~)) must be tested in accordance with this section under the following conditions:

(A) After the tool has been repaired or refinished; and

(B) After the examination if repair or refinishing is not performed, unless the tool is made of FRP rod or foam-filled FRP tube and the employer can demonstrate that the tool has no defects that could cause it to fail in use.

(iv) The test method used ((~~shall~~)) must be designed to verify the tool's integrity along its entire working length and, if the tool is made of fiberglass-reinforced plastic, its integrity under wet conditions.

(v) The voltage applied during the tests ((~~shall~~)) must be as follows:

(A) 75,000 volts per foot (2461 volts per centimeter) of length for one minute if the tool is made of fiberglass; or

(B) 50,000 volts per foot (1640 volts per centimeter) of length for one minute if the tool is made of wood; or

(C) Other tests that the employer can demonstrate are equivalent.

Note: Guidelines for the examination, cleaning, repairing, and in-service testing of live-line tools are contained in the Institute of Electrical and Electronics Engineers Guide for In-Service Maintenance and Electrical Testing of Live-Line Tools, IEEE Std. 516-2009.

(d) Live-line tools and rope ((~~shall~~)) must be stored and maintained and used in such a manner as to prevent damage. Live-line tools and ropes ((~~shall~~)) must not be used for purposes other than line work.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-315 Materials handling and storage. (1) General. Material handling and storage ((~~shall~~)) must conform to the requirements of chapter 296-24 WAC, Part D.

(2) Materials storage near energized lines or equipment. In areas not restricted to qualified electrical employees only, materials or equipment ((~~may not~~)) cannot be stored closer to energized lines or exposed energized parts of equipment than the following distances plus an amount providing for the maximum sag and side swing of all conductors and providing for the height and movement of material handling equipment:

(a) For lines and equipment energized at 50 kV or less, the distance is 10 feet (305 cm).

(b) For lines and equipment energized at more than 50 kV, the distance is 10 feet (305 cm) plus 4 inches (10 cm) for every 10 kV over 50 kV.

(c) In areas restricted to qualified electrical employees, material ((~~may not~~)) cannot be stored within the working space about energized lines or equipment.

Note: Requirements for the size of the working space are contained in WAC 296-45-475(1) and 296-45-48515.

(3) Prior to unloading steel, poles, crossarms and similar materials, the load ((~~shall~~)) must be thoroughly examined to determine if the load has shifted, binders or stakes have broken or the load is otherwise hazardous to employees. The hoist rope ((~~shall~~)) must not be wrapped around the load. This provision ((~~shall~~)) will not apply to electric construction crews when setting or removing poles.

(4) Pole handling.

(a) During pole hauling operations, all loads ((~~shall~~)) must be secured to prevent displacement, and a red flag ((~~shall~~)) must be displayed at the trailing end of the longest pole.

(b) While loading and unloading materials, roadways ((~~shall~~)) must not be blocked unless approved traffic control is used.

(c) When hauling poles during darkness, illuminated warning devices ((~~shall~~)) must be attached to the trailing end of the longest pole in accordance with the state of Washington motor vehicle code.

(d) Framing. During framing operations, employees must not work under a pole or a structure suspended by a crane, A-frame or similar equipment unless the pole or structure is adequately supported.

(5) Tag lines. When necessary to control loads, tag lines or other approved devices ((~~shall~~)) must be used.

(6) Oil filled equipment. During construction or repair of oil filled equipment, the oil may be stored in temporary containers other than those required by WAC 296-155-270, such as pillow tanks.

(7) Storage of tools and materials. All tools and materials ((~~shall~~)) must be stored in a safe and orderly manner in yards for equipment and other areas.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-325 Working on or near exposed energized parts. This section applies to work on exposed live parts, or near enough to them, to expose the employee to any hazard they present.

(1) General. Only qualified electrical employees may work on or with exposed energized lines or parts of equipment. Only qualified electrical employees may work in areas containing unguarded, uninsulated energized lines or parts of equipment operating at 50 volts or more. Electric lines and equipment ((~~shall~~)) must be considered and treated as energized unless the provisions of WAC 296-45-175 through 296-45-17565 or 296-45-335 have been followed.

(2) Except as provided in subsection (3) of this section, at least two qualified electrical employees ((~~shall~~)) must be present while the following types of work are being performed:

(a) Installation, removal, or repair of lines that are energized at more than 600 volts;

(b) Installation, removal, or repair of deenergized lines if an employee is exposed to contact with other parts energized at more than 600 volts;

(c) Installation, removal, or repair of equipment, such as transformers, capacitors, and regulators, if an employee is exposed to contact with parts energized at more than 600 volts;

(d) Work involving the use of mechanical equipment, other than insulated aerial lifts, near parts energized at more than 600 volts; and

(e) Other work that exposes an employee to electrical hazards greater than or equal to those posed by operations that are specifically listed in subsection (2)(a) through (d) of this section.

Notes: • One qualified electrical employee will serve principally as a standby person who must be so located that they may physically reach the other qualified electrical employee in the event of an accident either with their hand or with a hot stick twelve feet or less in length. The standby person will be so positioned as to be able to observe the other employee, their bodily movements, and verbally warn of any impending dangers. In no case when working in pairs will qualified electrical employees work simultaneously on energized wires or parts of different phases or polarity;

• When installing or removing a hot line clamp connection on a multiphase system, it is permissible for the second qualified electrical employee to stand by at the lower controls of the aerial lift provided the connection or disconnection does not interrupt or pick up the load. The hot line clamp and connecting jumper must be constructed so it cannot make contact with any other energized parts. The work must not be performed above lines or apparatus energized at more than 600 V.

• In cases of necessity the standby person may temporarily assist the other qualified electrical employee provided that they both work on wires or parts of the same phase or polarity. Both qualified electrical employees ((~~shall~~)) must so position themselves so that the presence of the second person does not increase the hazard.

(3) The provisions of WAC 296-45-325(2) do not apply to (a) through (e) of this subsection. In addition to the requirements of subsection (4) of this section, a qualified electrical employee working under this subsection (3), must position themselves so that they are neither within reach of nor otherwise exposed to contact with energized parts.

(a) When re-fusing circuits or equipment with a hot stick.

(b) When operating switches by means of operating handle or switch sticks.

(c) When installing or removing a hot line clamp connection with an approved hot stick on a single-phase line or apparatus, providing that the connection or disconnection does not interrupt or pick up a load.

Notes: • The hot line clamp and connecting jumper must be constructed so that it cannot make contact with any other energized parts.

• On a multiphase feed this applies only when one single-phase line or apparatus is present on the load side.

(d) When installing or removing by hot stick simple load metering devices provided the connection does not interrupt or pickup load.

(e) Emergency repairs to the extent necessary to safeguard the general public.

(4) ((")))Minimum approach distances.((")) The employer ((~~shall~~)) must ensure that no employee approaches or takes any conductive object closer to exposed energized parts than set forth in Table 2, unless:

(a) The employee is insulated from the energized part (insulating gloves or insulating gloves and sleeves worn in accordance with subsection (6) of this section are considered insulation of the employee only with regard to the energized part upon which work is being performed); or

(b) The energized part is insulated from the employee and from any other conductive object at a different potential;

(c) Appendix A of this chapter contains additional information relating to working on exposed energized parts.

(d) For voltages over 72.5 kilovolts, the employer must determine the maximum anticipated per-unit transient overvoltage, phase-to-ground, through an engineering analysis or assume a maximum anticipated per-unit transient overvoltage, phase-to-ground, in accordance with Table 4 of this section. When the employer uses portable protective gaps to control the maximum transient overvoltage, the value of the maximum anticipated per-unit transient overvoltage, phase-to-ground, must provide for five standard deviations between the statistical spark-over voltage of the gap and the statistical withstand voltage corresponding to the electrical component of the minimum approach distance. The employer must make any engineering analysis conducted to determine maximum anticipated per-unit transient overvoltage available upon request to employees and to the department for examination and copying.

Table 2
AC Live Work Minimum Approach Distance

	Distance to Employee					
Voltage in Kilovolts Phase-to-Phase((~~*~~))	**Phase-to-Ground**			**Phase-to-Phase**		
	(((~~(m)~~))) **(ft-in)**	**(ft-1/10)**	(((~~**(ft in)**~~))) **(m)**	(((~~**(m)**~~))) **(ft-in)**	**(ft-1/10)**	(((~~**(ft in)**~~))) **(m)**
Table 2-A For Voltages of 72.5 KV and Less ([1,2,3,4])						
0 to 0.050	not specified			not specified		
0.051 to 0.300	avoid contact			avoid contact		
0.301 to 0.750	((~~0.33~~)) 1'-2"	1.09	(((~~1'-2"~~))) 0.33	((~~0.33~~)) 1'-2"	1.09	(((~~1'-2"~~))) 0.33
0.751 to 5	((~~0.63~~)) 2'-1"	2.07	(((~~2'-1"~~))) 0.63	((~~0.63~~)) 2'-1"	2.07	(((~~2'-1"~~))) 0.63

Distance to Employee						
Voltage in Kilovolts Phase-to-Phase((*))	Phase-to-Ground			Phase-to-Phase		
	((~~(m)~~)) (ft-in)	(ft-1/10)	((~~(ft-in)~~)) (m)	((~~(m)~~)) (ft-in)	(ft-1/10)	((~~(ft-in)~~)) (m)
5.1 to 15.0	((~~0.65~~)) 2'-2"	2.14	((~~(2'-2")~~)) 0.65	((~~0.68~~)) 2'-3"	2.24	((~~(2'-3")~~)) 0.68
15.1 to 36.0	((~~0.77~~)) 2'-7"	2.53	((~~(2'-7")~~)) 0.77	((~~0.89~~)) 3'-0"	2.92	((~~(3'-0")~~)) 0.89
36.1 to 46.0	((~~0.84~~)) 2'-10"	2.76	((~~(2'-10")~~)) 0.84	((~~0.98~~)) 3'-3"	3.22	((~~(3'-3")~~)) 0.98
46.1 to 72.5	((~~1.00**~~)) 3'-3"	3.29((~~**~~))	((~~(3'-3")~~)) 1.00	((~~1.20~~)) 4'-0"	3.94	((~~(4'-0")~~)) 1.20

[1]Employers may use the minimum approach distances in this table provided the worksite is at an elevation of 3,000 feet (900 meters) (((~~3,000 feet~~))) or less. If employees will be working at elevations greater than 3,000 feet (900 meters) (((~~3,000 feet~~))) above mean sea level, the employer ((~~shall~~)) must determine minimum approach distances by multiplying the distances in this table by the correction factor in Table 3 below((~~. A corresponding to the altitude of the work~~)), altitude correction factors.

[2]For single-phase systems, use voltage-to-ground.

[3]For single-phase lines off three phase systems, use the phase-to-phase voltage of the system.

[4]The 46.1 to 72.5 kV phase-to-ground 3-3 distance contains a 1-3 electrical component and a ((~~2-0~~)) 2'-0 inadvertent movement component.

Table 2-B For Voltages of 72.6 KV and up((~~1,2,3~~)) [5,6,7]	Phase-to-Ground			Phase-to-Phase		
	(ft-in)	(ft-1/10)	(m)	(ft-in)	(ft-1/10)	(m)
72.6 to 121	((~~1.13~~)) 3'-9"**	3.71**	((~~(3'-9")~~)) 1.13	((~~1.42~~)) 4'-8"	4.66	((~~(4'-8")~~)) 1.42
121.1 to 145.0	((~~1.30~~)) 4'-4"	4.27	((~~(4'-4")~~)) 1.30	((~~1.64~~)) 5'-5"	5.38	((~~(5'-5")~~)) 1.64
145.1 to 169.0	((~~1.46~~)) 4'-10"	4.79	((~~(4'-10")~~)) 1.46	((~~1.94~~)) 6'-5"	6.36	((~~(6'-5")~~)) 1.94
169.1 to 242.0	((~~2.01~~)) 6'-8"	6.59	((~~(6'-8")~~)) 2.01	((~~3.08~~)) 10'-2"	10.10	((~~(10'-2")~~)) 3.08
242.1 to 362.0	((~~3.41~~)) 11'-3"	11.19	((~~(11'-3")~~)) 3.41	((~~5.52~~)) 18'-2"	18.11	((~~(18'-2")~~)) 5.52
362.1 to 420.0	((~~4.25~~)) 14'-0"	13.94	((~~(14'-0")~~)) 4.25	((~~6.81~~)) 22'-5"	22.34	((~~(22'-5")~~)) 6.81
420.1 to 550.0	((~~5.07~~)) 16'-8"	16.63	((~~(16'-8")~~)) 5.07	((~~8.24~~)) 27'-1"	27.03	((~~(27'-1")~~)) 8.24
550.1 to 800.0	((~~6.88~~)) 22'-7"	22.57	((~~(22'-7")~~)) 6.88	((~~11.38~~)) 37'-5"	37.34	((~~(37'-5")~~)) 11.38

((~~1~~)) [5]Employers may use the minimum approach distances in this table provided the worksite is at an elevation of 3,000 feet (900 meters) (((~~3,000 feet~~))) or less. If employees will be working at elevations greater than 3,000 feet (900 meters) (((~~3,000 feet~~))) above mean sea level, the employer shall determine minimum approach distances by multiplying the distances in this table by the correction factor in Table 3 below((~~. A corresponding to the altitude of the work~~)), altitude corrections factor.

((~~2~~)) [6]Employers may use the phase-to-phase minimum approach distances in this table provided that no insulated tool spans the gap and no large conductive object is in the gap. (See Equation 1 for voltages of 72.6-800 kV in Appendix A.)

((~~3~~)) [7]The 72.6 to 121 kV phase-to-ground ((~~3-2~~)) 3-9 distance contains a ((~~2-2~~)) 2-9 electrical component and a ((~~1-0~~)) 1'-0 inadvertent movement component.**

Note: The clear live-line tool distance shall equal or exceed the values for the indicated voltage ranges.

Table 3 - Altitude Correction Factors

Altitude above sea level (m)	*A*
0 to 900	1.00
901 to 1,200	1.02
1,201 to 1,500	1.05
1,501 to 1,800	1.08
1,801 to 2,100	1.11
2,101 to 2,400	1.14
2,401 to 2,700	1.17
2,701 to 3,000	1.20
3,001 to 3,600	1.25
3,601 to 4,200	1.30
4,201 to 4,800	1.35
4,801 to 5,400	1.39
5,401 to 6,000	1.44

Table 4
Assumed Maximum Per-Unit Transient Overvoltage

Voltage Range (kV)	Type of Current (ac or dc)	Assumed Maximum Per-Unit Transient Overvoltage
72.6 to 420.0	ac	3.5
420.1 to 550.0	ac	3.0
550.1 to 800.0	ac	2.5
250 to 750	dc	1.8

Notes:
- WAC 296-45-475 (5)(a) and 296-45-48525(1) contain requirements for the guarding and isolation of live parts. Parts of electric circuits that meet these two provisions are not considered as "exposed" unless a guard is removed or an employee enters the space intended to provide isolation from the live parts.
- When an employee is required to work on or within reach of any unprotected conductors that are or may become energized at more than 50 volts and less than 600 volts between phases, they shall take the following precautions:
  - They shall wear approved insulating gloves or insulating gloves and sleeves during the time they are working on such conductor; or
  - They shall cover, with approved devices, any adjacent unprotected conductor that could be touched by any part of their body, and use insulated tools.
  - Cables which are properly insulated for the voltages to which they are energized, shall be considered as an effective barrier to protect the employees and Table 2 need not apply.
- Appendix A of this chapter contains additional information relating to working on exposed energized parts.

(5) Initial determination.

(a) Before any work is performed, the location of energized lines and their condition, the location and condition of energized equipment, the condition of the poles, the location of circuits and equipment including power communication lines, CATV and fire alarm circuits, ((~~shall~~)) must be determined ((~~as shall~~)) and communicated to employees as will any other particular hazard of a particular work site.

(b) No work ((~~shall~~)) must be performed on energized lines or parts until the voltage of such equipment and lines is determined.

(6) Type of insulation. If the employee is to be insulated from energized parts by the use of insulating gloves (under subsection (4) of this section), insulating sleeves ((~~shall~~)) must also be used. However, insulating sleeves need not be used under the following conditions:

(a) If exposed energized parts on which work is not being performed are insulated from the employee; and

(b) If such insulation is placed from a position not exposing the employee's upper arm to contact with other energized parts.

(7) Working position. The employer ((~~shall~~)) must ensure that each employee, to the extent that other safety-related conditions at the worksite permit, works in a position from which a slip or shock will not bring the employee's body into contact with exposed, uninsulated parts energized at a potential different from the employee.

(8) Making connections. The employer ((~~shall~~)) must ensure that connections are made as follows:

(a) In connecting deenergized equipment or lines to an energized circuit by means of a conducting wire or device, an employee ((~~shall~~)) must first attach the wire to the deenergized part;

(b) When disconnecting equipment or lines from an energized circuit by means of a conducting wire or device, an employee ((~~shall~~)) must remove the source end first; and

(c) When lines or equipment are connected to or disconnected from energized circuits, loose conductors ((~~shall~~)) must be kept away from exposed energized parts.

(9) Rubber gloves can only be used on 5,000 volts or less between phases.

(10) It ((~~shall~~)) must not be permissible to consider one part of a high voltage switch or disconnect as deenergized for the purpose of doing work on it if the remainder of the switch or disconnect remains energized unless approved barriers are erected which will prevent employees who are doing the work on such equipment from coming in direct contact with the energized parts.

(11) Conductor support tools such as link sticks, strain carriers, and insulator cradles may be used: Provided, That the clear insulation is at least as long as the insulator string or the minimum distance specified in Table 2 for the operating voltage.

(12) Apparel.

(a) When work is performed within reaching distance of exposed energized parts of equipment, the employer ((~~shall~~)) must ensure that each employee removes or renders nonconductive all exposed conductive articles, such as key or watch chains, rings, or wrist watches or bands, unless such articles do not increase the hazards associated with contact with the energized parts.

(b) ((~~Workers shall~~)) Employees must wear clothing appropriate to the season and the kind of work being per-

formed. Shirts or jumpers must have full length sleeves that are rolled down. Protective hard hats and eye protection ((~~shall~~)) must be worn when working on or near live parts or while climbing poles.

(13) Protection from flames and electric arcs.

(a) The employer ((~~shall~~)) must assess the workplace to identify employees exposed to hazards from flames or from electric arcs.

(b) For each employee exposed to hazards from electric arcs, the employer ((~~shall~~)) must make a reasonable estimate of the incident heat energy to which the employee would be exposed.

Notes: • Appendix D of this chapter provides guidance on estimating available heat energy. The department will deem employers following the guidance in Appendix D to be in compliance with (b) of this subsection. An employer may choose a method of calculating incident heat energy not included in Appendix D if the chosen method reasonably predicts the incident energy to which the employee would be exposed.

• This subsection does not require the employer to estimate the incident heat energy exposure for every job task performed by each employee. The employer may make broad estimates that cover multiple system areas provided the employer uses reasonable assumptions about the energy-exposure distribution throughout the system and provided the estimates represent the maximum employee exposure for those areas. For example, the employer could estimate the heat energy just outside a substation feeding a radial distribution system and use that estimate for all jobs performed on that radial system.

(c) The employer ((~~shall~~)) must ensure that each employee who is exposed to hazards from flames or electric arcs does not wear clothing that could melt onto their skin or that could ignite and continue to burn when exposed to flames or the heat energy estimated under (b) of this subsection.

Note: This subsection prohibits clothing made from acetate, nylon, polyester, rayon and polypropylene, either alone or in blends, unless the employer demonstrates that the fabric has been treated to withstand the conditions that may be encountered by the employee or that the employee wears the clothing in such a manner as to eliminate the hazard involved.

(d) The employer ((~~shall~~)) must ensure that the outer layer of clothing worn by an employee, except for clothing not required to be arc rated under (e)(i) through (v) of this subsection, is flame resistant under any of the following conditions:

(i) The employee is exposed to contact with energized circuit parts operating at more than 600 volts;

(ii) An electric arc could ignite flammable material in the work area that, in turn, could ignite the employee's clothing;

(iii) Molten metal or electric arcs from faulted conductors in the work area could ignite the employee's clothing; or

Note: This subsection does not apply to conductors that are capable of carrying, without failure, the maximum available fault current for the time the circuit protective devices take to interrupt the fault.

(iv) The incident heat energy estimated under (b) of this subsection exceeds 2.0 cal/cm^2.

(e) The employer ((~~shall~~)) must ensure that each employee exposed to hazards from electric arcs wears protective clothing and other protective equipment with an arc rating greater than or equal to the heat energy estimated under (b) of this subsection whenever that estimate exceeds 2.0 cal/cm^2. This protective equipment ((~~shall~~)) must cover the employee's entire body, except as follows:

(i) Arc-rated protection is not necessary for the employee's hands when the employee is wearing rubber insulating gloves with protectors or, if the estimated incident energy is no more than 14 cal/cm^2, heavy-duty leather work gloves with a weight of at least 407 gm/m^2(12 oz/yd^2);

(ii) Arc-rated protection is not necessary for the employee's feet when the employee is wearing heavy-duty work shoes or boots;

(iii) Arc-rated protection is not necessary for the employee's head when the employee is wearing head protection meeting WAC 296-800-16055 if the estimated incident energy is less than 9 cal/cm^2 for exposures involving single-phase arcs in open air or 5 cal/cm^2 for other exposures;

(iv) The protection for the employee's head may consist of head protection meeting WAC 296-800-16055 and a faceshield with a minimum arc rating of 8 cal/cm^2 if the estimated incident-energy exposure is less than 13 cal/cm^2 for exposures involving single-phase arcs in open air or 9 cal/cm^2 for other exposures; and

(v) For exposures involving singlephase arcs in open air, the arc rating for the employee's head and face protection may be 4 cal/cm^2 less than the estimated incident energy.

Note: See Appendix D of this chapter for further information on the selection of appropriate protection.

(14) Fuse handling. When fuses must be installed or removed with one or both terminals energized at more than 300 volts or with exposed parts energized at more than 50 volts, the employer ((~~shall~~)) must ensure that tools or gloves rated for the voltage are used. When expulsion-type fuses are installed with one or both terminals energized at more than 300 volts, the employer ((~~shall~~)) must ensure that each employee wears eye protection meeting the requirements of WAC 296-45-25505(1), uses a tool rated for the voltage, and is clear of the exhaust path of the fuse barrel.

(15) Covered (noninsulated) conductors. The requirements of this section which pertain to the hazards of exposed live parts also apply when work is performed in the proximity of covered (noninsulated) wires.

(16) Noncurrent-carrying metal parts. Noncurrent-carrying metal parts of equipment or devices, such as transformer cases and circuit breaker housings, ((~~shall~~)) must be treated as energized at the highest voltage to which they are exposed, unless the employer inspects the installation and determines that these parts are grounded before work is performed.

(17) Opening circuits under load. Devices used to open circuits under load conditions ((~~shall~~)) must be designed to interrupt the current involved.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-335 Deenergizing lines and equipment for employee protection. (1) Application. This section applies to the deenergizing of transmission and distribution lines and equipment for the purpose of protecting employees. Control of hazardous energy sources used in the generation

of electric energy is covered in WAC 296-45-175. Conductors and parts of electric equipment that have been deenergized under procedures other than those required by WAC 296-45-175 or 296-45-335, as applicable, ((~~shall~~)) must be treated as energized.

(2) "General."

(a) If a system operator is in charge of the lines or equipment and their means of disconnection, all of the requirements of subsection (3) of this section ((~~shall~~)) must be observed, in the order given.

(b) If no system operator is in charge of the lines or equipment and their means of disconnection, one employee in the crew ((~~shall~~)) must be designated as being in charge of the clearance. All of the requirements of subsection (3) of this section apply, in the order given, except as provided in subsection (2)(c) of this section. The employee in charge of the clearance ((~~shall~~)) must take the place of the system operator, as necessary.

(c) If only one crew will be working on the lines or equipment and if the means of disconnection is accessible and visible to and under the sole control of the employee in charge of the clearance, subsection (3)(a), (c), and (d) of this section do not apply. Additionally, tags required by the remaining provisions of subsection (3) of this section need not be used.

(d) Any disconnecting means that are accessible to persons outside the employer's control (for example, the general public) ((~~shall~~)) must be rendered inoperable while they are open for the purpose of protecting employees.

(3) Deenergizing lines and equipment.

(a) In all cases, switching orders must be given directly to the employees in charge of operating the switches by the system operator who has jurisdiction and such communications must be repeated back word for word to the speaker. When requesting clearance on lines under the control of the system operator, a person requesting the clearance ((~~shall~~)) must obtain the name of the system operator to whom the request was made and the system operator ((~~shall~~)) must obtain the name of the person requesting the clearance; and assure that the person is qualified to receive such a clearance. A qualified electrical employee ((~~shall~~)) must make a request of the system operator to have the particular section of line or equipment deenergized. The qualified electrical employee becomes the employee in charge (as this term is used in subsection (2)(b) of this section) and is responsible for the clearance. In giving a clearance, the system operator ((~~shall~~)) must make certain that the person to whom the clearance is given is fully aware of the extent or the limits of the clearance.

(b) All switches, disconnectors, jumpers, taps, and other means through which known sources of electric energy may be supplied to the particular lines and equipment to be deenergized ((~~shall~~)) must be opened. Such means ((~~shall~~)) must be rendered inoperable, unless its design does not so permit, and tagged to indicate that employees are at work.

(c) Automatically and remotely controlled switches that could cause the opened disconnecting means to close ((~~shall~~)) must also be tagged at the point of control. The automatic or remote control feature ((~~shall~~)) must be rendered inoperable, unless its design does not so permit.

(d) Tags ((~~shall~~)) must prohibit operation of the disconnecting means and ((~~shall~~)) must indicate that employees are at work.

(e) After the applicable requirements in subsection (3)(a) through (d) of this section have been followed and the employee in charge of the work has been given a clearance by the system operator, the lines and equipment to be worked ((~~shall~~)) must be tested to ensure that they are deenergized.

(4) The system operator ((~~shall~~)) must order clearance tags printed on red cardboard, or equivalent, not less than 2-1/4 inches by 4-1/2 inches, attached to all switches opened or checked open to provide clearance on any line or equipment for employees to work thereon.

(5) Clearance tags attached to substation control devices and to line switches beyond the switchyard of any substation; indicating the limits of the clearance involved; ((~~shall~~)) must state the designation of the switch opened or checked open and tagged; the name of the person to whom the clearance is to be issued; the date and time the switch was opened or checked open; the name of the dispatcher ordering the switching and tagging; and the name of the person doing the switching and tagging.

(6) Protective grounds ((~~shall~~)) must be installed as required by WAC 296-45-345.

(7) After the applicable requirements of subsection (3)(a) through (d) of this section have been followed, the lines and equipment involved may be worked as deenergized.

(8) If two or more independent crews will be working on the same lines or equipment, each crew ((~~shall~~)) must independently comply with the requirements in subsection (3) of this section.

(9) To transfer the clearance, the employee in charge (or, if the employee in charge is forced to leave the worksite due to illness or other emergency, the employee's supervisor) ((~~shall~~)) must inform the system operator; employees in the crew ((~~shall~~)) must be informed of the transfer; and the new employee in charge ((~~shall~~)) must be responsible for the clearance.

(10) To release a clearance, the employee in charge ((~~shall~~)) must:

(a) Notify employees under ((~~his or her~~)) their direction that the clearance is to be released;

(b) Determine that all employees in the crew are clear of the lines and equipment;

(c) Determine that all protective grounds installed by the crew have been removed; and

(d) Report this information to the system operator and release the clearance.

(11) The person releasing a clearance ((~~shall~~)) must be the same person that requested the clearance, unless responsibility has been transferred under subsection (9) of this section.

(12) Tags ((~~may not~~)) cannot be removed unless the associated clearance has been released under subsection (10) of this section.

(13) Only after all protective grounds have been removed, after all crews working on the lines or equipment have released their clearances, after all employees are clear of the lines and equipment, and after all protective tags have been removed from a given point of disconnection, may

action be initiated to reenergize the lines or equipment at that point of disconnection.

(14) To meet unforeseen conditions, it will be permissible to tag isolated switches for the system operator and issue clearances against this tag. In tagging out inter-utility tie lines, the open switches on the foreign end of the line ((~~shall~~)) must be tagged for the foreign system operator requesting the outage who will issue clearances to individuals of the organization against this tag.

(15) Network protectors. The employer need not use the tags mentioned in subsection (3)(d) and (e) of this section on a network protector for work on the primary feeder for the network protector's associated network transformer when the employer can demonstrate all of the following conditions:

(a) Every network protector is maintained so that it will immediately trip open if closed when a primary conductor is deenergized;

(b) Employees cannot manually place any network protector in a closed position without the use of tools, and any manual override position is blocked, locked, or otherwise disabled; and

(c) The employer has procedures for manually overriding any network protector that incorporate provisions for determining, before anyone places a network protector in a closed position, that: The line connected to the network protector is not deenergized for the protection of any employee working on the line; and (if the line connected to the network protector is not deenergized for the protection of any employee working on the line) the primary conductors for the network protector are energized.

(16) Metal-clad, draw-out switchgear of over 600 volts in which the physical separation of the disconnecting parts is not visible may be used to clear a line or equipment, provided the switchgear is equipped with:

(a) A positive positioning means to insure that the disconnecting contacts are separated;

(b) An isolating shutter which moves into place between the separated contact for circuit isolation; and

(c) A mechanically connected indicating means to show that the shutter is in place.

(17) In all other cases, only a visible break of all phases ((~~shall~~)) must be regarded as clearing a line or equipment.

(18) No person ((~~shall~~)) must make contact with a circuit or equipment that has not been taken out of service to be worked on until they have the circuit or equipment cleared and tagged for themselves or is working directly under the supervision of one who has the circuit or equipment cleared and tagged for themselves.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-345 Grounding for the protection of employees. (1) Application. This section applies to the grounding of transmission and distribution lines and equipment for the purpose of protecting employees. Subsection (4) of this section also applies to the protective grounding of other equipment as required elsewhere in this section.

(2) General. For the employee to work lines or equipment as deenergized, the lines or equipment ((~~shall~~)) must be deenergized under the provisions of WAC 296-45-335 and ((~~shall~~)) must be grounded as specified in subsections (3) through (9) of this section. However, if the employer can demonstrate that installation of a ground is impracticable or that the conditions resulting from the installation of a ground would present greater hazards than working without grounds, the lines and equipment may be treated as deenergized provided all of the following conditions are met:

(a) The lines and equipment have been deenergized under the provisions of WAC 296-45-335.

(b) There is no possibility of contact with another energized source.

(c) The hazard of induced voltage is not present.

(3) Equipotential zone. Temporary protective grounds and bonding jumpers ((~~shall~~)) must be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential.

Note: This may require bonding equipment together.

(4) Protective grounding equipment.

(a) Protective grounding equipment ((~~shall~~)) must be capable of conducting the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault. This equipment ((~~shall~~)) must have an ampacity greater than or equal to that of No. 2 AWG copper.

(b) Grounding jumpers ((~~shall~~)) must have approved ferrules and grounding clamps that provide mechanical support for jumper cables independent of the electrical connection.

Note: Guidelines for protective grounding equipment are contained in American Society for Testing and Materials Standard Specifications for Temporary Grounding Systems to be Used on Deenergized Electric Power Lines and Equipment, ASTM F855-2015.

(c) Protective grounds ((~~shall~~)) must have an impedance low enough to cause immediate operation of protective devices in case of accidental energizing of the lines or equipment.

(5) Testing. Before any ground is installed, lines and equipment ((~~shall~~)) must be tested and found absent of nominal voltage, unless a previously installed ground is present.

(a) Inspection before use: Grounding equipment ((~~shall~~)) must be given a visual inspection and all mechanical connections ((~~shall~~)) must be checked for tightness before each use.

(b) Ground surface cleaning: The surface to which the ground is to be attached ((~~shall~~)) must be clean before the grounding clamp is installed; otherwise, a self-cleaning clamp ((~~shall~~)) must be used.

(6) Order of connection. The employer ((~~shall~~)) must ensure that, when an employee attaches a ground to a line or to equipment, the employee attaches the ground-end connection first and then attaches the other end by means of a live-line tool. For lines or equipment operating at 600 volts or less, the employer may permit the employee to use insulating equipment other than a live-line tool if the employer ensures that the line or equipment is not energized at the time the ground is connected or if the employer can demonstrate that each employee is protected from hazards that may develop if the line or equipment is energized.

(7) ((")))Order of removal.((")) When a ground is to be removed, the grounding device ((~~shall~~)) must be removed from the line or equipment using a live-line tool before the ground-end connection is removed.

(8) ((")))Additional precautions.((")) When work is performed on a cable at a location remote from the cable terminal, the cable ((~~may not~~)) cannot be grounded at the cable terminal if there is a possibility of hazardous transfer of potential should a fault occur.

(9) Removal of grounds for test. Grounds may be removed temporarily during tests. During the test procedure, the employer ((~~shall~~)) must ensure that each employee uses insulating equipment and is isolated from any hazards involved, and the employer ((~~shall~~)) must institute any additional measures as may be necessary to protect each exposed employee in case the previously grounded lines and equipment become energized.

(10) Conductor separation: In cases where the conductor separation at any pole or structure is so great as to make it impractical to apply shorts on all conductors, and where only one conductor is to be worked on, only that conductor which is to be worked on needs to be grounded.

(11) Ground personnel: In cases where ground rods or pole grounds are utilized for personal protective grounding, personnel working on the ground should maintain sufficient distance from such equipment or utilize other approved procedures designed to prevent "touch-and step potential" hazards.

Note: See Appendix B of this chapter for protection from step and touch potentials.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-355 Underground grounding. (1) Grounding. A capacitance charge can remain in the high voltage cables after it has been disconnected from the circuit and a static-type arc can occur when grounds are applied to such cables.

(2) When work is to be done on cables or equipment of a high-voltage underground system, precautions to prevent back-feed ((~~shall~~)) must be taken. This ((~~shall~~)) must include either isolating or grounding of the secondary conductors.

(3) After grounding the cable, if the ((~~worker~~)) employee is to work on cable between terminations, they must first spike the cable or use other approved methods of testing. If the cable is to be cut, it ((~~shall~~)) must be cut only with approved hot cutters.

(4) Additional precautions. When work is performed on a cable at a location remote from the cable terminal, the cable ((~~may not~~)) cannot be grounded at the cable terminal if there is a possibility of hazardous transfer of potential should a fault occur.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-365 Testing and test facilities. (1) Application. This section provides for safe work practices for high-voltage and high-power testing performed in laboratories, shops, and substations, and in the field and on electric transmission and distribution lines and equipment. It applies only to testing involving interim measurements utilizing high voltage, high power, or combinations of both, and not to testing involving continuous measurements as in routine metering, relaying, and normal line work.

Note: Routine inspection and maintenance measurements made by qualified electrical employees are considered to be routine line work and are not included in the scope of this section, as long as the hazards related to the use of intrinsic high-voltage or high-power sources require only the normal precautions associated with routine operation and maintenance work required in the other subsections of this section. Two typical examples of such excluded test work procedures are "phasing-out" testing and testing for a "no-voltage" condition.

(2) General requirements.

(a) The employer ((~~shall~~)) must establish and enforce work practices for the protection of each worker from the hazards of high-voltage or high-power testing at all test areas, temporary and permanent. Such work practices ((~~shall~~)) must include, as a minimum, test area guarding, grounding, and the safe use of measuring and control circuits. A means providing for periodic safety checks of field test areas ((~~shall~~)) must also be included.

(b) Employees ((~~shall~~)) must be trained in safe work practices upon their initial assignment to the test area, with periodic reviews and updates provided as required by subsections of this section.

(3) Guarding of test areas.

(a) Permanent test areas ((~~shall~~)) must be guarded by walls, fences, or barriers designed to keep employees out of the test areas.

(b) In field testing, or at a temporary test site where permanent fences and gates are not provided, one of the following means ((~~shall~~)) must be used to prevent unauthorized employees from entering:

(i) The test area ((~~shall~~)) must be guarded by the use of distinctively colored safety tape that is supported approximately waist high and to which safety signs are attached;

(ii) The test area ((~~shall~~)) must be guarded by a barrier or barricade that limits access to the test area to a degree equivalent, physically and visually, to the barricade specified in this section; or

(iii) The test area ((~~shall~~)) must be guarded by one or more test observers stationed so that the entire area can be monitored.

(c) The barriers required by this section ((~~shall~~)) must be removed when the protection they provide is no longer needed.

(d) Guarding ((~~shall~~)) must be provided within test areas to control access to test equipment or to apparatus under test that may become energized as part of the testing by either direct or inductive coupling, in order to prevent accidental employee contact with energized parts.

(4) Grounding practices.

(a) The employer ((~~shall~~)) must establish and implement safe grounding practices for the test facility.

(i) All conductive parts accessible to the test operator during the time the equipment is operating at high voltage ((~~shall~~)) must be maintained at ground potential except for

portions of the equipment that are isolated from the test operator by guarding.

(ii) Wherever ungrounded terminals of test equipment or apparatus under test may be present, they ((~~shall~~)) must be treated as energized until determined by tests to be deenergized.

(b) Visible grounds ((~~shall~~)) must be applied, either automatically or manually with properly insulated tools, to the high-voltage circuits after they are deenergized and before work is performed on the circuit or item or apparatus under test. Common ground connections ((~~shall~~)) must be solidly connected to the test equipment and the apparatus under test.

(c) In high-power testing, an isolated ground-return conductor system ((~~shall~~)) must be provided so that no intentional passage of current, with its attendant voltage rise, can occur in the ground grid or in the earth. However, an isolated ground-return conductor need not be provided if the employer can demonstrate that both the following conditions are met:

(i) An isolated ground-return conductor cannot be provided due to the distance of the test site from the electric energy source; and

(ii) Employees are protected from any hazardous step and touch potentials that may develop during the test.

Note: See Appendix B of this chapter for information on measures that can be taken to protect employees from hazardous step and touch potentials.

(d) In tests in which grounding of test equipment by means of the equipment grounding conductor located in the equipment power cord cannot be used due to increased hazards to test personnel or the prevention of satisfactory measurements, a ground that the employer can demonstrate affords equivalent safety ((~~shall~~)) must be provided, and the safety ground ((~~shall~~)) must be clearly indicated in the test set up.

(e) When the test area is entered after equipment is deenergized, a ground ((~~shall~~)) must be placed on the high-voltage terminal and any other exposed terminals.

(i) High capacitance equipment or apparatus ((~~shall~~)) must be discharged through a resistor rated for the available energy.

(ii) A direct ground ((~~shall~~)) must be applied to the exposed terminals when the stored energy drops to a level at which it is safe to do so.

(f) If a test trailer or test vehicle is used in field testing, its chassis ((~~shall~~)) must be grounded. Protection against hazardous touch potentials with respect to the vehicle, instrument panels, and other conductive parts accessible to employees ((~~shall~~)) must be provided by bonding, insulation, or isolation.

(5) Control and measuring circuits.

(a) Control wiring, meter connections, test leads and cables ((~~may not~~)) cannot be run from a test area unless they are contained in a grounded metallic sheath and terminated in a grounded metallic enclosure or unless other precautions are taken that the employer can demonstrate as ensuring equivalent safety.

(b) Meters and other instruments with accessible terminals or parts ((~~shall~~)) must be isolated from test personnel to protect against hazards arising from such terminals and parts becoming energized during testing. If this isolation is provided by locating test equipment in metal compartments with viewing windows, interlocks ((~~shall~~)) must be provided to interrupt the power supply if the compartment cover is opened.

(c) The routing and connections of temporary wiring ((~~shall~~)) will be made secure against damage, accidental interruptions and other hazards. To the maximum extent possible, signal, control, ground, and power cables ((~~shall~~)) must be kept separate.

(d) If employees will be present in the test area during testing, a test observer ((~~shall~~)) must be present. The test observer ((~~shall~~)) must be capable of implementing the immediate deenergizing of test circuits for safety purposes.

(6) Safety check.

(a) Safety practices governing employee work at temporary or field test areas ((~~shall~~)) must provide for a routine check of such test areas for safety at the beginning of each series of tests.

(b) The test operator in charge ((~~shall~~)) must conduct these routine safety checks before each series of tests and ((~~shall~~)) must verify at least the following conditions:

(i) That barriers and guards are in workable condition and are properly placed to isolate hazardous areas;

(ii) That system test status signals, if used, are in operable condition;

(iii) That test power disconnects are clearly marked and readily available in an emergency;

(iv) That ground connections are clearly identifiable;

(v) That personal protective equipment is provided and used;

(vi) That signal, ground, and power cables are properly separated.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-375 Mechanical equipment, including aerial manlift equipment. (1) General requirements.

(a) Other applicable requirements. Mechanical equipment ((~~shall~~)) must be operated in accordance with applicable requirements in other chapters, including chapter 296-155 WAC, Parts L, M, and R, and chapter 296-869 WAC, except that WAC 296-155-605 (1)(h) and 296-155-77100 (1)(h) do not apply to operations performed by qualified electrical employees.

(b) The critical safety components of mechanical elevating and rotating equipment ((~~shall~~)) must receive a thorough visual inspection and operational test before use on each shift.

Note: Critical safety components of mechanical elevating and rotating equipment are components whose failure would result in a free fall or free rotation of the boom.

(c) No vehicular equipment having an obstructed view to the rear may be operated on off-highway job sites where any employee is exposed to the hazards created by the moving vehicle, unless:

(i) The vehicle has a reverse signal alarm audible above the surrounding noise level; or

(ii) The vehicle is backed up only when a designated employee signals that it is safe to do so.

(d) The operator of an electric line truck ((~~may not~~)) cannot leave their position at the controls while a load is suspended, unless the employer can demonstrate that no employee (including the operator) might be endangered.

(e) Rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler-type tractors, crawler-type loaders, and motor graders, with or without attachments, ((~~shall~~)) must have rollover protective structures that meet the requirements of chapter 296-155 WAC, Part V.

(2) Outriggers.

(a) Vehicular equipment, if provided with outriggers, ((~~shall~~)) must be operated with the outriggers extended and firmly set as necessary for the stability of the specific configuration of the equipment. Outriggers ((~~may not~~)) cannot be extended or retracted outside of clear view of the operator unless all employees are outside the range of possible equipment motion.

(b) If the work area or the terrain precludes the use of outriggers, the equipment may be operated only within its maximum load ratings for the particular configuration of the equipment without outriggers.

(3) Applied loads. Mechanical equipment used to lift or move lines or other material ((~~shall~~)) must be used within its maximum load rating and other design limitations for the conditions under which the work is being performed.

(4) Hydraulic fluids. All hydraulic fluids used for the insulated section of derrick trucks, aerial lifts, and hydraulic tools which are used on or around energized lines or equipment ((~~shall~~)) must be of the insulating type.

(5) Mechanical adjustment or repairs ((~~shall~~)) must not be attempted or performed in the field except by a person qualified to perform such work.

(6) Malfunction or needed repairs of manlift equipment ((~~shall~~)) must be reported to the employee responsible for such repairs as soon as is reasonably possible. Use of equipment which is known to be in need of repairs or is malfunctioning is prohibited when such deficiency creates an unsafe operating condition.

(7) When any aerial manlift equipment is parked for operation at the job site, the brakes ((~~shall~~)) must be set. Wheel chocks ((~~shall~~)) must be used to prevent accidental movement while parked on an incline.

(8) Employees ((~~shall~~)) must not sit or stand on the basket edge, stand on materials placed in or across the basket, or work from a ladder set inside the basket.

(9) The basket ((~~shall~~)) must not be rested on a fixed object(s) so that the weight of the boom is either totally or partially supported by the basket.

(10) Operations near energized lines or equipment.

(a) Mechanical equipment ((~~shall~~)) must be operated so that the minimum approach distances of Table 2, located in WAC 296-45-325, are maintained from exposed energized lines and equipment. However, the insulated upper portion excluding the basket/bucket of an aerial lift operated by a qualified electrical employee in the lift is exempt from this requirement.

(b) A designated employee other than the equipment operator ((~~shall~~)) must observe the approach distance to exposed lines and equipment and give timely warnings before the minimum approach distance required by subsection (10)(a) of this section is reached, unless the employer can demonstrate that the operator can accurately determine that the minimum approach distance is being maintained.

(c) If, during operation of the mechanical equipment, the equipment could become energized, the operation ((~~shall~~)) must also comply with at least one of the following:

(i) The energized lines exposed to contact ((~~shall~~)) must be covered with insulating protective material that will withstand the type of contact that might be made during the operation.

(ii) The equipment ((~~shall~~)) must be insulated for the voltage involved. The equipment ((~~shall~~)) must be positioned so that its uninsulated portions cannot approach the lines or equipment any closer than the minimum approach distances specified in Table 2, located in WAC 296-45-325.

(iii) Each employee ((~~shall~~)) must be protected from hazards that might arise from equipment contact with the energized lines. The measures used ((~~shall~~)) must ensure that employees will not be exposed to hazardous differences in potential. Unless the employer can demonstrate that the methods in use protect each employee from the hazards that might arise if the equipment contacts the energized line, the measures used ((~~shall~~)) must include all of the following techniques:

(A) Using the best available ground to minimize the time the lines remain energized;

(B) Bonding mechanical equipment together to minimize potential differences;

(C) Providing ground mats to extend areas of equipotential; and

(D) Employing insulating protective equipment or barricades to guard against any remaining hazardous potential differences.

Note: Appendix B of this chapter contains information on hazardous step and touch potentials and on methods of protecting employees from hazards resulting from such potentials.

(11) While working in aerial equipment, employees ((~~shall~~)) must wear a full body harness and a lanyard attached to the boom or basket, in a secure manner.

(12) No component of aerial devices ((~~shall~~)) must be operated from the ground without permission from the employee in the basket except in case of emergency.

(13) Operating levers or controls ((~~shall~~)) must be kept clear of tools, materials or obstructions.

(14) Employees ((~~shall~~)) must not climb into or out of the basket or platform while it is elevated or change from one basket to another on dual basket equipment, except in case of emergency or when the employees involved agree that this is the safest way to perform the work. This exception ((~~shall~~)) must not be used to circumvent safety rules.

(15) Existing safety rules governing the use of hot line tools, rubber and other protective equipment and safe work practices while performing work from poles or structures ((~~shall~~)) must also apply to work done from aerial manlift equipment.

(16) The basket ((~~shall~~)) must be kept clean and all tools not in use ((~~shall~~)) must be secured or removed.

(17) Approved warning light ((~~shall~~)) must be operating when the boom leaves the cradle. This light ((~~shall~~)) must be visible to approaching traffic when the boom is in position over any traveled area.

(18) All aerial manlift equipment ((~~shall~~)) must have both upper and lower controls (except ladder trucks need not have upper controls). The upper controls ((~~shall~~)) must not be capable of rendering the lower controls ((~~inoperative~~)) inoperable. The lower controls should be located at or near the base of the aerial structure. If the lower controls are used, the operator ((~~shall~~)) must have a view of the elevated employee(s) or there ((~~shall~~)) must be communication between the operator and the employee in the elevated aerial structure: Provided, That no employee ((~~shall~~)) must be raised, lowered, or moved into or from the elevated position in any aerial manlift equipment unless there is another employee, not in the elevated aerial structure, available at the site to operate the lower controls, except as follows:

(a) Where there is a fixed method permanently attached to or part of the equipment which will permit an employee to descend from the elevated position without lowering the elevated structure; or

(b) Where there is a system which will provide operation from the elevated position in the event of failure or malfunction of the primary system.

Note: This section ((~~shall~~)) must not be interpreted as an exception to any other rule in this chapter.

(19) Controls in aerial manlift equipment ((~~shall~~)) must be protected from accidental operation. Controls of the outriggers ((~~shall~~)) must also be protected from accidental operation. Such protection may be by guarding or equivalent means.

(20) The manufacturer's recommended maximum load limit ((~~shall~~)) must be posted at a conspicuous place near each set of controls and ((~~shall~~)) must be kept in a legible condition.

(21) The manufacturer's operator's instructional manual ((~~shall~~)) must be kept on the vehicle.

(22) Operating instructions, proper sequence and maintenance procedures prescribed by the manufacturer for operation of the equipment ((~~shall~~)) must be followed.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-385 Overhead lines. This section provides additional requirements for work performed on or near overhead lines and equipment.

(1) General.

(a) Before elevated structures and adjacent structures, such as poles or towers of the adjacent supporting poles, structures, and conductor supporting hardware, are subjected to such stresses as climbing or the installation or removal of equipment may impose, the employer ((~~shall~~)) must ascertain that the structures are capable of sustaining the additional or unbalanced stresses. If the pole or other structure cannot withstand the loads which will be imposed, it ((~~shall~~)) must be braced or otherwise supported so as to prevent failure.

Note: Appendix C of this chapter contains test methods that can be used in ascertaining whether a wood pole is capable of sustaining the forces that would be imposed by an employee climbing the pole. This section also requires the employer to ascertain that the pole can sustain all other forces that will be imposed by the work to be performed.

(b) When poles are set, moved, or removed near exposed energized overhead conductors, the pole ((~~may~~)) must not contact the conductors.

(c) When a pole is set, moved, or removed near an exposed energized overhead conductor, the employer ((~~shall~~)) must ensure that each employee wears electrical protective equipment or uses insulated devices when handling the pole and that no employee contacts the pole with uninsulated parts of their body.

(d) To protect employees from falling into holes into which poles are to be placed, the holes ((~~shall~~)) must be attended by employees or physically guarded whenever anyone is working nearby.

(2) Installing and removing overhead lines. The following provisions apply to the installation and removal of overhead conductors or cable.

(a) The employer ((~~shall~~)) must use the tension stringing method, barriers, or other equivalent measures to minimize the possibility that conductors and cables being installed or removed will contact energized power lines or equipment.

(b) When conductors are being strung in or removed, they ((~~shall~~)) must be kept under positive control to prevent accidental contact with energized circuit.

(c) The protective measures required by WAC 296-45-375 (10)(c) for mechanical equipment ((~~shall~~)) must also be provided for conductors, cables, and pulling and tensioning equipment when the conductor or cable is being installed or removed close enough to energized conductors that any of the following failures could energize the pulling or tensioning equipment or the wire or cable being installed or removed:

(i) Failure of the pulling or tensioning equipment;

(ii) Failure of the wire or cable being pulled; or

(iii) Failure of the previously installed lines or equipment.

(d) When conductors being installed or removed cross over energized conductors in excess of 600 volts, rope nets or guard structures must be installed unless provision is made to isolate or insulate the worker or the energized conductor. Where the design of the circuit-interrupting devices protecting the lines so permits, the automatic-reclosing feature of these devices must be made ((~~inoperative~~)) inoperable. In addition, the line being strung must be grounded on either side of the crossover or considered and worked as energized.

(e) Before lines are installed parallel to existing energized lines, the employer ((~~shall~~)) must make a determination of the approximate voltage to be induced in the new lines, or work ((~~shall~~)) must proceed on the assumption that the induced voltage is hazardous. Unless the employer can demonstrate that the lines being installed are not subject to the induction of a hazardous voltage or unless the lines are treated as energized, temporary protective grounds ((~~shall~~)) must be placed at such locations and arranged in such a manner that the employer can demonstrate will prevent exposure

of each employee to hazardous differences in electric potential.

Notes: • If the employer takes no precautions to protect employees from hazards associated with involuntary reactions from electric shock, a hazard exists if the induced voltage is sufficient to pass a current of 1 milliampere through a 500-ohm resistor. If the employer protects employees from injury due to involuntary reactions from electric shock, a hazard exists if the resultant current would be more than 6 milliamperes.

• Appendix B of this chapter contains guidelines for protecting employees from hazardous differences in electric potential as required by this section.

(f) Reel handling equipment, including pulling and tensioning devices, ((~~shall~~)) must be in safe operating condition and ((~~shall~~)) must be leveled and aligned.

(g) Load ratings of stringing lines, pulling lines, conductor grips, load-bearing hardware and accessories, rigging, and hoists ((~~may not~~)) cannot be exceeded.

(h) Each pull must be snubbed or dead ended at both ends before subsequent pulls.

(3) Pulling lines and accessories ((~~shall~~)) must be inspected prior to each use and replaced or repaired when damaged or when there is a reasonable basis to doubt the dependability of such lines or accessories.

(4) Conductor grips ((~~may not~~)) cannot be used on wire rope, unless the grip is specifically designed for this application.

(5) Reliable communications, through two-way radios or other equivalent means, ((~~shall~~)) must be maintained between the reel tender and the pulling rig operator.

(6) The pulling rig may only be operated when it is safe to do so.

Note: Examples of unsafe conditions include employees in locations prohibited by subsection (7) of this section, conductor and pulling line hang-ups, and slipping of the conductor grip.

(7) While the conductor or pulling line is being pulled (in motion) with a power-driven device, employees are not permitted directly under overhead operations or on the cross arm, except as necessary to guide the stringing sock or board over or through the stringing sheave.

(8) Live-line bare-hand work is prohibited.

(9) When winches, trucks, or tractors are being used to raise poles, materials, to pull in wires, to pull slack or in any other operation, there ((~~shall~~)) must be an operator at the controls unless the machinery or process is stopped.

(10) Leadworkers ((~~shall~~)) must designate an employee to give signals when required.

(11) Raising poles, towers or fixtures in the close proximity of high voltage conductors ((~~shall~~)) must be done under the supervision of a qualified electrical employee.

(12) Employees ((~~shall~~)) must not crawl over insulator strings but ((~~shall~~)) must use a platform or other approved device to work from when making dead ends or doing other work beyond strings of insulators, at such distance that they cannot reach the work from the pole or fixture. While working on the platform or other device, they ((~~shall~~)) must be secured with safety straps or a rope to prevent falling. The provision of this subsection does not apply to extra high voltage bundle conductors when the use of such equipment may produce additional hazard. Climbing over dead end assemblies is permissible only after they have been completed and pinned in the final position.

(13) Towers and structures. The following requirements apply to work performed on towers or other structures which support overhead lines.

(a) The employer ((~~shall~~)) must ensure that no employee is under a tower or structure while work is in progress, except where the employer can demonstrate that such a working position is necessary to assist employees working above.

(b) Tag lines or other similar devices ((~~shall~~)) must be used to maintain control of tower sections being raised or positioned, unless the employer can demonstrate that the use of such devices would create a greater hazard.

(c) The loadline ((~~may not~~)) cannot be detached from a member or section until the load is safely secured.

(d) No one ((~~shall be~~)) is permitted to remain in the footing while equipment is being spotted for placement.

(e) A designated employee must be utilized to determine that required clearance is maintained in moving equipment under or near energized lines.

(14) All conductors, subconductors, and overhead ground conductors must be bonded to the tower at any isolated tower where it may be necessary to complete work on the transmission line.

(15) A transmission clipping crew ((~~shall~~)) must have a minimum of two structures clipped in between the crew and the conductor being sagged.

(16) While on patrol at night and operating a motor vehicle on public roadways, there ((~~shall~~)) must be two employees, at least one of whom ((~~shall~~)) must be a qualified electrical employee. If repair to line or equipment is found to be of such nature as to require two qualified electrical employees, work ((~~shall~~)) will not proceed until additional help has been obtained provided that in cases of emergency where delay would increase the danger to life, limb, or substantial property, one employee may clear the hazard without assistance.

(17) Except during emergency restoration procedures, work ((~~shall~~)) must be discontinued when adverse weather conditions would make the work hazardous in spite of the work practices required by this section.

Note: Thunderstorms in the immediate vicinity, high winds, snow storms, and ice storms are examples of adverse weather conditions that are presumed to make this work too hazardous to perform, except under emergency conditions.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-455 Line-clearance tree-trimming operations. This section provides additional requirements for line-clearance tree-trimming operations and for equipment used in these operations.

This section does not apply to qualified electrical employees.

(1) Before an employee climbs, enters, or works around any tree, a determination ((~~shall~~)) must be made of the nominal voltage of electric power lines posing a hazard to employees. However, a determination of the maximum nominal voltage to which an employee will be exposed may be made

instead, if all lines are considered as energized at this maximum voltage.

(2) There ((~~shall~~)) must be a second line-clearance tree trimmer within normal, unassisted voice communication under any of the following conditions:

(a) If a line-clearance tree trimmer is to approach more closely than 10 feet (305 cm) any conductor or electrical apparatus energized at more than 600 volts; or

(b) If branches or limbs being removed are closer to lines energized at more than 600 volts than the distances listed in Table 2, located in WAC 296-45-325; or

(c) If roping is necessary to remove branches or limbs near such conductors or apparatus.

(3) Line-clearance tree trimmers ((~~shall~~)) must maintain the minimum approach distances from energized conductors given in Table 2, located in WAC 296-45-325.

(4) Branches that are contacting exposed energized conductors or equipment or that are within the distances specified in Table 2, located in WAC 296-45-325 may be removed only through the use of insulating equipment.

Note: A tool constructed of a material that the employer can demonstrate has insulating qualities meeting WAC 296-45-305(1) are considered as insulated under this section if the tool is clean and dry.

(5) Ladders, platforms, and aerial devices ((~~may~~)) must not be brought closer to an energized part than the distances listed in Table 2, located in WAC 296-45-325.

(6) Line-clearance tree-trimming work ((~~may not~~)) cannot be performed when adverse weather conditions make the work hazardous in spite of the work practices required by this section. Each employee performing line-clearance tree-trimming work in the aftermath of a storm or under similar emergency conditions ((~~shall~~)) must be trained in the special hazards related to this type of work.

Note: Thunderstorms in the immediate vicinity, high winds, snow storms, and ice storms are examples of adverse weather conditions that are presumed to make line-clearance tree-trimming work too hazardous to perform safely.

(7) A tree trimmer may climb out of a basket into a tree or from a tree back into the basket so long as he is properly tied into the tree during the entire maneuver and the employer can demonstrate that this is the safest way to perform the work.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-45505 Brush chippers. (1) Brush chippers ((~~shall~~)) must be equipped with a locking device in the ignition system.

(2) Access panels for maintenance and adjustment of the chipper blades and associated drive train ((~~shall~~)) must be in place and secure during operation of the equipment. Servicing and maintenance ((~~shall~~)) must be performed according to chapter 296-803 WAC, Lockout/tagout (control of hazardous energy).

(3) Brush chippers not equipped with a mechanical infeed system ((~~shall~~)) must be equipped with an infeed hopper of length sufficient to prevent employees from contacting the blades or knives of the machine during operation.

(4) Trailer chippers detached from trucks ((~~shall~~)) must be chocked or otherwise secured.

(5) Each employee in the immediate area of an operating chipper feed table ((~~shall~~)) must wear personal protective equipment as required by WAC 296-45-25505 of this chapter.

AMENDATORY SECTION (Amending WSR 01-11-038, filed 5/9/01, effective 9/1/01)

WAC 296-45-45510 Sprayers and related equipment. (1) Walking and working surfaces of sprayers and related equipment ((~~shall~~)) must be covered with slip-resistant material. If slipping hazards cannot be eliminated, slip-resistant footwear or handrails and stair rails meeting the requirements of chapter 296-24 WAC, Part J-1, and WAC 296-800-260 may be used instead of slip-resistant material.

(2) Equipment on which employees stand to spray while the vehicle is in motion ((~~shall~~)) must be equipped with guardrails around the working area. The guardrail ((~~shall~~)) must be constructed in accordance with chapter 296-24 WAC, Part J-1 and WAC 296-800-260.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-45515 Stump cutters. (1) Stump cutters ((~~shall~~)) must be equipped with enclosures or guards to protect employees.

(2) Each employee in the immediate area of stump grinding operations (including the stump cutter operator) ((~~shall~~)) must wear personal protective equipment as required by WAC 296-45-25505.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-45520 Backpack power units for use in pruning and clearing. (1) While a backpack power unit is running, no one other than the operator may be within 10 feet (305 cm) of the cutting head of a brush saw.

(2) A backpack power unit ((~~shall~~)) must be equipped with a quick shutoff switch readily accessible to the operator.

(3) Backpack power unit engines ((~~shall~~)) must be stopped for all cleaning, refueling, adjustments, and repairs to the saw or motor, except as the manufacturer's servicing procedures require otherwise.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-45525 Rope. (1) Climbing ropes ((~~shall~~)) must be used by employees working aloft in trees. These ropes ((~~shall~~)) must have a minimum diameter of 0.5 inch (1.2 cm) with a minimum breaking strength of 2300 pounds (10.2 kN). Synthetic rope ((~~shall~~)) must have elasticity of not more than 7 percent.

(2) Rope ((~~shall~~)) must be inspected before each use and, if unsafe (for example, because of damage or defect), ((~~may not~~)) cannot be used.

(3) Rope ((~~shall~~)) must be stored away from cutting edges and sharp tools. Rope contact with corrosive chemicals, gas, and oil ((~~shall~~)) must be avoided.

(4) When stored, rope ((~~shall~~)) must be coiled and piled, or ((~~shall~~)) must be suspended, so that air can circulate through the coils.

(5) Rope ends ((~~shall~~)) must be secured to prevent their unraveling.

(6) Climbing rope ((~~may~~)) must not be spliced to effect repair.

(7) A rope that is wet, that is contaminated to the extent that its insulating capacity is impaired, or that is otherwise not considered to be insulated for the voltage involved ((~~may not~~)) cannot be used near exposed energized lines.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-45530 Fall protection. Each employee ((~~shall~~)) must be tied in with a climbing rope and safety saddle when the employee is working above the ground in a tree, unless ((~~he or she is~~)) they are ascending into the tree.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-465 Communication facilities. (1) Microwave transmission. The employer ((~~shall~~)) must ensure that no employee looks into an open waveguide or antenna that is connected to an energized microwave source.

(2) If the electromagnetic radiation level within an accessible area associated with microwave communications systems exceeds the radiation protection guide given in chapter 296-62 WAC, Part J-1. The area ((~~shall~~)) must be posted with the warning symbol described in chapter 296-62 WAC, Part J-1. The lower half of the warning symbol ((~~shall~~)) must include the following statements or ones that the employer can demonstrate are equivalent:

Radiation in this area may exceed hazard limitations and special precautions are required. Obtain specific instruction before entering.

(3) When an employee works in an area where the electromagnetic radiation could exceed the radiation protection guide, the employer ((~~shall~~)) must institute measures that ensure that the employee's exposure is not greater than that permitted by that guide. Such measures may include administrative and engineering controls and personal protective equipment.

(4) Power line carrier. Power line carrier work, including work on equipment used for coupling carrier current to power line conductors, ((~~shall~~)) must be performed in accordance with the requirements of this section pertaining to work on energized lines.

Note: Additional information relating to radio frequency radiation exposure can be found in WAC 296-32-22572 and 296-32-22574.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-475 Substations. This section provides additional requirements for substations and for work performed in them.

(1) Access and working space. Sufficient access and working space ((~~shall~~)) must be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment.

Note: Guidelines for the dimensions of access and working space about electric equipment in substations are contained in American National Standard-National Electrical Safety Code, ANSI ((~~C2-2012~~)) C2-2017. Installations meeting the ANSI provisions comply with ((~~WAC 296-45-475(1)~~)) subsection (1) of this section. An installation that does not conform to this ANSI standard will, nonetheless, be considered as complying with ((~~WAC 296-45-475(1)~~)) subsection (1) of this section if the employer can demonstrate that the installation provides ready and safe access based on the following evidence:

(((~~a~~))) • That the installation conforms to the edition of ANSI C2 that was in effect at the time the installation was made;

(((~~b~~))) • That the configuration of the installation enables employees to maintain the minimum approach distances required by WAC 296-45-325(5) while they are working on exposed, energized parts; and

(((~~c~~))) • That the precautions taken when work is performed on the installation provide protection equivalent to the protection that would be provided by access and working space meeting ANSI ((~~C2-2012~~)) C2-2017.

(((~~d~~))) • Precaution must be taken to prevent accidental operation of relays or other protective devices due to jarring, vibration, or improper wiring.

(2) Draw-out-type circuit breakers. When draw-out-type circuit breakers are removed or inserted, the breaker ((~~shall~~)) must be in the open position. The control circuit ((~~shall~~)) must also be rendered ((~~inoperative~~)) inoperable, if the design of the equipment permits.

(3) Substation fences. Conductive fences around substations must be grounded. When a substation fence must be expanded or removed fence continuity must be maintained and bonding must be used to prevent electrical discontinuity. A temporary fence affording similar protection when the site is unattended, must be provided. Adequate interconnection with ground must be maintained between temporary fence and permanent fence.

(4) Guarding of rooms containing electric supply equipment.

(a) Rooms and spaces in which electric supply lines or equipment are installed ((~~shall~~)) must meet the requirements of subsection (4)(b) through (e) of this section under the following conditions:

(i) If exposed live parts operating at 50 to 150 volts to ground are located within 8 feet of the ground or other working surface inside the room or space;

(ii) If live parts operating at 151 to 600 volts and located within 8 feet of the ground or other working surface inside the room or space are guarded only by location, as permitted under subsection (5)(a) of this section; or

(iii) If live parts operating at more than 600 volts are located within the room or space, unless:

(A) The live parts are enclosed within grounded, metal-enclosed equipment whose only openings are designed so that foreign objects inserted in these openings will be deflected from energized parts; or

(B) The live parts are installed at a height above ground and any other working surface that provides protection at the voltage to which they are energized corresponding to the protection provided by an 8-foot height at 50 volts.

(b) The rooms and spaces ((~~shall~~)) must be so enclosed within fences, screens, partitions, or walls as to minimize the possibility that unqualified persons will enter.

(c) Signs warning unqualified persons to keep out ((~~shall~~)) must be displayed at entrances to the rooms and spaces.

(d) Entrances to rooms and spaces that are not under the observation of an attendant ((~~shall~~)) must be kept locked.

(e) Unqualified persons ((~~may not~~)) cannot enter the rooms or spaces while the electric supply lines or equipment are energized.

(5) Guarding of energized parts.

(a) Guards ((~~shall~~)) must be provided around all live parts operating at more than 150 volts to ground without an insulating covering, unless the location of the live parts gives sufficient horizontal or vertical or a combination of these clearances to minimize the possibility of accidental employee contact.

Note: Guidelines for the dimensions of clearance distances about electric equipment in substations are contained in American National Standard-National Electrical Safety Code, ANSI ((~~C2-2012~~)) C2-2017. Installations meeting the ANSI provisions comply with subsection (5)(a) of this section. An installation that does not conform to this ANSI standard will, nonetheless, be considered as complying with subsection (5)(a) of this section if the employer can demonstrate that the installation provides sufficient clearance based on the following evidence:

((~~(i)~~)) • That the installation conforms to the edition of ANSI C2 that was in effect at the time the installation was made;

((~~(ii)~~)) • That each employee is isolated from energized parts at the point of closest approach; and

((~~(iii)~~)) • That the precautions taken when work is performed on the installation provide protection equivalent to the protection that would be provided by horizontal and vertical clearances meeting ANSI ((~~C2-2012~~)) C2-2017.

(b) Except for fuse replacement and other necessary access by qualified electrical employees, the guarding of energized parts within a compartment ((~~shall~~)) must be maintained during operation and maintenance functions to prevent accidental contact with energized parts and to prevent tools or other equipment from being dropped on energized parts.

(c) When guards are removed from energized equipment, barriers ((~~shall~~)) must be installed around the work area to prevent employees who are not working on the equipment, but who are in the area, from contacting the exposed live parts.

(6) Substation entry.

(a) Upon entering an attended substation, each employee other than those regularly working in the station ((~~shall~~)) must report ((~~his or her~~)) their presence to the employee in charge in order to receive information on special system conditions affecting employee safety.

(b) The job briefing required by WAC 296-45-135 ((~~shall~~)) must cover such additional subjects as the location of energized equipment in or adjacent to the work area and the limits of any deenergized work area.

(c) Nonqualified persons may only approach exposed energized electrical equipment located in substations or switch yards up to the distances set forth in Table 2, located in WAC 296-45-325, when under the direct supervision of a qualified electrical employee acting as a safety watch. The safety watch will make sure that the nonqualified person does not encroach or take conductive objects closer to exposed energized parts than set forth in Table 2, located in WAC 296-45-325.

(i) Nonqualified persons must have hazard recognition training and attend a documented tailgate meeting prior to entering the substation.

(ii) The safety watch must be a qualified electrical employee as defined by WAC 296-45-035.

(iii) The safety watch will have the responsibility and authority to monitor work on a continuous basis and/or stop work until the hazard is eliminated or protected.

(iv) The safety watch will maintain a direct line of sight and voice communications with all nonqualified persons under their direct supervision. If the safety watch cannot meet these requirements, additional safety watches must be assigned or work must be stopped. Each safety watch will monitor no more than four persons.

(v) The safety watch will perform no other duties while acting as a safety watch.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48505 Interlocks and other safety devices. (1) Interlocks and other safety devices ((~~shall~~)) must be maintained in a safe, operable condition.

(2) No interlock or other safety device may be modified to defeat its function, except for test, repair, or adjustment of the device.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48510 Changing brushes. Before exciter or generator brushes are changed while the generator is in service, the exciter or generator field ((~~shall~~)) must be checked to determine whether a ground condition exists. The brushes ((~~may not~~)) cannot be changed while the generator is energized if a ground condition exists.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-48515 Access and working space. Sufficient access and working space ((~~shall~~)) must be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment.

Note: Guidelines for the dimensions of access and workspace about electric equipment in generating stations are contained in American National Standard-National Electrical Safety Code, ANSI ((~~C2-2012~~)) C2-2017. Installations meeting the ANSI provisions comply with this section. An installation that does not conform to this ANSI standard will, nonetheless, be considered as complying with this section if the employer can demonstrate that the installation provides ready and safe access based on the following evidence:

(((~~(1)~~))) • That the installation conforms to the edition of ANSI C2 that was in effect at the time the installation was made;

(((~~(2)~~))) • That the configuration of the installation enables employees to maintain the minimum approach distances required by this section while they work on exposed, energized parts; and

(((~~(3)~~))) • That the precautions taken when work is performed on the installation provide protection equivalent to the protection that would be provided by access and working space meeting ANSI ((~~C2-2012~~)) C2-2017.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48520 Guarding of rooms containing electric supply equipment. (1) Rooms and spaces in which electric supply lines or equipment are installed ((~~shall~~)) must meet the requirements of this section under the following conditions:

(a) If exposed live parts operating at 50 to 150 volts to ground are located within eight feet of the ground or other working surface inside the room or space;

(b) If live parts operating at 151 to 600 volts and located within eight feet of the ground or other working surface inside the room or space are guarded only by location, as permitted under this section; or

(c) If live parts operating at more than 600 volts are located within the room or space; unless:

(i) The live parts are enclosed within grounded, metal-enclosed equipment whose only openings are designed so that foreign objects inserted in these openings will be deflected from energized parts; or

(ii) The live parts are installed at a height above ground and any other working surface that provides protection at the voltage to which they are energized corresponding to the protection provided by an eight-foot height at 50 volts.

(2) The rooms and spaces ((~~shall~~)) must be so enclosed within fences, screens, partitions, or walls as to minimize the possibility that unqualified persons will enter.

(3) Signs warning unqualified persons to keep out ((~~shall~~)) must be displayed at entrances to the rooms and spaces.

(4) Entrances to rooms and spaces that are not under the observation of an attendant ((~~shall~~)) must be kept locked.

(5) Unqualified persons ((~~may not~~)) cannot enter the rooms or spaces while the electric supply lines or equipment are energized.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-48525 Guarding of energized parts. (1) Guards ((~~shall~~)) must be provided around all live parts operating at more than 150 volts to ground without an insulating covering, unless the location of the live parts gives sufficient horizontal or vertical or a combination of these clearances to minimize the possibility of accidental employee contact.

Note: Guidelines for the dimensions of clearance distances about electric equipment in generating stations are contained in American National Standard-National Electrical Safety Code, ANSI ((~~C2-2012~~)) C2-2017. Installations meeting the ANSI provisions comply with this section. An installation that does not conform to this ANSI standard will, nonetheless, be considered as complying with this section if the employer can demonstrate that the installation provides sufficient clearance based on the following evidence:

(((~~(a)~~))) • That the installation conforms to the edition of ANSI C2 that was in effect at the time the installation was made;

(((~~(b)~~))) • That each employee is isolated from energized parts at the point of closest approach; and

(((~~(c)~~))) • That the precautions taken when work is performed on the installation provide protection equivalent to the protection that would be provided by horizontal and vertical clearances meeting ANSI ((~~C2-2012~~)) C2-2017.

(2) Except for fuse replacement or other necessary access by qualified electrical employees, the guarding of energized parts within a compartment ((~~shall~~)) must be maintained during operation and maintenance functions to prevent accidental contact with energized parts and to prevent tools or other equipment from being dropped on energized parts.

(3) When guards are removed from energized equipment, barriers ((~~shall~~)) must be installed around the work area to prevent employees who are not working on the equipment, but who are in the area, from contacting the exposed live parts.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48530 Water or steam spaces. The following requirements apply to work in water and steam spaces associated with boilers:

(1) A designated employee ((~~shall~~)) must inspect conditions before work is permitted and after its completion. Eye protection, or full face protection if necessary, ((~~shall~~)) must be worn at all times when condenser, heater, or boiler tubes are being cleaned.

(2) Where it is necessary for employees to work near tube ends during cleaning, shielding ((~~shall~~)) must be installed at the tube ends.

AMENDATORY SECTION (Amending WSR 03-18-090, filed 9/2/03, effective 11/1/03)

WAC 296-45-48535 Chemical cleaning of boilers and pressure vessels. The following requirements apply to chemical cleaning of boilers and pressure vessels:

(1) Areas where chemical cleaning is in progress ((~~shall~~)) must be cordoned off to restrict access during cleaning. If flammable liquids, gases, or vapors or combustible materials will be used or might be produced during the cleaning process, the following requirements also apply:

(a) The area ((~~shall~~)) must be posted with signs restricting entry and warning of the hazards of fire and explosion; and

(b) Smoking, welding, and other possible ignition sources are prohibited in these restricted areas.

(2) The number of personnel in the restricted area ((~~shall~~)) must be limited to those necessary to accomplish the task safely.

(3) There ((~~shall~~)) must be ready access to water or showers for emergency use.

Note: See WAC 296-800-230, of the safety and health core rules, for requirements that apply to the water supply and to washing facilities.

(4) Employees in restricted areas ((~~shall~~)) must wear protective equipment meeting the requirements of this chapter and including, but not limited to, protective clothing, boots, goggles, and gloves.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48540 Chlorine systems. (1) Chlorine system enclosures ((~~shall~~)) must be posted with signs restricting entry and warning of the hazard to health and the hazards of fire and explosion.

Note: See chapter 296-62 WAC for requirements necessary to protect the health of employees from the effects of chlorine.

(2) Only designated employees may enter the restricted area. Additionally, the number of personnel ((~~shall~~)) must be limited to those necessary to accomplish the task safely.

(3) Emergency repair kits ((~~shall~~)) must be available near the shelter or enclosure to allow for the prompt repair of leaks in chlorine lines, equipment, or containers.

(4) Before repair procedures are started, chlorine tanks, pipes, and equipment ((~~shall~~)) must be purged with dry air and isolated from other sources of chlorine.

(5) The employer ((~~shall~~)) must ensure that chlorine is not mixed with materials that would react with the chlorine in a dangerously exothermic or other hazardous manner.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48545 Boilers. (1) Before internal furnace or ash hopper repair work is started, overhead areas ((~~shall~~)) must be inspected for possible falling objects. If the hazard of falling objects exists, overhead protection such as planking or nets ((~~shall~~)) must be provided.

(2) When opening an operating boiler door, employees ((~~shall~~)) must stand clear of the opening of the door to avoid the heat blast and gases which may escape from the boiler.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48550 Turbine generators. (1) Smoking and other ignition sources are prohibited near hydrogen or hydrogen sealing systems, and signs warning of the danger of explosion and fire ((~~shall~~)) must be posted.

(2) Excessive hydrogen makeup or abnormal loss of pressure ((~~shall~~)) must be considered as an emergency and shall be corrected immediately.

(3) A sufficient quantity of inert gas ((~~shall~~)) must be available to purge the hydrogen from the largest generator.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48555 Coal and ash handling. (1) Only designated persons may operate railroad equipment.

(2) Before a locomotive or locomotive crane is moved, a warning ((~~shall~~)) must be given to employees in the area.

(3) Employees engaged in switching or dumping cars ((~~may not~~)) cannot use their feet to line up drawheads.

(4) Drawheads and knuckles ((~~may not~~)) cannot be shifted while locomotives or cars are in motion.

(5) When a railroad car is stopped for unloading, the car ((~~shall~~)) must be secured from displacement that could endanger employees.

(6) An emergency means of stopping dump operations ((~~shall~~)) must be provided at railcar dumps.

(7) The employer ((~~shall~~)) must ensure that employees who work in coal- or ash-handling conveyor areas are trained and knowledgeable in conveyor operation and in the requirements of this section.

(8) Employees ((~~may not~~)) cannot ride a coal- or ash-handling conveyor belt at any time. Employees ((~~may~~)) must not cross over the conveyor belt, except at walkways, unless the conveyor's energy source has been deenergized and has been locked out or tagged in accordance with WAC 296-45-175.

(9) A conveyor that could cause injury when started ((~~may not~~)) cannot be started until personnel in the area are alerted by a signal or by a designated person that the conveyor is about to start.

(10) If a conveyor that could cause injury when started is automatically controlled or is controlled from a remote location, an audible device ((~~shall~~)) must be provided that sounds an alarm that will be recognized by each employee as a warning that the conveyor will start and that can be clearly heard at all points along the conveyor where personnel may be present. The warning device ((~~shall~~)) must be actuated by the device starting the conveyor and ((~~shall~~)) must continue for a period of time before the conveyor starts that is long enough to allow employees to move clear of the conveyor system. A visual warning may be used in place of the audible device if the employer can demonstrate that it will provide an equally effective warning in the particular circumstances involved.

Exception: If the employer can demonstrate that the system's function would be seriously hindered by the required time delay, warning signs may be provided in place of the audible warning device. If the system was installed before November 20, 1995, warning signs may be provided in place of the audible warning device until such time as the conveyor or its control system is rebuilt or rewired. These warning signs ((~~shall~~)) must be clear, concise, and legible and ((~~shall~~)) must indicate that conveyors and allied equipment may be started at any time, that danger exists, and that personnel must keep clear. These warning signs ((~~shall~~)) must be provided along the conveyor at areas not guarded by position or location.

(11) Remotely and automatically controlled conveyors, and conveyors that have operating stations which are not manned or which are beyond voice and visual contact from drive areas, loading areas, transfer points, and other locations on the conveyor path not guarded by location, position, or guards ((~~shall~~)) must be furnished with emergency stop buttons, pull cords, limit switches, or similar emergency stop devices. However, if the employer can demonstrate that the design, function, and operation of the conveyor do not expose an employee to hazards, an emergency stop device is not required.

(a) Emergency stop devices ((~~shall~~)) must be easily identifiable in the immediate vicinity of such locations.

(b) An emergency stop device ((~~shall~~)) must act directly on the control of the conveyor involved and ((~~may~~)) must not depend on the stopping of any other equipment.

(c) Emergency stop devices ((~~shall~~)) must be installed so that they cannot be overridden from other locations.

(12) Where coal-handling operations may produce a combustible atmosphere from fuel sources or from flammable gases or dust, sources of ignition ((~~shall~~)) must be eliminated or safely controlled to prevent ignition of the combustible atmosphere.

Note: Locations that are hazardous because of the presence of combustible dust are classified as Class II hazardous locations. See chapter 296-24 WAC, Part L.

(13) An employee ((~~may not~~)) cannot work on or beneath overhanging coal in coal bunkers, coal silos, or coal storage areas, unless the employee is protected from all hazards posed by shifting coal.

(14) An employee entering a bunker or silo to dislodge the contents ((~~shall~~)) must wear a body harness with lifeline attached. The lifeline ((~~shall~~)) must be secured to a fixed support outside the bunker and ((~~shall~~)) must be attended at all times by an employee located outside the bunker or facility.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-48560 Hydroplants and equipment. Employees working on or close to water gates, valves, intakes, forebays, flumes, or other locations where increased or decreased water flow or levels may pose a significant hazard ((~~shall~~)) must be warned and ((~~shall~~)) must vacate such dangerous areas before water flow changes are made.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52505 Capacitors. The following additional requirements apply to work on capacitors and on lines connected to capacitors.

Note: See WAC 296-45-335 through 296-45-345 for requirements pertaining to the deenergizing and grounding of capacitor installations.

(1) Before employees work on capacitors, the capacitors ((~~shall~~)) must be disconnected from energized sources and, after a wait of at least 5 minutes from the time of disconnection, short-circuited.

(2) Before the units are handled, each unit in series-parallel capacitor banks ((~~shall~~)) must be short-circuited between all terminals and the capacitor case or its rack. If the cases of capacitors are on ungrounded substation racks, the racks ((~~shall~~)) must be bonded to ground.

(3) Any line to which capacitors are connected ((~~shall~~)) must be short-circuited before it is considered deenergized.

(4) After removal from service, short circuits ((~~shall~~)) must remain on capacitors in storage until returned to service.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52510 Current transformer secondaries. The secondary of a current transformer ((~~may not~~)) cannot be opened while the transformer is energized. If the primary of the current transformer cannot be deenergized before work is performed on an instrument, a relay, or other section of a current transformer secondary circuit, the circuit ((~~shall~~)) must be bridged so that the current transformer secondary will not be opened.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52515 Series streetlighting. (1) If the open-circuit voltage exceeds 600 volts, the series streetlighting circuit ((~~shall~~)) must be worked in accordance with WAC 296-45-215 or 296-45-385, as appropriate.

(2) A series loop may only be opened after the streetlighting transformer has been deenergized and isolated from the source of supply or after the loop is bridged to avoid an open-circuit condition.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52520 Illumination. Sufficient illumination ((~~shall~~)) must be provided to enable the employee to perform the work safely.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52525 Protection against drowning. (1) Whenever an employee may be pulled or pushed or may fall into water where the danger of drowning exists, the employee

((~~shall~~)) will be provided with and ((~~shall~~)) must use U.S. Coast Guard approved personal flotation devices.

(2) Each personal flotation device ((~~shall~~)) must be maintained in safe condition and ((~~shall~~)) must be inspected frequently enough to ensure that it does not have rot, mildew, water saturation, or any other condition that could render the device unsuitable for use.

(3) An employee may cross streams or other bodies of water only if a safe means of passage, such as a bridge, is provided.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52540 Lasers. Laser equipment ((~~shall~~)) must be installed, adjusted, and operated in accordance with WAC 296-155-155.

Note: Additional information relating to lasers can be found in WAC 296-32-22576.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52545 Hydraulic fluids. Hydraulic fluids used for the insulated sections of equipment ((~~shall~~)) must provide insulation for the voltage involved.

AMENDATORY SECTION (Amending WSR 98-07-009, filed 3/6/98, effective 5/6/98)

WAC 296-45-52550 Foreign attachments and placards. Nails and unauthorized attachments should be removed before climbing above such attachments. When through bolts present a hazard to climbing, they ((~~shall~~)) must be trimmed to a safe length.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-545 Trolley maintenance, jumpering or bypassing. (1) Energized trolley wire ((~~shall~~)) must be jumpered when it is to be opened or cut.

(2) Reaching over trolley wire(s) or system(s). Qualified electrical employees ((~~shall~~)) must not reach over trolley wire(s) unless properly protected by line hose or rubber blanket.

(3) Reaching across sectional insulators. Qualified electrical employees ((~~shall~~)) must not reach across section insulator(s), insulated spacer(s) or insulated approach.

(4) Polarity on either side of sectionalizing breakers. Since the polarity on both sides of a sectionalizing insulator may be different, it is required that prior to performance of work, tests be performed with approved testing equipment to determine whether or not the polarity is the same or different on one side of the sectional insulator as compared with the other.

(5) Working on hangers. More than one truck crew ((~~shall~~)) must not work on hangers attached to the same span at the same time, without rubber protection.

(6) Workers on hangers of opposite polarity. Trolley hangers and ears of opposite polarity ((~~shall~~)) must not be worked on at the same time when trolley wire is energized.

(7) Checking electric switches. When electric switches are checked for operation, making it necessary to short circuit the contactor to each trolley wire, tools with insulated handles ((~~shall~~)) must be used.

(8) Short circuit due to use of noninsulated or conductive long handled tools. When a hazard of short circuit exists, due to use of noninsulated or conductive long handled tools, approved protective rubber equipment ((~~shall~~)) must be used as provided in this chapter.

(9) Trolley feeders. When work is to be performed on street railway trolley feeders where it is necessary for workers to work from metal or other grounded poles or fixtures or on poles or fixtures on which grounds are maintained, the feeders ((~~shall~~)) must be deenergized unless the poles or fixtures are insulated before the work is started with approved protective devices in such manner that employees cannot become grounded while working on the feeders, and employees ((~~shall~~)) must wear approved rubber gloves.

(10) Truck driver ((~~shall~~)) must remain at tower controls while workers are working on towers except when the aerial manlift equipment has been properly chocked to prevent uncontrolled movement. Tower trucks ((~~shall~~)) must be equipped with a reliable signaling device between the employees working on the tower and the truck driver.

(11) Working on truck towers. Employees ((~~shall~~)) must not stand on tower gates or railings. Work ((~~shall~~)) must not be done from plank(s) placed on tower railings.

(12) Tower truck railings. Towers ((~~shall~~)) must have standard railings and toeboards around the tower and all railings ((~~shall~~)) must be constructed of wood, fiberglass or other nonmetallic material. All railings ((~~shall~~)) must be a vertical height of not less than 36 inches or more than 42 inches from the floor of the platform to the upper surface of the top rail. Intermediate railings ((~~shall~~)) must be midway between the floor and the underside of the top rail. Tower gates ((~~shall~~)) must be so constructed as to prevent accidental opening.

(13) Tower truck decks ((~~shall~~)) must be kept clear of tools, wire and other materials and tools ((~~shall~~)) must be kept in proper storage area when not in use.

(14) Qualified electrical employees ((~~shall~~)) must not wear climbers or spurs while working on a tower truck.

AMENDATORY SECTION (Amending Order 76-38, filed 12/30/76)

WAC 296-45-675 Rotorcraft/helicopter for power distribution and transmission line installation, construction and repair—Scope. (1) These standards which include WAC 296-45-675 ((~~shall~~)) apply to work being done on or near any rotorcraft, helicopter crane, or similar device when such device is for power distribution and transmission line construction, alteration, repair or similar work. These standards include work practices when such equipment is being or is about to be used and ((~~shall~~)) must apply to the exclusion of any other standard should such other standard be in conflict with the standards contained herein.

(2) These rules ((~~shall~~)) must be interpreted where necessary to achieve the protection of employees affected by the hazards particular to the helicopter operation and ((~~shall~~)) must be so interpreted as not to conflict with any federal law or regulation governing the operation or maintenance of such craft.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67503 Definitions. ((")))Approved rubber gloves.(("))) Rubber insulating gloves used for protection of electrical workers from electric shock while working on energized conductors and equipment.

((")))Cargo hooks.(("))) The cargo hook is the FAA approved primary attachment means to the aircraft. A device attached or suspended from an aircraft which is used to connect an external load to the aircraft through direct couplings or by lead lines. This unit has both primary and secondary release mechanisms.

((")))Designated employees.(("))) Those employees selected or designated by the employer to work under or near helicopters who have first been instructed in hooking, unhooking, guiding and securing the load, including the signalperson, all of whom have been instructed in the hazards of helicopter work and who know the provisions of this section.

((")))Downwash.(("))) A down and outward air column from the main rotor system.

((")))Ground personnel or crew.(("))) Those employees who are physically and mentally capable, who are familiar with the hazards of helicopter use in power distribution and transmission line work, and who know these rules and the methods of operation.

((")))Helicopter,((")))helicopter crane,(("))) and **((")))rotorcraft.((")))** A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors. The use of the word helicopter in these rules ((~~shall~~)) also means helicopter crane, rotorcraft, or similar device.

((")))Helicopter service provider.(("))) Entity that holds the appropriate FAA operating certification and provides helicopter support services.

((")))Hooking and unhooking.(("))) The process by which an external load is either attached to or detached from the helicopter hook or sling line.

((")))Pilot in command, pilot or PIC.(("))) The person who:

• Has the final authority and responsibility for the operation and safety of the flight;

• Has been designated as pilot in command before or during the flight; and

• Holds the appropriate category, class and type rating for the conduct of the flight if applicable.

((")))Positive guide system.(("))) A system or method of installing a load into position so that the load is capable of being released from the helicopter without being otherwise secured so that the load will remain in position permanently or until otherwise secured by physical means.

((")))Rotors.(("))) That system of blades which rotates or revolves to supply lift or direction to the rotorcraft.

((")))Signalperson.(("))) That member of the ground crew that is designated by an employer to direct, signal and otherwise communicate with the operator of the helicopter.

((")))Sling line.(("))) A strap, chain, rope or the like used to securely hold something being lifted, lowered, carried or otherwise suspended.

((")))Sock line.(("))) A rope(s), cable(s) or similar line(s) that is used to pull a conductor line or other wire from a reel or to remove existing strung conductors from poles or towers.

((")))Static charge.(("))) A stationary charge of electricity.

((")))Tag line.(("))) A rope or similar device used to guide or control the direction or movement of a load.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67506 Personnel. (1) All personnel must be physically and mentally able and qualified to perform the work to which they are assigned, including being knowledgeable in these rules.

(2) There must be a sufficient number of qualified ground personnel to safely guide, secure, hook and unhook the load.

(3) No employee ((~~shall~~)) will perform or be ordered or assigned to perform any activity for which they are not trained, qualified, and competent or which they may compromise their safety or the safety of others.

Note: Applicable training requirements in WAC 296-45-065 ((~~shall~~)) must be followed.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67513 Personal protective equipment (PPE). Personal protective equipment when working on, under or in the near vicinity of helicopters:

(1) All employees ((~~shall~~)) must wear eye protection of such design as to prevent the likelihood of dust or other substances from contacting the eye(s) of employees.

(2) All employees ((~~shall~~)) must wear ANSI-approved hard hats or helmets for electrical work specific to work associated with helicopter operations that ((~~shall~~)) must be secured on the employee's head by a chinstrap or other suitable means.

(3) The employer must perform and document a hazard assessment to identify and determine the appropriate PPE for the work being performed, the location and site and/or equipment.

AMENDATORY SECTION (Amending Order 76-38, filed 12/30/76)

WAC 296-45-67515 Wearing apparel. No employee ((~~shall~~)) will wear clothing or apparel which is either designed to or in fact can reasonably be expected to flap or otherwise react in a similar fashion in the downwash or air disturbance of a helicopter(s). No employee ((~~shall~~)) must work on, under or in the near vicinity of a helicopter while wearing such apparel or clothing which flaps or moves to the extent that it presents a hazard in that it could be caught in the

moving equipment, the hoist line, or otherwise interfere with the safe performance of the work.

AMENDATORY SECTION (Amending Order 76-38, filed 12/30/76)

WAC 296-45-67517 Loose gear and objects. All loose gear, including lunch boxes, rope, cardboard, wire covers and similar items ((~~shall~~)) must be removed or secured or otherwise made fast before the helicopter is started or allowed to approach such area. In the event the gear is not secured or fastened, it ((~~shall~~)) must be removed and located outside the downwash at least 100 feet from the helicopter.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67519 Landing zones. (1) When establishing the landing zone, the following items ((~~shall~~)) must be considered:

- Size and type of helicopter;
- Suitability of the planned activity;
- Physical barriers or obstructions;
- Helicopter touchdown area and congestion in the area.

(2) All helicopter landing, loading and unloading areas ((~~shall~~)) must be maintained in a neat and orderly fashion so as to reduce the likelihood of flying materials, tripping, or other hazards attendant to the work being performed.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67521 Pilot's responsibility. (1) The pilot and employer must ensure the pilot is properly rested and fit for duty.

(2) The helicopter pilot ((~~shall~~)) must be responsible for the size, weight and manner in which loads are connected to the helicopter.

(3) No load ((~~shall~~)) will be made if the helicopter pilot believes the lift cannot safely be performed. The employer ((~~shall~~)) must make certain that the pilot of the helicopter is able to freely exercise their prerogative and judgment as to safe operation of the helicopter itself concerning size, weight and manner by which loads are connected.

(4) No employee ((~~shall~~)) will work on, under, near or in conjunction with a helicopter whose operation does not correspond with the foregoing provisions.

(5) The pilot ((~~shall~~)) must possess the appropriate ratings for the aircraft and ((~~shall~~)) must be competent to safely conduct the assigned tasks. The pilot ((~~shall~~)) must have the final authority and is solely responsible for the safe operation of the helicopter load at all times.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67522 Cargo hooks. (1) All cargo hooks ((~~shall~~)) must have a primary and secondary release mechanism designed and installed as to prevent inadvertent operation. The hooks primary and secondary release ((~~shall~~)) must be tested prior to each day's operation to determine that the release functions properly.

(2) No employee ((~~shall~~)) will be permitted to work under a hovering helicopter(s) unless the cargo hooks used comply with Federal Aviation Administration regulations governing such hooks.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67523 Hooking and unhooking loads. (1) Work performed at an elevated position and directly under hovering helicopters ((~~shall~~)) must be performed only by qualified and capable employees.

(a) Work ((~~shall~~)) must be limited to the minimum time necessary to guide, secure, hook or unhook the loads, provided that only a single point of attachment is required to secure the load.

(b) When an employee is working from the ground under hovering helicopters, the employee ((~~shall~~)) must have a safe means of ingress and egress at all times, including a readily available escape route or routes in the event of an emergency.

(2) Except as specifically permitted under WAC 296-45-675 through 296-45-67545, no other work or work-related activity ((~~shall~~)) must be permitted under hovering helicopters.

(3) Positive guide systems ((~~shall~~)) must be used for the placement of large segments of primary tower structure and ((~~shall~~)) must enable the heavy lift helicopter to temporarily secure and release the load. Bolting of or otherwise permanently securing the structures is prohibited under hovering helicopters except that in the event of an unforeseen contingency of an emergency nature which represents a substantial hazard to life or property, an employee may do such work as is necessary to preserve life or protect substantial property.

Note: This does not apply to assembly and erection of steel monopole construction.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67525 Static charge. All loads ((~~shall~~)) must be grounded or bonded with a device capable of discharging either the actual or potential static charge before ground personnel either touch or come close enough to touch the suspended load.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67527 Line stringing. (1) Weight of the external load ((~~shall~~)) must not exceed the manufacturer's load limit.

(2) Each helicopter operator utilized in line stringing ((~~shall~~)) must be authorized by the Federal Aviation Administration, Part 133, Class C Operations.

(3) All line stringing operations ((~~shall~~)) must be conducted in accordance with the following requirements:

(a) Stringing tension method ((~~shall~~)) must enable a consistent positive control of the cable, rope, or similar lines at all times during pulling operations;

(b) During all pulling operations, the helicopter pilot ((~~shall~~)) must maintain an aircraft orientation that allows the pilot to maintain constant visibility in both directions on line;

(c) No pulling operation ((~~shall~~)) must be conducted at a ground speed greater than fifteen mph;

(d) When pulling from the aircraft belly hook attachment point, a ballast weight of a minimum three hundred pounds ((~~shall~~)) must be utilized;

(e) At no time during the pulling operation ((~~shall~~)) must the load line that is attached to helicopter's belly hook attachment point exceed a thirty degree angle from vertical.

Note: Subsection (3)(d) and (e) does not apply when pulling from the helicopter's approved side pull attachment point.

(4) A helicopter ((~~shall~~)) must not pull any cable, rope, or similar line which is at any point attached to a fixed object other than the helicopter itself. Helicopters may pull a "free-wheeling" or "pay-out" of the cable, rope, or similar line so long as the end is not tied to a truck or fixed object other than the reel itself.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67529 Visibility. Employees ((~~shall~~)) must keep clear of and outside the downwash of the helicopters except as necessary to perform a permitted activity. Where reasonably practical, reduced vision of the operator and ground crew ((~~shall~~)) must be eliminated.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67531 Communication. (1) Communication must be maintained between the air crew and ground personnel at all times by a designated and qualified signalperson. There must be a constant, open line of communication using radios or head and hand signals.

(2) Signal systems must be understood by the air crew and the ground crew, including signalpersons, prior to the hoisting of any load.

(3) Signaling and maintaining communications with the pilot will be exclusive to the designated signalperson during periods of loading and unloading. The signalperson must be distinguishable from other members of the ground crew by the pilot of the aircraft. This may be by way of orange-colored gloves, vest, or other apparel.

(4) The lead worker and one top person must also have an operating transmitter and receiver.

(5) Authorized and qualified employees may come within 50 feet of the helicopter when the rotor blades are turning, but no closer, other than to enter the aircraft or to hook or unhook the load or do other essential functions. Other employee(s) ((~~shall~~)) must not come closer than 100 feet of the aircraft when it is operating.

(6) The signals between the signalperson and the operator of the helicopter ((~~shall~~)) must be those submitted to the FAA for the particular job. When head signals are to be used, the qualified worker must utilize a visually enhanced hard hat or helmet with clear markings to indicate the desired movement. Any signals other than up/down or in/out will require the use of hand signals.

(7) Should there occur a change in the hazards, method of performing the job, signals to be used, or other operating conditions during the course of any particular job, a conference ((~~shall~~)) must immediately be held at which time all affected employees and others (including signalpersons, ground workers, and pilots) will be advised of such hazards or change of operation. No employee ((~~shall~~)) will be permitted to work unless such employee and others fully understand any changes that have taken place.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67533 Helicopter operation. (1) Whenever approaching or leaving a helicopter with blades rotating, all employees must remain in full view of the pilot and remain in a crouched position while within 50 feet of the helicopter. No employee can approach the rear of the helicopter unless directly authorized and directed by the pilot of such craft. All employees when operating or working within 50 feet of the helicopter with blades turning are subject to the direction of the helicopter pilot.

(2) All materials and equipment loaded in the aircraft ((~~shall~~)) must be properly secured for flight.

(3) Long objects, such as shovels and hot sticks, ((~~shall~~)) must be carried horizontally and below the waist to avoid contact with the aircraft rotor blades.

(4) The pilot ((~~shall~~)) must ensure that all loads are safely secured to the helicopter, or in cargo baskets, and properly loaded with regard to weight and balance.

(5) Never throw anything while loading and unloading the helicopter. Thrown items may come in contact with the aircraft rotor blade, causing damage to the aircraft and possible injury to ground personnel.

(6) While in the helicopter, safety belts must remain fastened at all times except when the pilot instructs otherwise or while entering or leaving the helicopter.

(7) Smoking in the helicopter is prohibited at all times.

(8) No employee ((~~shall~~)) can ride in or work under or near a helicopter with less than twenty minutes reserve fuel.

(9) No employee ((~~shall~~)) can have sharp objects in their pocket or unsecured while sitting in or on the helicopter.

(10) No employee ((~~shall~~)) can touch any switch, knob, instrument, or other control device in the cockpit unless specifically directed by the pilot.

(11) No employee ((~~shall~~)) can obscure or otherwise obstruct the pilot's ability to visually see the instruments or flight path during flight or operation.

(12) No employee ((~~shall~~)) can attempt to slow or stop the rotorcraft blades.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67536 Helicopter work tasks. (1) Aerial hover transfer.

(a) Full body harnesses, lanyards, hardware, and attachment points must meet the requirements in ANSI Z359.1-2007.

(b) Any employees transferring from a helicopter to a structure/conductor must wear a full body harness and lanyard fixed to an approved attachment point on the helicopter, structure/conductor. An ANSI-approved device that allows the worker to be attached simultaneously to the helicopter and the structure/conductor ((~~shall~~)) must be used until the transfer is complete.

(c) Fall protection must be established and maintained one hundred percent during the entire time the employee is transferring from the helicopter to the structure/conductor.

(2) Human external cargo (HEC).

(a) The sling/vertical suspension system (human external cargo or HEC) is a vertical system suspended from the helicopter cargo hook. The sling system will comply with all governmental requirements (e.g., 14 C.F.R. Part 133, Class B or D - External Load((-))). For Class D operations the sling system will also comply with 14 C.F.R. 27.865 or 29.865.

(b) Helicopter operations involving HEC ((~~shall~~)) must incorporate the use of a secondary safety device, in addition to the helicopter's primary attachment means, to prevent the inadvertent release of the load. This device ((~~shall~~)) must remain jettison-able in accordance with Class B load requirements.

(i) All lines utilized for HEC operations ((~~shall~~)) must be dedicated for HEC and ((~~shall~~)) will not be used for transporting cargo.

(ii) HEC lines ((~~shall~~)) must not be less than 10:1 safety ratio between the rated breaking strength and the working load.

(iii) All harnesses utilized for helicopter short-haul operations must meet the ANSI Z359.1-2007 standards for class III (full body) harnesses and must be equipped with both dorsal and sternal D rings.

(iv) All suspension harnesses used for HEC must be adjusted to the user. The harness must be designed to prevent suspension trauma or equipped with an orthostatic shock relief device. Such devices must be deployed and used if an employee has been in suspension longer than five minutes.

(c) External platform and skid operation. If a platform system is used to transport crews or where a crew member performs work from the platform system and all aircraft attachment points ((~~shall~~)) must comply with applicable FAA regulations and requirements. All platform operations ((~~shall~~)) must be conducted in accordance with the 14 C.F.R. Part 133, Class A - External Load. Flight and hovering capabilities of the helicopter must not be adversely affected by the design of the platform. The platform must not affect the auto rotation and emergency capabilities of the helicopter. The platform and loads may affect the lateral and longitudinal CG weight and balance of the helicopter in flight. An engineered counter-balance system must be used if the platform exceeds the lateral CG limits of the manufacturer's specifications for the helicopter which will ensure stability.

(3) External cargo sling loads. Helicopter longline support operations (cargo operations) ((~~shall~~)) must only be performed by qualified, competent and trained personnel. All operations ((~~shall~~)) must be conducted in accordance with applicable Federal Aviation Administration regulations.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67537 Sling and rigging. (1) The pilot is responsible for the integrity of the rigging for any external load and must ensure safe delivery of the cargo by inspecting and monitoring the security of the rigging throughout the operation. Prior to operations, the pilot must check the condition and application of all rigging gear to ensure serviceability. Prior to commencing operations, determine the complete rigging requirements, including slings and taglines.

(2) All personnel involved with rigging activities must receive appropriate rigging training and show proficiency specific to helicopter operations and the work or tasks being performed.

(3) The slings used for the external load must be inspected each day before use. Slings must be inspected by an employee designated, trained and qualified as a rigger.

(4) No sling ((~~shall~~)) will be used unless it has a properly marked minimum tensile strength of five times the load which will be carried or is being carried.

(a) No sling ((~~shall~~)) will be used unless upon inspection it is determined to be in good condition and capable of the work which is to be performed and properly marked.

(b) Loads must be properly slung so that there will be no slippage or shifting of the load and so that the load will not ((~~accidently~~)) accidentally be dislodged from the helicopter.

(c) In an energized environment helicopter load lines must be comprised of nonconductive materials which are the appropriate weight, strength, and length to prevent the line from being lifted and entangled into the aircraft rotor system.

(d) Pressed sleeves, wedged eyes, or equivalent means ((~~shall~~)) must be used for all suspended loads utilizing wire rope. All eyes on synthetic line ((~~shall~~)) must be produced by the lines manufacturer or a certified splicer for the specific type of line.

AMENDATORY SECTION (Amending Order 76-38, filed 12/30/76)

WAC 296-45-67541 Fires. Open fires ((~~shall~~)) must not be permitted in any area in which said fires will be affected by the downwash of the rotors, nor ((~~shall~~)) must any employee smoke in an area subject to the downdraft of the rotor.

AMENDATORY SECTION (Amending WSR 16-10-081, filed 5/3/16, effective 7/1/16)

WAC 296-45-67545 Refueling operations. (1) Refueling of any helicopter with either aviation gasoline or Jet B (Turbine) type fuel ((~~shall~~)) must be prohibited while the engines are running.

(2) Fueling of helicopters using Jet A (Turbine-Kerosene) type fuel is allowed with engines running.

(3) All helicopter fueling must comply with the following:

(a) No unauthorized persons ((~~shall~~)) must be allowed within fifty feet of the refueling operation or fueling equipment.

(b) A minimum of one thirty-pound fire extinguisher, or a combination of same, good for class A, B and C fires, ((~~shall~~)) must be provided within one hundred feet on the upwind side of the refueling operation.

Note: For additional requirements relating to portable fire extinguishers see WAC 296-800-300.

(c) All fueling personnel ((~~shall~~)) must be thoroughly trained in the refueling operation and in the use of the available fire extinguishing equipment they may be expected to utilize.

(d) There must be no smoking, open flames, exposed flame heaters, flare pots, or open flame lights within fifty feet of the refueling area or fueling equipment. The refueling area or the fuel truck must be posted with "NO SMOKING" signs.

(e) Prior to making any fueling connection to the aircraft, the fueling equipment ((~~shall~~)) must be bonded to the aircraft by use of a cable, thus providing a conductive path to equalize the potential between the fueling equipment and the aircraft. The bond ((~~shall~~)) must be maintained until fueling connections have been removed, thus allowing separated charges that could be generated during the fueling operation to reunite. Grounding during aircraft fueling ((~~shall~~)) must not be permitted.

(f) To control spills, fuel ((~~shall~~)) must be pumped either by hand or power. Pouring or gravity flow ((~~shall~~)) must not be permitted. Self-closing nozzles or deadman controls ((~~shall~~)) must be used and ((~~shall~~)) must not be blocked open. Nozzles ((~~shall~~)) must not be dragged along the ground.

(g) In case of a spill, the fueling operation ((~~shall~~)) must be immediately stopped until such time as the person-in-charge determines that it is safe to resume the refueling operation.

(4) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, ((~~shall~~)) must also comply with subsection (3)(a) through (g) of this section.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-902 Appendix A—Working on exposed energized parts—Nonmandatory.

Note: This appendix is identical to 29 C.F.R. 1910.269 Appendix B, Working on Exposed Energized Parts((;)). However, all references to live-line barehand work have been deleted since it is prohibited in Washington state.

I. Introduction

Electric utilities design electric power generation, transmission, and distribution installations to meet National Electrical Safety Code (NESC), ANSI C2, requirements. Electric utilities also design transmission and distribution lines to limit line outages as required by system reliability criteria[1] and to withstand the maximum overvoltage's impressed on the system. Conditions such as switching surges, faults, and lightning can cause overvoltages. Electric utilities generally select insulator design and lengths and the clearances to structural parts so as to prevent outages from contaminated line insulation and during storms. Line insulator lengths and structural clearances have, over the years, come closer to the minimum approach distances used by workers. As minimum approach distances and structural clearances converge, it is increasingly important that system designers and system operating and maintenance personnel understand the concepts underlying minimum approach distances.

The information in this appendix will assist employers in complying with the minimum approach-distance requirements contained in § 1910.269(l)(3) ((~~and (q)(3)~~)). Employers must use the technical criteria and methodology presented in this appendix in establishing minimum approach distances in accordance with § 1910.269(l)(3)(i) and Table R-3 and Table R-8. This appendix provides essential background information and technical criteria for the calculation of the required minimum approach distances for live-line work on electric power generation, transmission, and distribution installations.

Unless an employer is using the maximum transient overvoltage's specified in Table R-9 for voltages over 72.5 kilovolts, the employer must use persons knowledgeable in the techniques discussed in this appendix, and competent in the field of electric transmission and distribution system design, to determine the maximum transient overvoltage.

II. General

A. *Definitions*. The following definitions from § 1910.269(x) relate to work on or near electric power generation, transmission, and distribution lines and equipment and the electrical hazards they present.

Exposed. . . . Not isolated or guarded.

Guarded. Covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats, or platforms, designed to minimize the possibility, under normal conditions, of dangerous approach or inadvertent contact by persons or objects.

Note to the definition of ((")guarded(("))): Wires that are insulated, but not otherwise protected, are not guarded.

Insulated. Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current.

Note to the definition of ((")insulated(")): When any object is said to be insulated, it is understood to be insulated for the conditions to which it normally is subjected. Otherwise, it is, for the purpose of this section, uninsulated.

Isolated. Not readily accessible to persons unless special means for access are used.

Statistical sparkover voltage. A transient overvoltage level that produces a 97.72-percent probability of sparkover (that is, two standard deviations above the voltage at which there is a 50-percent probability of sparkover).

Statistical withstand voltage. A transient overvoltage level that produces a 0.14-percent probability of sparkover (that is, three standard deviations below the voltage at which there is a 50-percent probability of sparkover).

B. *Installations energized at 50 to 300 volts*. The hazards posed by installations energized at 50 to 300 volts are the same as those found in many other workplaces. That is not to say that there is no hazard, but the complexity of electrical protection required does not compare to that required for high voltage systems. The employee must avoid contact with the exposed parts, and the protective equipment used (such as rubber insulating gloves) must provide insulation for the voltages involved.

C. *Exposed energized parts over 300 volts AC*. Paragraph (l)(3)(i) of § 1910.269 requires the employer to establish minimum approach distances no less than the distances computed by Table R-3 for AC systems so that employees can work safely without risk of sparkover.[2]

Unless the employee is using electrical protective equipment, air is the insulating medium between the employee and energized parts. The distance between the employee and an energized part must be sufficient for the air to withstand the maximum transient overvoltage that can reach the worksite under the working conditions and practices the employee is using. This distance is the minimum air insulation distance, and it is equal to the electrical component of the minimum approach distance.

Normal system design may provide or include a means (such as lightning arrestors) to control maximum anticipated transient overvoltage's, or the employer may use temporary devices (portable protective gaps) or measures (such as preventing automatic circuit breaker reclosing) to achieve the same result. Paragraph (l)(3)(ii) of § 1910.269 requires the employer to determine the maximum anticipated per-unit transient overvoltage, phase-to-ground, through an engineering analysis or assume a maximum anticipated per-unit transient overvoltage, phase-to-ground, in accordance with Table R-9, which specifies the following maximums for ac systems:

72.6 to 420.0 kilovolts-3.5 per unit

420.1 to 550.0 kilovolts-3.0 per unit

550.1 to 800.0 kilovolts-2.5 per unit

See paragraph IV.A.2, later in this appendix, for additional discussion of maximum transient overvoltages.

D. *Types of exposures*. Employees working on or near energized electric power generation, transmission, and distribution systems face two kinds of exposures: Phase-to-ground and phase-to-phase. The exposure is phase-to-ground with respect to an energized part, when the employee is at ground potential.

III. Determination of Minimum Approach Distances for AC Voltages Greater Than 300 Volts

A. *Voltages of 301 to 5,000 volts*. Test data generally forms the basis of minimum air insulation distances. The lowest voltage for which sufficient test data exists is 5,000 volts, and these data indicate that the minimum air insulation distance at that voltage is 20 millimeters (1 inch). Because the minimum air insulation distance increases with increasing voltage, and, conversely, decreases with decreasing voltage, an assumed minimum air insulation distance of 20 millimeters will protect against sparkover at voltages of 301 to 5,000 volts. Thus, 20 millimeters is the electrical component of the minimum approach distance for these voltages.

B. *Voltages of 5.1 to 72.5 kilovolts*. For voltages from 5.1 to 72.5 kilovolts, the Occupational Safety and Health Administration bases the methodology for calculating the electrical component of the minimum approach distance on Institute of Electrical and Electronic Engineers (IEEE) Standard 4-1995, *Standard Techniques for High-Voltage Testing*. Table 1 lists the critical sparkover distances from that standard as listed in IEEE Std 516-2009, *IEEE Guide for Maintenance Methods on Energized Power Lines*.

Table 1
Sparkover Distance for Rod-to-rod Gap

60 Hz Rod-to-Rod sparkover (kV peak)	Gap spacing from IEEE Std 4-1995 (cm)
25	2
36	3
46	4
53	5
60	6
70	8
79	10
86	12
95	14
104	16
112	18
120	20
143	25
167	30
192	35
218	40
243	45
270	50
322	60

Source: IEEE Std 516-2009.

To use this table to determine the electrical component of the minimum approach distance, the employer must determine the peak phase-to-ground transient overvoltage and select a gap from the table that corresponds to that voltage as a withstand voltage rather than a critical sparkover voltage. To calculate the electrical component of the minimum approach distance for voltages between 5 and 72.5 kilovolts, use the following procedure:

1. Divide the phase-to-phase voltage by the square root of 3 to convert it to a phase-to-ground voltage.

2. Multiply the phase-to-ground voltage by the square root of 2 to convert the rms value of the voltage to the peak phase-to-ground voltage.

3. Multiply the peak phase-to-ground voltage by the maximum per-unit transient overvoltage, which, for this voltage range, is 3.0, as discussed later in this appendix. This is the maximum phase-to-ground transient overvoltage, which corresponds to the withstand voltage for the relevant exposure.[3]

4. Divide the maximum phase-to-ground transient overvoltage by 0.85 to determine the corresponding critical sparkover voltage. (The critical sparkover voltage is 3 standard deviations (or 15 percent) greater than the withstand voltage.)

5. Determine the electrical component of the minimum approach distance from Table 1 through interpolation.

Table 2 illustrates how to derive the electrical component of the minimum approach distance for voltages from 5.1

to 72.5 kilovolts, before the application of any altitude correction factor, as explained later.

Table 2
Calculating the Electrical Component Of MAD 751 V To 72.5 KV

Step	Maximum system phase-to-phase voltage (kV)			
	15	**36**	**46**	**72.5**
1. Divide by √3	8.7	20.8	26.6	41.9
2. Multiply by √2	12.2	29.4	37.6	59.2
3. Multiply by 3.0	36.7	88.2	112.7	177.6
4. Divide by 0.85	43.2	103.7	132.6	208.9
5. Interpolate from Table 1	3+(7.2/10)*1	14+(8.7/9)*2	20+(12.6/23)*5	35+(16.9/26)*5
Electrical component of MAD (cm)	3.72	15.93	22.74	38.25

C. *Voltages of 72.6 to 800 kilovolts*. For voltages of 72.6 kilovolts to 800 kilovolts, this section bases the electrical component of minimum approach distances, before the application of any altitude correction factor, on the following formula:

Equation 1 - For voltages of 72.6 kV to 800 kV

$$D = 0.3048(C + a)\ V_{L\text{-}G}T$$

Where:

D = Electrical component of the minimum approach distance in air in meters;

C = A correction factor associated with the variation of gap sparkover with voltage;

a = A factor relating to the saturation of air at system voltages of 345 kilovolts or higher;[4]

$V_{L\text{-}G}$ = Maximum system line-to-ground rms voltage in kilovolts - It should be the "actual" maximum, or the normal highest voltage for the range (for example, 10 percent above the nominal voltage); and

T = Maximum transient overvoltage factor in per unit.

In Equation 1, C is 0.01: (1) For phase-to-ground exposures that the employer can demonstrate consist only of air across the approach distance (gap) and (2) for phase-to-phase exposures if the employer can demonstrate that no insulated tool spans the gap and that no large conductive object is in the gap. Otherwise, C is 0.011.

In Equation 1, the term a varies depending on whether the employee's exposure is phase-to-ground or phase-to-phase and on whether objects are in the gap. The employer must use the equations in Table 3 to calculate a. Sparkover test data with insulation spanning the gap form the basis for the equations for phase-to-ground exposures, and sparkover test data with only air in the gap form the basis for the equations for phase-to-phase exposures. The phase-to-ground equations result in slightly higher values of a, and, consequently, produce larger minimum approach distances, than the phase-to-phase equations for the same value of V_{Peak}.

Table 3
Equations for Calculating the Surge Factor, *a*

Phase-to-ground exposures			
$V_{Peak} = T_{L\text{-}G}V_{L\text{-}G}\sqrt{2}$	635 kV or less 0	635.1 to 915 kV (V_{Peak}- 635)/140,000	915.1 to 1,050 kV (V_{Peak}-645)/135,000
a			
$V_{Peak} = T_{L\text{-}G}V_{L\text{-}G}\sqrt{2}$	More than 1,050 kV		
a	(V_{Peak}-675)/125,000		
Phase-to-phase exposures [1]			
$V_{Peak} = (1.35T_{L\text{-}G} + 0.45)V_{L\text{-}G}\sqrt{2}$	630 kV or less 0	630.1 to 848 kV (V_{Peak}-630)/155,000	848.1 to 1,131 kV (V_{Peak}-633.6)/152,207
a			
$V_{Peak} = (1.35T_{L\text{-}G} + 0.45)V_{L\text{-}G}\sqrt{2}$	1,131.1 to 1,485 kV (V_{Peak}-628)/153,846	More than 1,485 kV (V_{Peak}-350.5)/203,666	
a			

[1]Use the equations for phase-to-ground exposures (with V_{Peak} for phase-to-phase exposures) unless the employer can demonstrate that no insulated tool spans the gap and that no large conductive object is in the gap.

In Equation 1, T is the maximum transient overvoltage factor in per unit. As noted earlier, § 1910.269(l)(3)(ii) requires the employer to determine the maximum anticipated per-unit transient overvoltage, phase-to-ground, through an engineering analysis or assume a maximum anticipated per-unit transient overvoltage, phase-to-ground, in accordance

with Table R-9. For phase-to-ground exposures, the employer uses this value, called T_{L-G}, as T in Equation 1. IEEE Std 516-2009 provides the following formula to calculate the phase-to-phase maximum transient overvoltage, $T_{L-L,}$ from T_{L-G}:

$$T_{L-L} = 1.35T_{L-G} + 0.45$$

For phase-to-phase exposures, the employer uses this value as T in Equation 1.

D. *Provisions for inadvertent movement*. The minimum approach distance must include an "adder" to compensate for the inadvertent movement of the worker relative to an energized part or the movement of the part relative to the worker. This "adder" must account for this possible inadvertent movement and provide the worker with a comfortable and safe zone in which to work. Employers must add the distance for inadvertent movement (called the "ergonomic component of the minimum approach distance") to the electrical component to determine the total safe minimum approach distances used in live-line work.

The Occupational Safety and Health Administration based the ergonomic component of the minimum approach distance on response time-distance analysis. This technique uses an estimate of the total response time to a hazardous incident and converts that time to the distance traveled. For example, the driver of a car takes a given amount of time to respond to a "stimulus" and stop the vehicle. The elapsed time involved results in the car's traveling some distance before coming to a complete stop. This distance depends on the speed of the car at the time the stimulus appears and the reaction time of the driver.

In the case of live-line work, the employee must first perceive that he or she is approaching the danger zone. Then, the worker responds to the danger and must decelerate and stop all motion toward the energized part. During the time it takes to stop, the employee will travel some distance. This is the distance the employer must add to the electrical component of the minimum approach distance to obtain the total safe minimum approach distance.

At voltages from 751 volts to 72.5 kilovolts,[5] the electrical component of the minimum approach distance is smaller than the ergonomic component. At 72.5 kilovolts, the electrical component is only a little more than 0.3 meters (1 foot). An ergonomic component of the minimum approach distance must provide for all the worker's unanticipated movements. At these voltages, workers generally use rubber insulating gloves; however, these gloves protect only a worker's hands and arms. Therefore, the energized object must be at a safe approach distance to protect the worker's face. In this case, 0.61 meters (2 feet) is a sufficient and practical ergonomic component of the minimum approach distance.

For voltages between 72.6 and 800 kilovolts, employees must use different work practices during energized line work. Generally, employees use live-line tools (hot sticks) to perform work on energized equipment. These tools, by design, keep the energized part at a constant distance from the employee and, thus, maintain the appropriate minimum approach distance automatically.

The location of the worker and the type of work methods the worker is using also influence the length of the ergonomic component of the minimum approach distance. In this higher voltage range, the employees use work methods that more tightly control their movements than when the workers perform work using rubber insulating gloves. The worker, therefore, is farther from the energized line or equipment and must be more precise in his or her movements just to perform the work. For these reasons, this section adopts an ergonomic component of the minimum approach distance of 0.31 m (1 foot) for voltages between 72.6 and 800 kilovolts.

Table 4 summarizes the ergonomic component of the minimum approach distance for various voltage ranges.

Table 4

Ergonomic Component of Minimum Approach Distance

Voltage range (kV)	Distance	
	m	ft
0.301 to 0.750	0.31	1.0
0.751 to 72.5	0.61	2.0
72.6 to 800	0.31	1.0

Note: The employer must add this distance to the electrical component of the minimum approach distance to obtain the full minimum approach distance.

The ergonomic component of the minimum approach distance accounts for errors in maintaining the minimum approach distance (which might occur, for example, if an employee misjudges the length of a conductive object he or she is holding), and for errors in judging the minimum approach distance. The ergonomic component also accounts for inadvertent movements by the employee, such as slipping. In contrast, the working position selected to properly maintain the minimum approach distance must account for all of an employee's reasonably likely movements and still permit the employee to adhere to the applicable minimum approach distance. (See Figure 1.) Reasonably likely movements include an employee's adjustments to tools, equipment, and working positions and all movements needed to perform the work. For example, the employee should be able to perform all of the following actions without straying into the minimum approach distance:

• Adjust his or her hardhat;

• Maneuver a tool onto an energized part with a reasonable amount of overreaching or underreaching;

• Reach for and handle tools, material, and equipment passed to him or her; and

• Adjust tools, and replace components on them, when necessary during the work procedure.

The training of qualified employees required under § 1910.269(a)(2), and the job planning and briefing required under § 1910.269(c), must address selection of a proper working position.

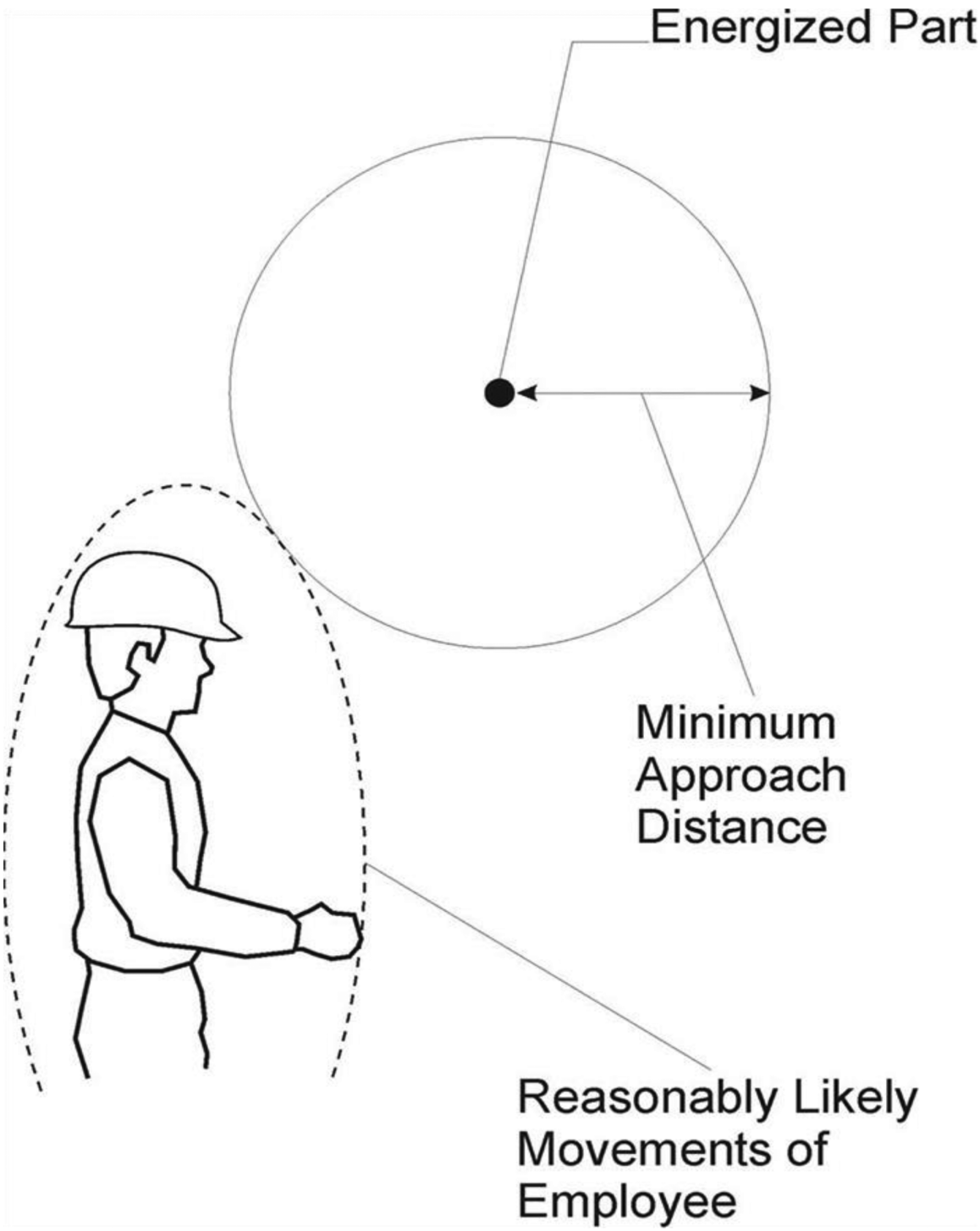


Figure 1 - Maintaining the Minimum Approach Distance

E. *Miscellaneous correction factors*. Changes in the air medium that forms the insulation influences the strength of an air gap. A brief discussion of each factor follows.

1. *Dielectric strength of air*. The dielectric strength of air in a uniform electric field at standard atmospheric conditions is approximately 3 kilovolts per millimeter.[6]

The pressure, temperature, and humidity of the air, the shape, dimensions, and separation of the electrodes, and the characteristics of the applied voltage (wave shape) affect the disruptive gradient.

2. *Atmospheric effect*. The empirically determined electrical strength of a given gap is normally applicable at standard atmospheric conditions (20°C, 101.3 kilopascals, 11 grams/cubic centimeter humidity). An increase in the density (humidity) of the air inhibits sparkover for a given air gap.

The combination of temperature and air pressure that results in the lowest gap sparkover voltage is high temperature and low pressure. This combination of conditions is not likely to occur. Low air pressure, generally associated with high humidity, causes increased electrical strength. An average air pressure generally correlates with low humidity. Hot and dry working conditions normally result in reduced electrical strength. The equations for minimum approach distances in Table R-3 assume standard atmospheric conditions.

3. *Altitude*. The reduced air pressure at high altitudes causes a reduction in the electrical strength of an air gap. An employer must increase the minimum approach distance by about 3 percent per 300 meters (1,000 feet) of increased altitude for altitudes above 900 meters (3,000 feet). Table R-5 specifies the altitude correction factor that the employer must use in calculating minimum approach distances.

IV. Determining Minimum Approach Distances

A. Factors Affecting Voltage Stress at the Worksite.

1. *System voltage (nominal)*. The nominal system voltage range determines the voltage for purposes of calculating minimum approach distances. The employer selects the range in which the nominal system voltage falls, as given in the relevant table, and uses the highest value within that range in per unit calculations.

2. *Transient overvoltages*. Operation of switches or circuit breakers, a fault on a line or circuit or on an adjacent circuit, and similar activities may generate transient overvoltages on an electrical system. Each overvoltage has an associated transient voltage wave shape. The wave shape arriving at the site and its magnitude vary considerably.

In developing requirements for minimum approach distances, the Occupational Safety and Health Administration considered the most common wave shapes and the magnitude of transient overvoltages found on electric power generation, transmission, and distribution systems. The equations in Table R-3 for minimum approach distances use per-unit maximum transient overvoltages, which are relative to the nominal maximum voltage of the system. For example, a maximum transient overvoltage value of 3.0 per unit indicates that the highest transient overvoltage is 3.0 times the nominal maximum system voltage.

3. *Typical magnitude of overvoltages*. Table 5 lists the magnitude of typical transient overvoltages.

Table 5
Magnitude of Typical Transient Overvoltages

Cause	Magnitude (per unit)
Energized 200-mile line without closing resistors	3.5
Energized 200-mile line with one-step closing resistor	2.1
Energized 200-mile line with multistep resistor	2.5
Reclosing with trapped charge one-step resistor	2.2
Opening surge with single restrike	3.0
Fault initiation unfaulted phase	2.1
Fault initiation adjacent circuit	2.5
Fault clearing	1.7 to 1.9

4. *Standard deviation-air-gap withstand*. For each air gap length under the same atmospheric conditions, there is a statistical variation in the breakdown voltage. The probability of breakdown against voltage has a normal (Gaussian) distribution. The standard deviation of this distribution varies with the wave shape, gap geometry, and atmospheric conditions. The withstand voltage of the air gap is three standard deviations (3s) below the critical sparkover voltage. (The critical sparkover voltage is the crest value of the impulse wave that, under specified conditions, causes sparkover 50 percent of the time. An impulse wave of three standard deviations below this value, that is, the withstand voltage, has a probability of sparkover of approximately 1 in 1,000.)

5. *Broken Insulators*. Tests show reductions in the insulation strength of insulator strings with broken skirts. Broken units may lose up to 70 percent of their withstand capacity. Because an employer cannot determine the insulating capability of a broken unit without testing it, the employer must consider damaged units in an insulator to have no insulating value. Additionally, the presence of a live-line tool alongside an insulator string with broken units may further reduce the overall insulating strength. The number of good units that must be present in a string for it to be "insulated" as defined by § 1910.269(x) depends on the maximum overvoltage possible at the worksite.

B. Minimum Approach Distances Based on Known, Maximum-Anticipated Per-Unit Transient Overvoltages.

1. *Determining the minimum approach distance for AC systems*. Under § 1910.269(l)(3)(ii), the employer must determine the maximum anticipated per-unit transient overvoltage, phase-to-ground, through an engineering analysis or must assume a maximum anticipated per-unit transient overvoltage, phase-to-ground, in accordance with Table R-9. When the employer conducts an engineering analysis of the system and determines that the maximum transient overvoltage is lower than specified by Table R-9, the employer must ensure that any conditions assumed in the analysis, for example, that employees block reclosing on a circuit or install portable protective gaps, are present during energized work. To ensure that these conditions are present, the employer may need to institute new livework procedures reflecting the conditions and limitations set by the engineering analysis.

2. *Calculation of reduced approach distance values*. An employer may take the following steps to reduce minimum approach distances when the maximum transient overvoltage on the system (that is, the maximum transient overvoltage without additional steps to control overvoltages) produces unacceptably large minimum approach distances:

Step 1. Determine the maximum voltage (with respect to a given nominal voltage range) for the energized part.

Step 2. Determine the technique to use to control the maximum transient overvoltage. (See paragraphs IV.C and

IV.D of this appendix.) Determine the maximum transient overvoltage that can exist at the worksite with that form of control in place and with a confidence level of 3s. This voltage is the withstand voltage for the purpose of calculating the appropriate minimum approach distance.

Step 3. Direct employees to implement procedures to ensure that the control technique is in effect during the course of the work.

Step 4. Using the new value of transient overvoltage in per unit, calculate the required minimum approach distance from Table R-3.

C. Methods of Controlling Possible Transient Overvoltage Stress Found on a System.

1. *Introduction*. There are several means of controlling overvoltages that occur on transmission systems. For example, the employer can modify the operation of circuit breakers or other switching devices to reduce switching transient overvoltages. Alternatively, the employer can hold the overvoltage to an acceptable level by installing surge arresters or portable protective gaps on the system. In addition, the employer can change the transmission system to minimize the effect of switching operations. Section 4.8 of IEEE Std 516-2009 describes various ways of controlling, and thereby reducing, maximum transient overvoltages.

2. *Operation of circuit breakers*.[7] The maximum transient overvoltage that can reach the worksite is often the result of switching on the line on which employees are working. Disabling automatic reclosing during energized line work, so that the line will not be reenergized after being opened for any reason, limits the maximum switching surge overvoltage to the larger of the opening surge or the greatest possible fault-generated surge, provided that the devices (for example, insertion resistors) are operable and will function to limit the transient overvoltage and that circuit breaker restrikes do not occur. The employer must ensure the proper functioning of insertion resistors and other overvoltage-limiting devices when the employer's engineering analysis assumes their proper operation to limit the overvoltage level. If the employer cannot disable the reclosing feature (because of system operating conditions), other methods of controlling the switching surge level may be necessary.

Transient surges on an adjacent line, particularly for double circuit construction, may cause a significant overvoltage on the line on which employees are working. The employer's engineering analysis must account for coupling to adjacent lines.

3. *Surge arresters*. The use of modern surge arresters allows a reduction in the basic impulse-insulation levels of much transmission system equipment. The primary function of early arresters was to protect the system insulation from the effects of lightning. Modern arresters not only dissipate lightning-caused transients, but may also control many other system transients caused by switching or faults.

The employer may use properly designed arresters to control transient overvoltages along a transmission line and thereby reduce the requisite length of the insulator string and possibly the maximum transient overvoltage on the line.[8]

4. *Switching restrictions*. Another form of overvoltage control involves establishing switching restrictions, whereby the employer prohibits the operation of circuit breakers until certain system conditions are present. The employer restricts switching by using a tagging system, similar to that used for a permit, except that the common term used for this activity is a "hold-off" or "restriction." These terms indicate that the restriction does not prevent operation, but only modifies the operation during the livework activity.

D. Minimum Approach Distance Based on Control of Maximum Transient Overvoltage at the Worksite.

When the employer institutes control of maximum transient overvoltage at the worksite by installing portable protective gaps, the employer may calculate the minimum approach distance as follows:

Step 1. Select the appropriate withstand voltage for the protective gap based on system requirements and an acceptable probability of gap sparkover.[9]

Step 2. Determine a gap distance that provides a withstand voltage[10] greater than or equal to the one selected in the first step.[11]

Step 3. Use 110 percent of the gap's critical sparkover voltage to determine the phase-to-ground peak voltage at gap sparkover ($V_{PPG\ Peak}$).

Step 4. Determine the maximum transient overvoltage, phase-to-ground, at the worksite from the following formula:

$$T = \frac{V_{PPG\,Peak}}{V_{L\text{-}G}\sqrt{2}}.$$

Step 5. Use this value of T[12] in the equation in Table R-3 to obtain the minimum approach distance. If the worksite is no more than 900 meters (3,000 feet) above sea level, the employer may use this value of T to determine the minimum approach distance from Table 14 through Table 21.

Note: All rounding must be to the next higher value (that is, always round up).

Sample protective gap calculations.

Problem: Employees are to perform work on a 500-kilovolt transmission line at sea level that is subject to transient overvoltages of 2.4 p.u. The maximum operating voltage of the line is 550 kilovolts. Determine the length of the protective gap that will provide the minimum practical safe approach distance. Also, determine what that minimum approach distance is:

Step 1. Calculate the smallest practical maximum transient overvoltage (1.25 times the crest phase-to-ground voltage):[13]

$$550kV \times \frac{\sqrt{2}}{\sqrt{3}} \times 1.25 = 561kV.$$

This value equals the withstand voltage of the protective gap.

Step 2. Using test data for a particular protective gap, select a gap that has a critical sparkover voltage greater than or equal to:

$$561kV \div 0.85 = 660kV$$

For example, if a protective gap with a 1.22-m (4.0-foot) spacing tested to a critical sparkover voltage of 665 kilovolts (crest), select this gap spacing.

Step 3. The phase-to-ground peak voltage at gap sparkover (VPPG Peak) is 110 percent of the value from the previous step:

$$665kV \times 1.10 = 732kV$$

This value corresponds to the withstand voltage of the electrical component of the minimum approach distance.

Step 4. Use this voltage to determine the worksite value of *T*:

$$T = \frac{732}{564} = 1.7\,p.u.$$

Step 5. Use this value of *T* in the equation in Table R-3 to obtain the minimum approach distance, or look up the minimum approach distance in Table 14 through Table 21:

$$MAD = 2.29 \text{ m } (7.6 \text{ ft}).$$

E. Location of Protective Gaps.

1. *Adjacent structures*. The employer may install the protective gap on a structure adjacent to the worksite, as this practice does not significantly reduce the protection afforded by the gap.

2. *Terminal stations*. Gaps installed at terminal stations of lines or circuits provide a level of protection; however, that level of protection may not extend throughout the length of the line to the worksite. The use of substation terminal gaps raises the possibility that separate surges could enter the line at opposite ends, each with low enough magnitude to pass the terminal gaps without sparkover. When voltage surges occur simultaneously at each end of a line and travel toward each other, the total voltage on the line at the point where they meet is the arithmetic sum of the two surges. A gap installed within 0.8 km (0.5 mile) of the worksite will protect against such intersecting waves. Engineering studies of a particular line or system may indicate that employers can adequately protect employees by installing gaps at even more distant locations. In any event, unless using the default values for *T* from Table R-9, the employer must determine *T* at the worksite.

3. *Worksite*. If the employer installs protective gaps at the worksite, the gap setting establishes the worksite impulse insulation strength. Lightning strikes as far as 6 miles from the worksite can cause a voltage surge greater than the gap withstand voltage, and a gap sparkover can occur. In addition, the gap can sparkover from overvoltages on the line that exceed the withstand voltage of the gap. Consequently, the employer must protect employees from hazards resulting from any sparkover that could occur.

F. Disabling automatic reclosing. There are two reasons to disable the automatic-reclosing feature of circuit-interrupting devices while employees are performing live-line work:

• To prevent reenergization of a circuit faulted during the work, which could create a hazard or result in more serious injuries or damage than the injuries or damage produced by the original fault;

• To prevent any transient overvoltage caused by the switching surge that would result if the circuit were reenergized.

However, due to system stability considerations, it may not always be feasible to disable the automatic-reclosing feature.

V. Minimum Approach-Distance Tables

((~~A. *Legacy tables*. Employers may use the minimum approach distances in Table 6 through Table 13 until March 31, 2015.~~

~~TABLE 6~~
~~MINIMUM APPROACH DISTANCES UNTIL DECEMBER 31, 2014~~

~~Voltage range phase to phase (kV)~~	~~Phase-to-ground exposure~~		~~Phase-to-phase exposure~~	
	~~m~~	~~ft~~	~~m~~	~~ft~~
~~0.05 to 1.0~~	~~Avoid Contact~~		~~Avoid Contact~~	
~~1.1 to 15.0~~	~~0.64~~	~~2.10~~	~~0.66~~	~~2.20~~
~~15.1 to 36.0~~	~~0.72~~	~~2.30~~	~~0.77~~	~~2.60~~
~~36.1 to 46.0~~	~~0.77~~	~~2.60~~	~~0.85~~	~~2.80~~
~~46.1 to 72.5~~	~~0.90~~	~~3.00~~	~~1.05~~	~~3.50~~
~~72.6 to 121~~	~~0.95~~	~~3.20~~	~~1.29~~	~~4.30~~
~~138 to 145~~	~~1.09~~	~~3.60~~	~~1.50~~	~~4.90~~
~~161 to 169~~	~~1.22~~	~~4.00~~	~~1.71~~	~~5.70~~
~~230 to 242~~	~~1.59~~	~~5.30~~	~~2.27~~	~~7.50~~
~~345 to 362~~	~~2.59~~	~~8.50~~	~~3.80~~	~~12.50~~
~~500 to 550~~	~~3.42~~	~~11.30~~	~~5.50~~	~~18.10~~

TABLE 6 MINIMUM APPROACH DISTANCES UNTIL DECEMBER 31, 2014				
Voltage range phase to phase (kV)	Phase-to-ground exposure		Phase-to-phase exposure	
	m	ft	m	ft
765 to 800	4.53	14.90	7.91	26.00

Note: The clear live-line tool distance must equal or exceed the values for the indicated voltage ranges.

TABLE 7 MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 72.6 TO 121.0 KV WITH OVERVOLTAGE FACTOR				
T (p.u.)	Phase-to-ground exposure		Phase-to-phase exposure	
	m	ft	m	ft
2.0	0.74	2.42	1.09	3.58
2.1	0.76	2.50	1.09	3.58
2.2	0.79	2.58	1.12	3.67
2.3	0.81	2.67	1.14	3.75
2.4	0.84	2.75	1.17	3.83
2.5	0.84	2.75	1.19	3.92
2.6	0.86	2.83	1.22	4.00
2.7	0.89	2.92	1.24	4.08
2.8	0.91	3.00	1.24	4.08
2.9	0.94	3.08	1.27	4.17
3.0	0.97	3.17	1.30	4.25

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 8 MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 121.1 TO 145.0 KV WITH OVERVOLTAGE FACTOR				
T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
2.0	0.84	2.75	1.24	4.08
2.1	0.86	2.83	1.27	4.17
2.2	0.89	2.92	1.30	4.25
2.3	0.91	3.00	1.32	4.33
2.4	0.94	3.08	1.35	4.42
2.5	0.97	3.17	1.37	4.50
2.6	0.99	3.25	1.40	4.58
2.7	1.02	3.33	1.42	4.67
2.8	1.04	3.42	1.45	4.75
2.9	1.07	3.50	1.47	4.83
3.0	1.09	3.58	1.50	4.92

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 9
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 145.1 TO 169.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-phase exposure	
	m	ft	m	ft
2.0	0.91	3.00	1.42	4.67
2.1	0.97	3.17	1.45	4.75
2.2	0.99	3.25	1.47	4.83
2.3	1.02	3.33	1.50	4.92
2.4	1.04	3.42	1.52	5.00
2.5	1.07	3.50	1.57	5.17
2.6	1.12	3.67	1.60	5.25
2.7	1.14	3.75	1.63	5.33
2.8	1.17	3.83	1.65	5.42
2.9	1.19	3.92	1.68	5.50
3.0	1.22	4.00	1.73	5.67

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 10
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 169.1 TO 242.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
2.0	1.17	3.83	1.85	6.08
2.1	1.22	4.00	1.91	6.25
2.2	1.24	4.08	1.93	6.33
2.3	1.30	4.25	1.98	6.50
2.4	1.35	4.42	2.01	6.58
2.5	1.37	4.50	2.06	6.75
2.6	1.42	4.67	2.11	6.92
2.7	1.47	4.83	2.13	7.00
2.8	1.50	4.92	2.18	7.17
2.9	1.55	5.08	2.24	7.33
3.0	1.60	5.25	2.29	7.50

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 11
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 242.1 TO 362.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
2.0	1.60	5.25	2.62	8.58
2.1	1.65	5.42	2.69	8.83
2.2	1.75	5.75	2.79	9.17

TABLE 11
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 242.1 TO 362.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
2.3	1.85	6.08	2.90	9.50
2.4	1.93	6.33	3.02	9.92
2.5	2.03	6.67	3.15	10.33
2.6	2.16	7.08	3.28	10.75
2.7	2.26	7.42	3.40	11.17
2.8	2.36	7.75	3.53	11.58
2.9	2.49	8.17	3.68	12.08
3.0	2.59	8.50	3.81	12.50

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 12
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 362.1 TO 552.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
1.5	1.83	6.00	2.24	7.33
1.6	1.98	6.50	2.67	8.75
1.7	2.13	7.00	3.10	10.17
1.8	2.31	7.58	3.53	11.58
1.9	2.46	8.08	4.01	13.17
2.0	2.67	8.75	4.52	14.83
2.1	2.84	9.33	4.75	15.58
2.2	3.02	9.92	4.98	16.33
2.3	3.20	10.50	5.23	17.17
2.4	3.43	11.25	5.51	18.08

Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)

Note 2: The distances specified in this table are the air and live-line tool distances.

TABLE 13
MINIMUM APPROACH DISTANCES UNTIL MARCH 31, 2015 552.1 TO 800.0 KV WITH OVERVOLTAGE FACTOR

T (p.u.)	Phase-to-ground exposure		Phase-to-ground exposure	
	m	ft	m	ft
1.5	2.95	9.67	3.68	12.08
1.6	3.25	10.67	4.42	14.50
1.7	3.56	11.67	5.23	17.17
1.8	3.86	12.67	6.07	19.92
1.9	4.19	13.75	6.99	22.92
2.0	4.55	14.92	7.92	26.00

~~Note 1: The employer may apply the distance specified in this table only where the employer determines the maximum anticipated per-unit transient overvoltage by engineering analysis. (Table 6 applies otherwise.)~~

~~Note 2: The distances specified in this table are the air and live-line tool distances.~~))

Note: Tables 6 through 13 have been deleted. They became obsolete on April 1, 2015. Employers may use the minimum approach distances in Table 14 through Table 21 provided that the employer follows the notes to those tables.

B. Alternative minimum approach distances. Employers may use the minimum approach distances in Table 14 through Table 21 provided that the employer follows the notes to those tables.

Table 14
AC Minimum Approach Distances-72.6 to 121.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	0.67	2.2	0.84	2.8
1.6	0.69	2.3	0.87	2.9
1.7	0.71	2.3	0.90	3.0
1.8	0.74	2.4	0.93	3.1
1.9	0.76	2.5	0.96	3.1
2.0	0.78	2.6	0.99	3.2
2.1	0.81	2.7	1.01	3.3
2.2	0.83	2.7	1.04	3.4
2.3	0.85	2.8	1.07	3.5
2.4	0.88	2.9	1.10	3.6
2.5	0.90	3.0	1.13	3.7
2.6	0.92	3.0	1.16	3.8
2.7	0.95	3.1	1.19	3.9
2.8	0.97	3.2	1.22	4.0
2.9	0.99	3.2	1.24	4.1
3.0	1.02	3.3	1.27	4.2
3.1	1.04	3.4	1.30	4.3
3.2	1.06	3.5	1.33	4.4
3.3	1.09	3.6	1.36	4.5
3.4	1.11	3.6	1.39	4.6
3.5	1.13	3.7	1.42	4.7

Table 15
AC Minimum Approach Distances-121.1 to 145.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	0.74	2.4	0.95	3.1
1.6	0.76	2.5	0.98	3.2
1.7	0.79	2.6	1.02	3.3
1.8	0.82	2.7	1.05	3.4
1.9	0.85	2.8	1.08	3.5
2.0	0.88	2.9	1.12	3.7
2.1	0.90	3.0	1.15	3.8

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
2.2	0.93	3.1	1.19	3.9
2.3	0.96	3.1	1.22	4.0
2.4	0.99	3.2	1.26	4.1
2.5	1.02	3.3	1.29	4.2
2.6	1.04	3.4	1.33	4.4
2.7	1.07	3.5	1.36	4.5
2.8	1.10	3.6	1.39	4.6
2.9	1.13	3.7	1.43	4.7
3.0	1.16	3.8	1.46	4.8
3.1	1.19	3.9	1.50	4.9
3.2	1.21	4.0	1.53	5.0
3.3	1.24	4.1	1.57	5.2
3.4	1.27	4.2	1.60	5.2
3.5	1.30	4.3	1.64	5.4

Table 16
AC Minimum Approach Distances-145.1 to 169.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	0.81	2.7	1.05	3.4
1.6	0.84	2.8	1.09	3.6
1.7	0.87	2.9	1.13	3.7
1.8	0.90	3.0	1.17	3.8
1.9	0.94	3.1	1.21	4.0
2.0	0.97	3.2	1.25	4.1
2.1	1.00	3.3	1.29	4.2
2.2	1.03	3.4	1.33	4.4
2.3	1.07	3.5	1.37	4.5
2.4	1.10	3.6	1.41	4.6
2.5	1.13	3.7	1.45	4.8
2.6	1.17	3.8	1.49	4.9
2.7	1.20	3.9	1.53	5.0
2.8	1.23	4.0	1.57	5.2
2.9	1.26	4.1	1.61	5.3
3.0	1.30	4.3	1.65	5.4
3.1	1.33	4.4	1.70	5.6
3.2	1.36	4.5	1.76	5.8
3.3	1.39	4.6	1.82	6.0
3.4	1.43	4.7	1.88	6.2
3.5	1.46	4.8	1.94	6.4

Table 17
AC Minimum Approach Distances-169.1 to 242.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	1.02	3.3	1.37	4.5
1.6	1.06	3.5	1.43	4.7
1.7	1.11	3.6	1.48	4.9
1.8	1.16	3.8	1.54	5.1
1.9	1.21	4.0	1.60	5.2
2.0	1.25	4.1	1.66	5.4
2.1	1.30	4.3	1.73	5.7
2.2	1.35	4.4	1.81	5.9
2.3	1.39	4.6	1.90	6.2
2.4	1.44	4.7	1.99	6.5
2.5	1.49	4.9	2.08	6.8
2.6	1.53	5.0	2.17	7.1
2.7	1.58	5.2	2.26	7.4
2.8	1.63	5.3	2.36	7.7
2.9	1.67	5.5	2.45	8.0
3.0	1.72	5.6	2.55	8.4
3.1	1.77	5.8	2.65	8.7
3.2	1.81	5.9	2.76	9.1
3.3	1.88	6.2	2.86	9.4
3.4	1.95	6.4	2.97	9.7
3.5	2.01	6.6	3.08	10.1

Table 18
AC Minimum Approach Distances-242.1 to 362.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	1.37	4.5	1.99	6.5
1.6	1.44	4.7	2.13	7.0
1.7	1.51	5.0	2.27	7.4
1.8	1.58	5.2	2.41	7.9
1.9	1.65	5.4	2.56	8.4
2.0	1.72	5.6	2.71	8.9
2.1	1.79	6.1	2.87	9.4
2.2	1.87	6.1	3.03	9.9
2.3	1.97	6.5	3.20	10.5
2.4	2.08	6.8	3.37	11.1
2.5	2.19	7.2	3.55	11.6
2.6	2.29	7.5	3.73	12.2
2.7	2.41	7.9	3.91	12.8

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
2.8	2.52	8.3	4.10	13.5
2.9	2.64	8.7	4.29	14.1
3.0	2.76	9.1	4.49	14.7
3.1	2.88	9.4	4.69	15.4
3.2	3.01	9.9	4.90	16.1
3.3	3.14	10.3	5.11	16.8
3.4	3.27	10.7	5.32	17.5
3.5	3.41	11.2	5.52	18.1

Table 19
AC Minimum Approach Distances-362.1 to 420.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	1.53	5.0	2.40	7.9
1.6	1.62	5.3	2.58	8.5
1.7	1.70	5.6	2.75	9.0
1.8	1.78	5.8	2.94	9.6
1.9	1.88	6.2	3.13	10.3
2.0	1.99	6.5	3.33	10.9
2.1	2.12	7.0	3.53	11.6
2.2	2.24	7.3	3.74	12.3
2.3	2.37	7.8	3.95	13.0
2.4	2.50	8.2	4.17	13.7
2.5	2.64	8.7	4.40	14.4
2.6	2.78	9.1	4.63	15.2
2.7	2.93	9.6	4.87	16.0
2.8	3.07	10.1	5.11	16.8
2.9	3.23	10.6	5.36	17.6
3.0	3.38	11.1	5.59	18.3
3.1	3.55	11.6	5.82	19.1
3.2	3.72	12.2	6.07	19.9
3.3	3.89	12.8	6.31	20.7
3.4	4.07	13.4	6.56	21.5
3.5	4.25	13.9	6.81	22.3

Table 20
AC Minimum Approach Distances-420.1 to 550.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	1.95	6.4	3.46	11.4
1.6	2.11	6.9	3.73	12.2

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.7	2.28	7.5	4.02	13.2
1.8	2.45	8.0	4.31	14.1
1.9	2.62	8.6	4.61	15.1
2.0	2.81	9.2	4.92	16.1
2.1	3.00	9.8	5.25	17.2
2.2	3.20	10.5	5.55	18.2
2.3	3.40	11.2	5.86	19.2
2.4	3.62	11.9	6.18	20.3
2.5	3.84	12.6	6.50	21.3
2.6	4.07	13.4	6.83	22.4
2.7	4.31	14.1	7.18	23.6
2.8	4.56	15.0	7.52	24.7
2.9	4.81	15.8	7.88	25.9
3.0	5.07	16.6	8.24	27.0

Table 21
AC Minimum Approach Distances-550.1 to 800.0 KV

T (p.u.)	Phase-to-ground exposure		((~~Phase-to-ground~~)) Phase-to-phase exposure	
	m	ft	m	ft
1.5	3.16	10.4	5.97	19.6
1.6	3.46	11.4	6.43	21.1
1.7	3.78	12.4	6.92	22.7
1.8	4.12	13.5	7.42	24.3
1.9	4.47	14.7	7.93	26.0
2.0	4.83	15.8	8.47	27.8
2.1	5.21	17.1	9.02	29.6
2.2	5.61	18.4	9.58	31.4
2.3	6.02	19.8	10.16	33.3
2.4	6.44	21.1	10.76	35.3
2.5	6.88	22.6	11.38	37.3

Notes to Table 14 through Table 21:

1. The employer must determine the maximum anticipated per-unit transient overvoltage, phase-to-ground, through an engineering analysis, as required by § 1910.269(l)(3)(ii), or assume a maximum anticipated per-unit transient overvoltage, phase-to-ground, in accordance with Table R-9.

2. For phase-to-phase exposures, the employer must demonstrate that no insulated tool spans the gap and that no large conductive object is in the gap.

The worksite must be at an elevation of 900 meters (3,000 feet) or less above sea level.

[1]Federal, state, and local regulatory bodies and electric utilities set reliability requirements that limit the number and duration of system outages.

[2]Sparkover is a disruptive electric discharge in which an electric arc forms and electric current passes through air.

[3]The withstand voltage is the voltage at which sparkover is not likely to occur across a specified distance. It is the voltage taken at the 3s point below the sparkover voltage, assuming that the sparkover curve follows a normal distribution.

[4]Test data demonstrates that the saturation factor is greater than 0 at peak voltages of about 630 kilovolts. Systems operating at 345 kilovolts (or maximum system voltages of 362 kilovolts) can have peak maximum transient overvoltages exceeding 630 kilovolts. Table R-3 sets equations for calculating a based on peak voltage.

[5]For voltages of 50 to 300 volts, Table R-3 specifies a minimum approach distance of "avoid contact." The minimum approach distance for this voltage range contains neither an electrical component nor an ergonomic component.

[6]For the purposes of estimating arc length, § 1910.269 generally assumes a more conservative dielectric strength of 10 kilovolts per 25.4 millimeters, consistent with assumptions made in consensus standards such as the National Electrical Safety Code (IEEE C2-2012). The more conservative value accounts for variables such as electrode shape, wave shape, and a certain amount of overvoltage.

[7]The detailed design of a circuit interrupter, such as the design of the contacts, resistor insertion, and breaker timing control, are beyond the scope of this appendix. The design of the system generally accounts for these features. This appendix only discusses features that can limit the maximum switching transient overvoltage on a system.

[8]Surge arrester application is beyond the scope of this appendix. However, if the employer installs the arrester near the worksite, the application would be similar to the protective gaps discussed in paragraph IV.D of this appendix.

[9]The employer should check the withstand voltage to ensure that it results in a probability of gap flashover that is acceptable from a system outage perspective. (In other words, a gap sparkover will produce a system outage. The employer should determine whether such an outage will impact overall system performance to an acceptable degree.) In general, the withstand voltage should be at least 1.25 times the maximum crest operating voltage.

[10]The manufacturer of the gap provides, based on test data, the critical sparkover voltage for each gap spacing (for example, a critical sparkover voltage of 665 kilovolts for a gap spacing of 1.2 meters). The withstand voltage for the gap is equal to 85 percent of its critical sparkover voltage.

[11]Switch steps 1 and 2 if the length of the protective gap is known.

[12]IEEE Std 516-2009 states that most employers add 0.2 to the calculated value of *T* as an additional safety factor.

[13]To eliminate sparkovers due to minor system disturbances, the employer should use a withstand voltage no lower than 1.25 p.u. Note that this is a practical, or operational, consideration only. It may be feasible for the employer to use lower values of withstand voltage.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-903 Appendix B—Protection from step and touch potentials—Nonmandatory.

Protection from Hazardous Differences in Electric Potential

I. ((")))Introduction((")))

Current passing through an impedance impresses voltage across that impedance. Even conductors have some, albeit low, value of impedance. Therefore, if a "grounded"[1] object, such as a crane or deenergized and grounded power line, results in a ground fault on a power line, voltage is impressed on that grounded object. The voltage impressed on the grounded object depends largely on the voltage on the line, on the impedance of the faulted conductor, and on the impedance to "true," or "absolute," ground represented by the object. If the impedance of the object causing the fault is relatively large, the voltage impressed on the object is essentially the phase-to-ground system voltage. However, even faults to grounded power lines or to well-grounded transmission towers or substation structures (which have relatively low values of impedance to ground) can result in hazardous voltages.[2] In all cases, the degree of the hazard depends on the magnitude of the current through the employee and the time of exposure. This document discusses methods of protecting workers against the possibility that grounded objects, such as cranes and other mechanical equipment, will contact energized power lines and that deenergized and grounded power lines will become accidentally energized.

II. ((")))Voltage-gradient distribution((")))

A. *Voltage-gradient distribution curve*.

Absolute, or true, ground serves as a reference and always has a voltage of 0 volts above ground potential. Because there is an impedance between a grounding electrode and absolute ground, there will be a voltage difference between the grounding electrode and absolute ground under ground-fault conditions. Voltage dissipates from the grounding electrode (or from the grounding point) and creates a ground potential gradient. The voltage decreases rapidly with increasing distance from the grounding electrode. A voltage drop associated with this dissipation of voltage is a ground potential. Figure A is a typical voltage-gradient distribution curve (assuming a uniform soil texture).

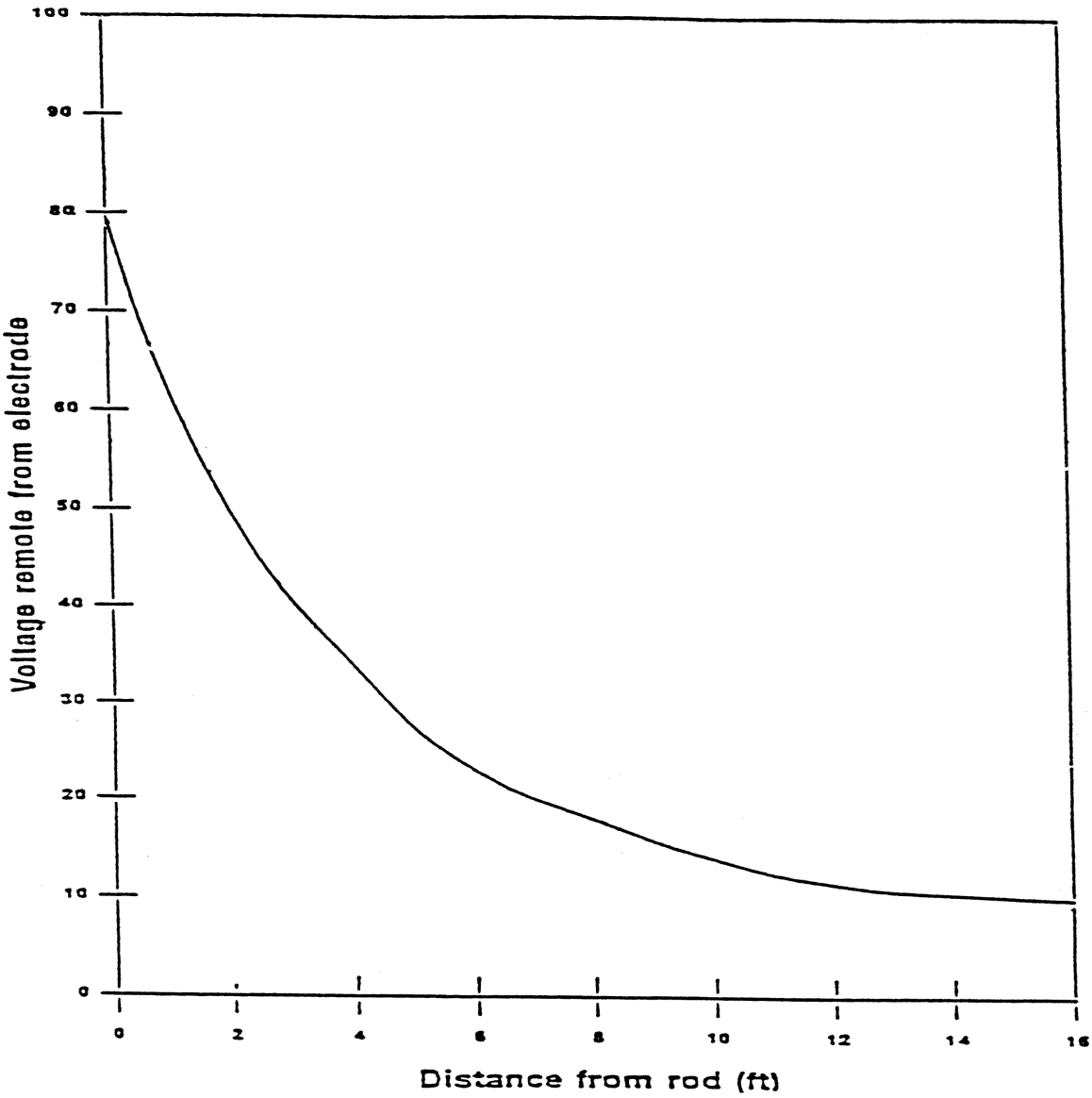


Figure A - Typical Voltage-Gradient Distribution Curve

B. *Step and touch potentials*. Figure A also shows that workers are at risk from step and touch potentials. Step potential is the voltage between the feet of a person standing near an energized grounded object (the electrode). In Figure A, the step potential is equal to the difference in voltage between two points at different distances from the electrode (where the points represent the location of each foot in relation to the electrode). A person could be at risk of injury during a fault simply by standing near the object.

Touch potential is the voltage between the energized grounded object (again, the electrode) and the feet of a person in contact with the object. In Figure A, the touch potential is equal to the difference in voltage between the electrode (which is at a distance of 0 meters) and a point some distance away from the electrode (where the point represents the location of the feet of the person in contact with the object). The touch potential could be nearly the full voltage across the grounded object if that object is grounded at a point remote from the place where the person is in contact with it. For example, a crane grounded to the system neutral and that contacts an energized line would expose any person in contact with the crane or its uninsulated load line to a touch potential nearly equal to the full fault voltage.

Figure B illustrates step and touch potentials.

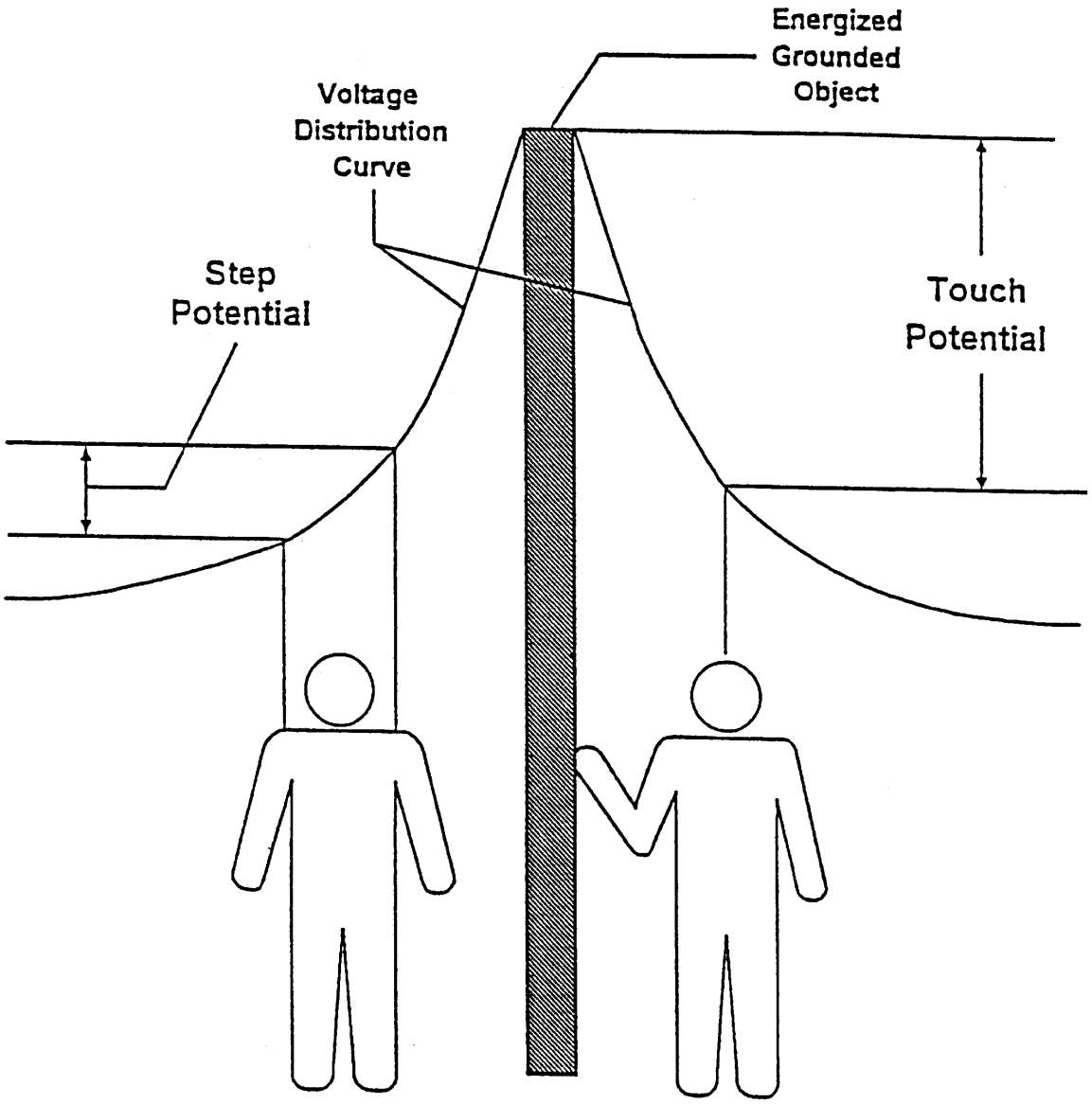


Figure B - Step and Touch Potentials

III. Protecting Workers From Hazardous Differences in Electrical Potential

A. *Definitions*. The following definitions apply to Section III of this document:

Bond. The electrical interconnection of conductive parts designed to maintain a common electric potential.

Bonding cable (bonding jumper). A cable connected to two conductive parts to bond the parts together.

Cluster bar. A terminal temporarily attached to a structure that provides a means for the attachment and bonding of grounding and bonding cables to the structure.

Ground. A conducting connection between an electric circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

Grounding cable (grounding jumper). A cable connected between a deenergized part and ground. Note that grounding cables carry fault current and bonding cables generally do not. A cable that bonds two conductive parts but carries substantial fault current (for example, a jumper connected between one phase and a grounded phase) is a grounding cable.

Ground mat (grounding grid). A temporarily or permanently installed metallic mat or grating that establishes an equipotential surface and provides connection points for attaching grounds.

B. *Analyzing the hazard*. The employer can use an engineering analysis of the power system under fault conditions to determine whether hazardous step and touch voltages will develop. The analysis should determine the voltage on all conductive objects in the work area and the amount of time the voltage will be present. Based on the analysis, the employer can select appropriate measures and protective equipment, including the measures and protective equipment outlined in Section III of this document, to protect each

employee from hazardous differences in electric potential. For example, from the analysis, the employer will know the voltage remaining on conductive objects after employees install bonding and grounding equipment and will be able to select insulating equipment with an appropriate rating, as described in paragraph III.C.2 of this document.

C. *Protecting workers on the ground.* The employer may use several methods, including equipotential zones, insulating equipment, and restricted work areas, to protect employees on the ground from hazardous differences in electrical potential.

1. An equipotential zone will protect workers within it from hazardous step and touch potentials. (See Figure C.) Equipotential zones will not, however, protect employees located either wholly or partially outside the protected area. The employer can establish an equipotential zone for workers on the ground, with respect to a grounded object, through the use of a metal mat connected to the grounded object. The employer can use a grounding grid to equalize the voltage within the grid or bond conductive objects in the immediate work area to minimize the potential between the objects and between each object and ground. (Bonding an object outside the work area can increase the touch potential to that object, however.) Section III.D of this document discusses equipotential zones for employees working on deenergized and grounded power lines.

2. Insulating equipment, such as rubber gloves, can protect employees handling grounded equipment and conductors from hazardous touch potentials. The insulating equipment must be rated for the highest voltage that can be impressed on the grounded objects under fault conditions (rather than for the full system voltage).

3. Restricting employees from areas where hazardous step or touch potentials could arise can protect employees not directly involved in performing the operation. The employer must ensure that employees on the ground in the vicinity of transmission structures are at a distance where step voltages would be insufficient to cause injury. Employees must not handle grounded conductors or equipment likely to become energized to hazardous voltages unless the employees are within an equipotential zone or protected by insulating equipment.

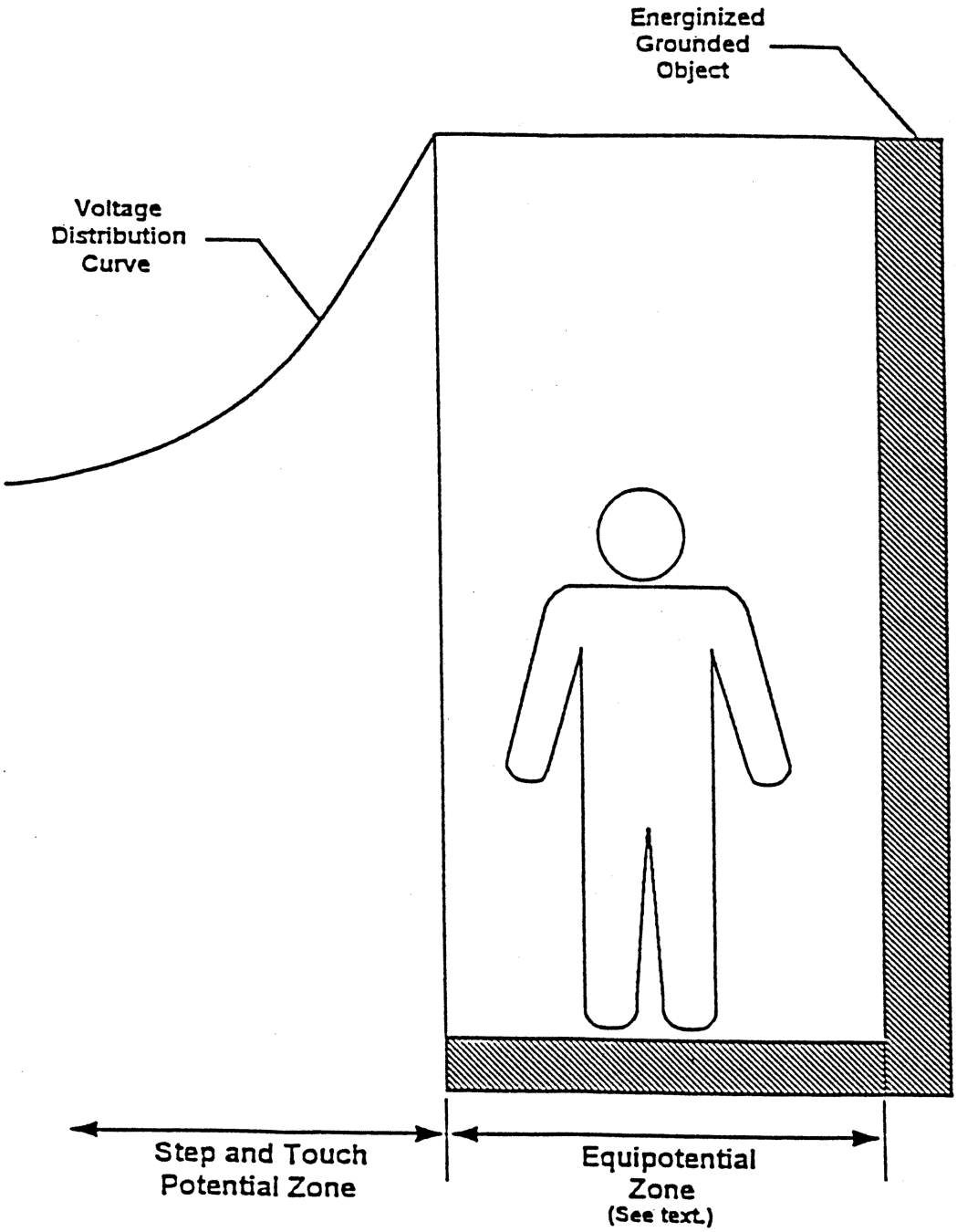


Figure C - Protection from Ground-Potential Gradients

D. *Protecting employees working on deenergized and grounded power lines*. This Section III.D of this document establishes guidelines to help employers comply with requirements in WAC 296-45-345 for using protective grounding to protect employees working on deenergized power lines. WAC 296-45-345 applies to grounding of transmission and distribution lines and equipment for the purpose of protecting workers. WAC 296-45-345(3) requires temporary protective grounds to be placed at such locations and arranged in such a manner that the employer can demonstrate will prevent exposure of each employee to hazardous differences in electric potential.[3] Sections III.D.1 and III.D.2 of this document provide guidelines that employers can use in making the demonstration required by WAC 296-45-345(3). Section III.D.1 of this document provides guidelines on how the employer can determine whether particular grounding practices expose employees to hazardous differences in electric potential. Section III.D.2 of this document describes grounding methods that the employer can use in lieu of an engineering analysis to make the demonstration required by WAC

296-45-345(3). The department will consider employers that comply with the criteria in this document as meeting WAC 296-45-345(3).

Finally, Section III.D.3 of this document discusses other safety considerations that will help the employer comply with other requirements in WAC 296-45-345. Following these guidelines will protect workers from hazards that can occur when a deenergized and grounded line becomes energized.

1. *Determining safe body current limits*. This Section III.D.1 of this document provides guidelines on how an employer can determine whether any differences in electric potential to which workers could be exposed are hazardous as part of the demonstration required by WAC 296-45-345(3).

Institute of Electrical and Electronic Engineers (IEEE) Standard 1048-2003, IEEE Guide for Protective Grounding of Power Lines, provides the following equation for determining the threshold of ventricular fibrillation when the duration of the electric shock is limited:

$$I = \frac{116}{\sqrt{t}},$$

Where *I* is the current through the worker's body, and *t* is the duration of the current in seconds. This equation represents the ventricular fibrillation threshold for 95.5 percent of the adult population with a mass of 50 kilograms (110 pounds) or more. The equation is valid for current durations between 0.0083 to 3.0 seconds.

To use this equation to set safe voltage limits in an equipotential zone around the worker, the employer will need to assume a value for the resistance of the worker's body. IEEE Std 1048-2003 states that "total body resistance is usually taken as 1000 Ω for determining . . . body current limits." However, employers should be aware that the impedance of a worker's body can be substantially less than that value. For instance, IEEE Std 1048-2003 reports a minimum hand-to-hand resistance of 610 ohms and an internal body resistance of 500 ohms. The internal resistance of the body better represents the minimum resistance of a worker's body when the skin resistance drops near zero, which occurs, for example, when there are breaks in the worker's skin, for instance, from cuts or from blisters formed as a result of the current from an electric shock, or when the worker is wet at the points of contact.

Employers may use the IEEE Std 1048-2003 equation to determine safe body current limits only if the employer protects workers from hazards associated with involuntary muscle reactions from electric shock (for example, the hazard to a worker from falling as a result of an electric shock). Moreover, the equation applies only when the duration of the electric shock is limited. If the precautions the employer takes, including those required by applicable standards, do not adequately protect employees from hazards associated with involuntary reactions from electric shock, a hazard exists if the induced voltage is sufficient to pass a current of 1 milliampere through a 500-ohm resistor. (The 500-ohm resistor represents the resistance of an employee. The 1-milliampere current is the threshold of perception.) Finally, if the employer protects employees from injury due to involuntary reactions from electric shock, but the duration of the electric shock is unlimited (that is, when the fault current at the work location will be insufficient to trip the devices protecting the circuit), a hazard exists if the resultant current would be more than 6 milliamperes (the recognized let-go threshold for workers[4]).

2. *Acceptable methods of grounding for employers that do not perform an engineering determination*. The grounding methods presented in this section of this document ensure that differences in electric potential are as low as possible and, therefore, meet WAC 296-45-345(3) without an engineering determination of the potential differences. These methods follow two principles: (i) The grounding method must ensure that the circuit opens in the fastest available clearing time, and (ii) the grounding method must ensure that the potential differences between conductive objects in the employee's work area are as low as possible.

WAC 296-45-345(3) does not require grounding methods to meet the criteria embodied in these principles. Instead, the paragraph requires that protective grounds be "placed at such locations and arranged in such a manner that the employer can demonstrate will prevent exposure of each employee to hazardous differences in electric potential." However, when the employer's grounding practices do not follow these two principles, the employer will need to perform an engineering analysis to make the demonstration required by WAC 296-45-345(3).

i. *Ensuring that the circuit opens in the fastest available clearing time*. Generally, the higher the fault current, the shorter the clearing times for the same type of fault. Therefore, to ensure the fastest available clearing time, the grounding method must maximize the fault current with a low impedance connection to ground. The employer accomplishes this objective by grounding the circuit conductors to the best ground available at the worksite. Thus, the employer must ground to a grounded system neutral conductor, if one is present. A grounded system neutral has a direct connection to the system ground at the source, resulting in an extremely low impedance to ground. In a substation, the employer may instead ground to the substation grid, which also has an extremely low impedance to the system ground and, typically, is connected to a grounded system neutral when one is present. Remote system grounds, such as pole and tower grounds, have a higher impedance to the system ground than grounded system neutrals and substation grounding grids; however, the employer may use a remote ground when lower impedance grounds are not available. In the absence of a grounded system neutral, substation grid, and remote ground, the employer may use a temporary driven ground at the worksite.

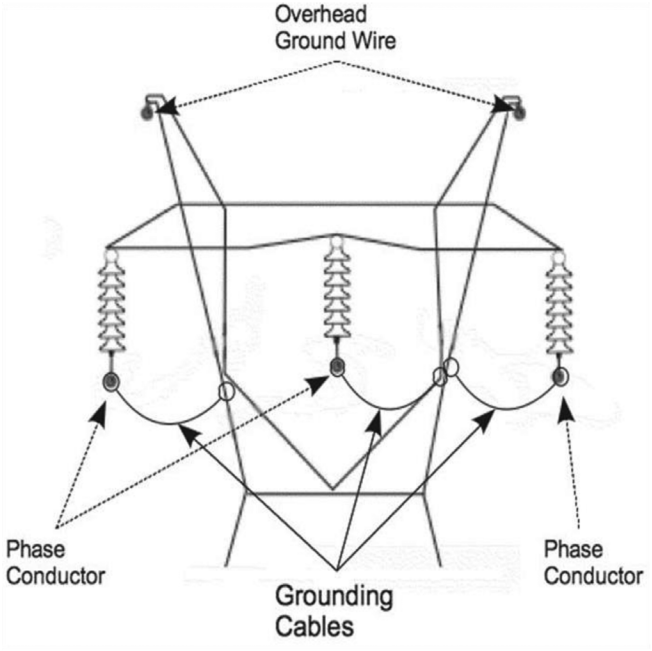
In addition, if employees are working on a three-phase system, the grounding method must short circuit all three phases. Short circuiting all phases will ensure faster clearing and lower the current through the grounding cable connecting the deenergized line to ground, thereby lowering the voltage across that cable. The short circuit need not be at the worksite; however, the employer must treat any conductor that is not grounded at the worksite as energized because the

ungrounded conductors will be energized at fault voltage during a fault.

ii. *Ensuring that the potential differences between conductive objects in the employee's work area are as low as possible*. To achieve as low a voltage as possible across any two conductive objects in the work area, the employer must bond all conductive objects in the work area. This section of this document discusses how to create a zone that minimizes differences in electric potential between conductive objects in the work area.

The employer must use bonding cables to bond conductive objects, except for metallic objects bonded through metal-to-metal contact. The employer must ensure that metal-to-metal contacts are tight and free of contamination, such as oxidation, that can increase the impedance across the connection. For example, a bolted connection between metal lattice tower members is acceptable if the connection is tight and free of corrosion and other contamination. Figure D shows how to create an equipotential zone for metal lattice towers.

Wood poles are conductive objects. The poles can absorb moisture and conduct electricity, particularly at distribution and transmission voltages. Consequently, the employer must either: (1) Provide a conductive platform, bonded to a grounding cable, on which the worker stands or (2) use cluster bars to bond wood poles to the grounding cable. The employer must ensure that employees install the cluster bar below, and close to, the worker's feet. The inner portion of the wood pole is more conductive than the outer shell, so it is important that the cluster bar be in conductive contact with a metal spike or nail that penetrates the wood to a depth greater than or equal to the depth the worker's climbing gaffs will penetrate the wood. For example, the employer could mount the cluster bar on a bare pole ground wire fastened to the pole with nails or staples that penetrate to the required depth. Alternatively, the employer may temporarily nail a conductive strap to the pole and connect the strap to the cluster bar. Figure E shows how to create an equipotential zone for wood poles.



Notes: 1. Employers must ground overhead ground wires that are within reach of the employee.

2. The grounding cable must be as short as practicable; therefore, the attachment points between the grounding cable and the tower may be different from that shown in the figure.

Figure D - Equipotential Zone for Metal Lattice Tower

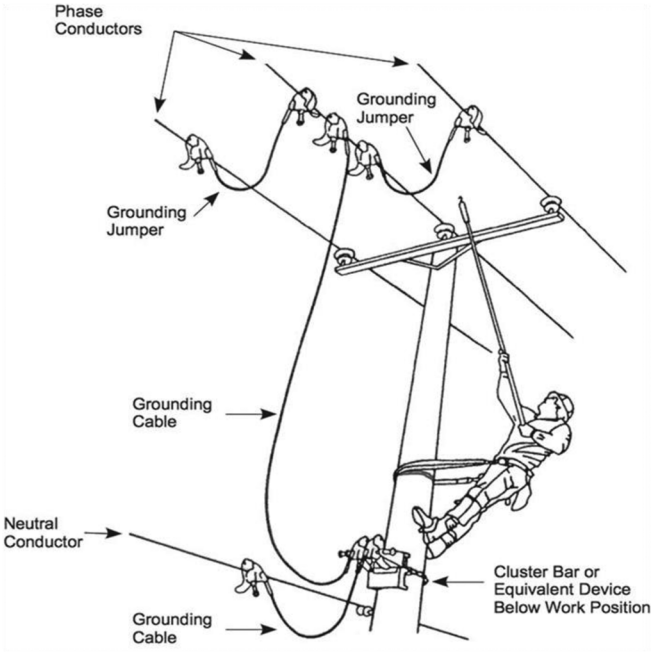


Figure E - Equipotential Grounding for Wood Poles

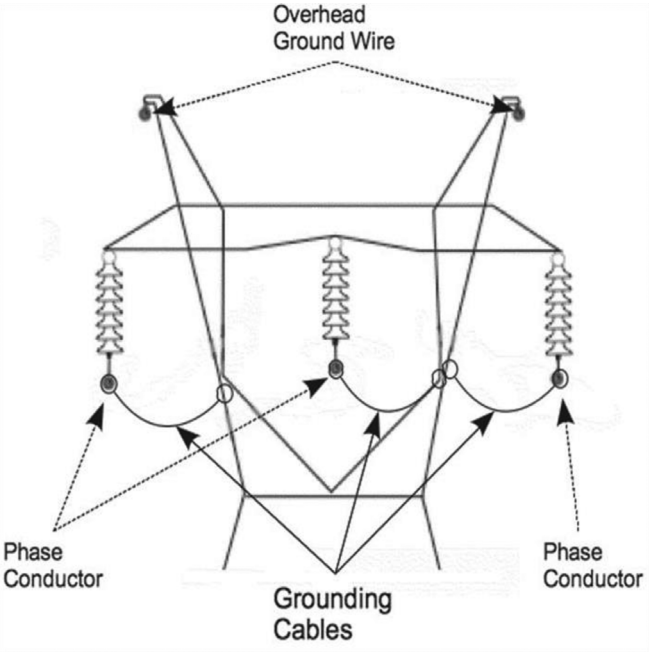


Figure reprinted with permission from Hubbell Power Systems, Inc. (Hubbell)

OSHA revised the figure from Hubbell's original.

For underground systems, employers commonly install grounds at the points of disconnection of the underground cables. These grounding points are typically remote from the manhole or underground vault where employees will be working on the cable. Workers in contact with a cable grounded at a remote location can experience hazardous potential differences if the cable becomes energized or if a fault occurs on a different, but nearby, energized cable. The fault current causes potential gradients in the earth, and a potential difference will exist between the earth where the worker is standing and the earth where the cable is grounded. Consequently, to create an equipotential zone for the worker, the employer must provide a means of connecting the deenergized cable to ground at the worksite by having the worker stand on a conductive mat bonded to the deenergized cable. If the cable is cut, the employer must install a bond across the opening in the cable or install one bond on each side of the opening to ensure that the separate cable ends are at the same potential. The employer must protect the worker from any hazardous differences in potential any time there is no bond between the mat and the cable (for example, before the worker installs the bonds).

3. *Other safety-related considerations*. To ensure that the grounding system is safe and effective, the employer should also consider the following factors:[5]

i. *Maintenance of grounding equipment*. It is essential that the employer properly maintain grounding equipment. Corrosion in the connections between grounding cables and clamps and on the clamp surface can increase the resistance of the cable, thereby increasing potential differences. In addition, the surface to which a clamp attaches, such as a conductor or tower member, must be clean and free of corrosion and oxidation to ensure a low-resistance connection. Cables must be free of damage that could reduce their current-carrying capacity so that they can carry the full fault current without failure. Each clamp must have a tight connection to the cable to ensure a low resistance and to ensure that the clamp does not separate from the cable during a fault.

ii. *Grounding cable length and movement*. The electromagnetic forces on grounding cables during a fault increase with increasing cable length. These forces can cause the cable to move violently during a fault and can be high enough to damage the cable or clamps and cause the cable to fail. In addition, flying cables can injure workers. Consequently, cable lengths should be as short as possible, and grounding cables that might carry high fault current should be in positions where the cables will not injure workers during a fault.

Notes:

[1]This document generally uses the term "grounded" only with respect to grounding that the employer intentionally installs, for example, the grounding an employer installs on a deenergized conductor. However, in this case, the term "grounded" means connected to earth, regardless of whether or not that connection is intentional.

[2]Thus, grounding systems for transmission towers and substation structures should be designed to minimize the step and touch potentials involved.

[3]The protective grounding required by WAC 296-45-345 limits to safe values the potential differences between accessible objects in each employee's work environment. Ideally, a protective grounding system would create a true equipotential zone in which every point is at the same electric potential. In practice, current passing through the grounding and bonding elements creates potential differences. If these potential differences are hazardous, the employer may not treat the zone as an equipotential zone.

[4]Electric current passing through the body has varying effects depending on the amount of the current. At the let-go threshold, the current overrides a person's control over his or her muscles. At that level, an employee grasping an object will not be able to let go of the object. The let-go threshold varies from person to person; however, the recognized value for workers is 6 milliamperes.

[5]This document only discusses factors that relate to ensuring an equipotential zone for employees. The employer must consider other factors in selecting a grounding system that is capable of conducting the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault, as required by WAC 296-45-345 (4)(a). IEEE Std 1048-2003 contains guidelines for selecting and installing grounding equipment that will meet WAC 296-45-345 (4)(a).

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-905 Appendix C—Methods of inspecting and testing wood poles—Nonmandatory.

I. ((")))Introduction((")))

When employees are to perform work on a wood pole, it is important to determine the condition of the pole before employees climb it. The weight of the employee, the weight of equipment to be installed, and other working stresses (such as the removal or retensioning of conductors) can lead to the failure of a defective pole or a pole that is not designed to

handle the additional stresses.[1] For these reasons, it is essential that, before an employee climbs a wood pole, the employer ascertains that the pole is capable of sustaining the stresses of the work. The determination that the pole is capable of sustaining these stresses includes an inspection of the condition of the pole.

Footnote[1] If the employer finds the pole to be unsafe to climb or to work from, the employer must secure the pole so that it does not fail while an employee is on it.

The employer can secure the pole by a line truck boom, by ropes or guys, or by lashing a new pole alongside it. If a new one is lashed alongside the defective pole, employees should work from the new one.

II. ((")))Inspection of wood poles((")))

A qualified electrical employee should inspect wood poles for the following conditions:[2]

Footnote[2] The presence of any of these conditions is an indication that the pole may not be safe to climb or to work from. The employee performing the inspection must be qualified to make a determination as to whether or not it is safe to perform the work without taking additional precautions.

A. General condition.

Buckling at the ground line or an unusual angle with respect to the ground may indicate that the pole has rotted or is broken.

B. Cracks.

Horizontal cracks perpendicular to the grain of the wood may weaken the pole. Vertical cracks, although not normally considered to be a sign of a defective pole, can pose a hazard to the climber, and the employee should keep his or her gaffs away from them while climbing.

C. Holes.

Hollow spots and woodpecker holes can reduce the strength of a wood pole.

D. Shell rot and decay.

Rotting and decay are cutout hazards and are possible indications of the age and internal condition of the pole.

E. Knots.

One large knot or several smaller ones at the same height on the pole may be evidence of a weak point on the pole.

F. Depth of setting.

Evidence of the existence of a former ground line substantially above the existing ground level may be an indication that the pole is no longer buried to a sufficient extent.

G. Soil conditions.

Soft, wet, or loose soil around the base of the pole may indicate that the pole will not support any change in stress.

H. Burn marks.

Burning from transformer failures or conductor faults could damage the pole so that it cannot withstand changes in mechanical stress.

III. ((")))Testing of wood poles((")))

The following tests are recognized as acceptable methods of testing wood poles:

A. Hammer test.

Rap the pole sharply with a hammer weighing about 3 pounds (1.4 kg), starting near the ground line and continuing upwards circumferentially around the pole to a height of approximately 6 feet (1.8 meters). The hammer will produce a clear sound and rebound sharply when striking sound wood. Decay pockets will be indicated by a dull sound or a less pronounced hammer rebound. Also, prod the pole as near the ground line as possible using a pole prod or a screwdriver with a blade at least 5 inches (127 millimeters) long. If substantial decay is present, the pole is unsafe.

B. Rocking test.

Apply a horizontal force to the pole and attempt to rock it back and forth in a direction perpendicular to the line. Exercise caution to avoid causing power lines to swing together. Apply the force to the pole either by pushing with a pike pole or pulling the pole with a rope. If the pole cracks during the test, it is unsafe.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-906 Appendix D—Protection from flames and electric arcs—Nonmandatory.

I. Introduction

WAC 296-45-325(13) addresses protecting employees from flames and electric arcs. This section requires employers to: (1) Assess the workplace for flame and electric-arc hazards (WAC 296-45-325 (13)(a)); (2) estimate the available heat energy from electric arcs to which employees would be exposed (WAC 296-45-325 (13)(b)); (3) ensure that employees wear clothing that will not melt, or ignite and continue to burn, when exposed to flames or the estimated heat energy (WAC 296-45-325 (13)(c)); and (4) ensure that employees wear flame-resistant clothing[1] and protective clothing and other protective equipment that has an arc rating greater than or equal to the available heat energy under certain conditions (WAC 296-45-325 (13)(d) and (e)). This appendix contains information to help employers estimate available heat energy as required by WAC 296-45-325 (13)(b), select protective clothing and other protective equipment with an arc rating suitable for the available heat energy as required by WAC 296-45-325 (13)(e), and ensure that employees do not wear flammable clothing that could lead to burn injury as addressed by WAC 296-45-325 (13)(c) and (d).

II. Assessing the Workplace for Flame and Electric-Arc Hazards

WAC 296-45-325 (13)(a) requires the employer to assess the workplace to identify employees exposed to hazards from flames or from electric arcs. This provision ensures that the employer evaluates employee exposure to flames and electric arcs so that employees who face such exposures receive the required protection. The employer must conduct an assessment for each employee who performs work on or near exposed, energized parts of electric circuits.

A. Assessment Guidelines.

Sources electric arcs. Consider possible sources of electric arcs, including:

• Energized circuit parts not guarded or insulated;

• Switching devices that produce electric arcs in normal operation;

• Sliding parts that could fault during operation (for example, rack-mounted circuit breakers); and

• Energized electric equipment that could fail (for example, electric equipment with damaged insulation or with evidence of arcing or overheating).

Exposure to flames. Identify employees exposed to hazards from flames.

Factors to consider include:

• The proximity of employees to open flames; and

• For flammable material in the work area, whether there is a reasonable likelihood that an electric arc or an open flame can ignite the material.

Probability that an electric arc will occur. Identify employees exposed to electric-arc hazards. The department will consider an employee exposed to electric-arc hazards if there is a reasonable likelihood that an electric arc will occur in the employee's work area, in other words, if the probability of such an event is higher than it is for the normal operation of enclosed equipment. Factors to consider include:

• For energized circuit parts not guarded or insulated, whether conductive objects can come too close to or fall onto the energized parts;

• For exposed, energized circuit parts, whether the employee is closer to the part than the minimum approach distance established by the employer (as permitted by WAC 296-45-325(4));

• Whether the operation of electric equipment with sliding parts that could fault during operation is part of the normal operation of the equipment or occurs during servicing or maintenance; and

• For energized electric equipment, whether there is evidence of impending failure, such as evidence of arcing or overheating.

B. Examples.

Table 1 provides task-based examples of exposure assessments.

Table 1
Example Assessments for Various Tasks

Task		Is employee exposed to flame or electric arc hazard?
Normal operation of enclosed equipment, such as closing or opening a switch.	The employer properly installs and maintains enclosed equipment, and there is no evidence of impending failure.	No.
	There is evidence of arcing or overheating	Yes.
	Parts of the equipment are loose or sticking, or the equipment otherwise exhibits signs of lack of maintenance.	Yes.
Servicing electric equipment, such as racking in a circuit breaker or replacing a switch		Yes.
Inspection of electric equipment with exposed energized parts.	The employee is not holding conductive objects and remains outside the minimum approach distance established by the employer.	No.
	The employee is holding a conductive object, such as a flashlight, that could fall or otherwise contact energized parts (irrespective of whether the employee maintains the minimum approach distance).	Yes.
	The employee is closer than the minimum approach distance established by the employer (for example, when wearing rubber insulating gloves or rubber insulating gloves and sleeves).	Yes.
Using open flames, for example, in wiping cable splice sleeves		Yes.

III. Protection Against Burn Injury

A. Estimating Available Heat Energy.

Calculation methods. WAC 296-45-325 (13)(b) provides that, for each employee exposed to an electric-arc hazard, the employer must make a reasonable estimate of the heat energy to which the employee would be exposed if an arc occurs. Table 2 lists various methods of calculating values of available heat energy from an electric circuit. The department does not endorse any of these specific methods. Each method requires the input of various parameters, such as fault current, the expected length of the electric arc, the distance from the arc to the employee, and the clearing time for the fault (that is, the time the circuit protective devices take to open the circuit and clear the fault). The employer can

precisely determine some of these parameters, such as the fault current and the clearing time, for a given system. The employer will need to estimate other parameters, such as the length of the arc and the distance between the arc and the employee, because such parameters vary widely.

Table 2
Methods of Calculating Incident Heat Energy from an Electric Arc

1. *Standard for Electrical Safety Requirements for Employee Workplaces*, NFPA 70E-2012, Annex D, "Sample Calculation of Flash Protection Boundary."
2. Doughty, T.E., Neal, T.E., and Floyd II, H.L., "Predicting Incident Energy to Better Manage the Electric Arc Hazard on 600 V Power Distribution Systems," *Record of Conference Papers IEEE IAS 45th Annual Petroleum and Chemical Industry Conference*, September 28-30, 1998.
3. *Guide for Performing Arc-Flash Hazard Calculations*, IEEE Std 1584-2002, 1584a-2004 (Amendment 1 to IEEE Std 1584-2002), and 1584b-2011 (Amendment 2: Changes to Clause 4 of IEEE Std 1584-2002).*
4. ARCPRO, a commercially available software program developed by Kinectrics, Toronto, ON, CA.

* This appendix refers to IEEE Std 1584-2002 with both amendments as IEEE Std 1584b-2011.

The amount of heat energy calculated by any of the methods is approximately inversely proportional to the square of the distance between the employee and the arc. In other words, if the employee is very close to the arc, the heat energy is very high; but if the employee is just a few more centimeters away, the heat energy drops substantially. Thus, estimating the distance from the arc to the employee is key to protecting employees.

The employer must select a method of estimating incident heat energy that provides a reasonable estimate of incident heat energy for the exposure involved. Table 3 shows which methods provide reasonable estimates for various exposures.

Table 3
Selecting a Reasonable Incident-Energy Calculation Method[1]

Incident-energy calculation method	600 V and Less [2]			601 V to 15 kV [2]			More than 15 kV		
	1Φ	3Φa	3Φb	1Φ	3Φa	3Φb	1Φ	3Φa	3Φb
NFPA 70E-2012 Annex D (Lee equation)	Y-C	Y	N	Y-C	Y-C	N	N[3]	N[3]	N[3]
Doughty, Neal, and Floyd	Y-C	Y	Y	N	N	N	N	N	N
IEEE Std 1584b-2011	Y	Y	Y	Y	Y	Y	N	N	N
ARCPRO	Y	N	N	Y	N	N	Y	Y[4]	Y[4]

Key:

1Φ: Single-phase arc in open air.

3Φa: Three-phase arc in open air.

3Φb: Three-phase arc in an enclosure (box).

Y: Acceptable; produces a reasonable estimate of incident heat energy from this type of electric arc.

N: Not acceptable; does not produce a reasonable estimate of incident heat energy from this type of electric arc.

Y-C: Acceptable; produces a reasonable, but conservative, estimate of incident heat energy from this type of electric arc.

Notes:

[1]Although the department will consider these methods reasonable for enforcement purposes when employers use the methods in accordance with this table, employers should be aware that the listed methods do not necessarily result in estimates that will provide full protection from internal faults in transformers and similar equipment or from arcs in underground manholes or vaults.

[2]At these voltages, the presumption is that the arc is three-phase unless the employer can demonstrate that only one phase is present or that the spacing of the phases is sufficient to prevent a multiphase arc from occurring.

[3]Although the department will consider this method acceptable for purposes of assessing whether incident energy exceeds 2.0 cal/cm^2, the results at voltages of more than 15 kilovolts are extremely conservative and unrealistic.

[4]The department will deem the results of this method reasonable when the employer adjusts them using the conversion factors for three-phase arcs in open air or in an enclosure, as indicated in the program's instructions.

Selecting a reasonable distance from the employee to the arc. In estimating available heat energy, the employer must make some reasonable assumptions about how far the employee will be from the electric arc. Table 4 lists reasonable distances from the employee to the electric arc. The distances in Table 4 are consistent with national consensus standards, such as the Institute of Electrical and Electronic Engineers' *National Electrical Safety Code*, ANSI/IEEE ((~~C2-2012~~)) C2-2017, and *IEEE Guide for Performing Arc-Flash Hazard Calculations*, IEEE Std 1584b-2011. The employer is free to use other reasonable distances, but

must consider equipment enclosure size and the working distance to the employee in selecting a distance from the employee to the arc. The department will consider a distance reasonable when the employer bases it on equipment size and working distance.

Table 4
Selecting a Reasonable Distance from the Employee to the Electric Arc

Class of equipment	Single-phase arc mm (inches)	Three-phase arc mm (inches)
Cable	*NA	455 (18)
Low voltage MCCs and panelboards	NA	455 (18)
Low-voltage switchgear	NA	610 (24)
5-kV switchgear	NA	910 (36)
15-kV switchgear	NA	910 (36)
Single conductors in air (up to 46 kilovolts), work with rubber insulating gloves	380 (15)	NA
Single conductors in air, work with live-line tools	*MAD*- (2 × *kV*× 2.54)	NA

* NA = not applicable.

† The terms in this equation are:

MAD = The applicable minimum approach distance; and

kV = The system voltage in kilovolts.

Selecting a reasonable arc gap. For a single-phase arc in air, the electric arc will almost always occur when an energized conductor approaches too close to ground. Thus, an employer can determine the arc gap, or arc length, for these exposures by the dielectric strength of air and the voltage on the line. The dielectric strength of air is approximately 10 kilovolts for every 25.4 millimeters (1 inch). For example, at 50 kilovolts, the arc gap would be 50 ÷ 10 × 25.4 (or 50 × 2.54), which equals 127 millimeters (5 inches).

For three-phase arcs in open air and in enclosures, the arc gap will generally be dependent on the spacing between parts energized at different electrical potentials. Documents such as IEEE Std 1584b-2011 provide information on these distances. Employers may select a reasonable arc gap from Table 5, or they may select any other reasonable arc gap based on sparkover distance or on the spacing between (1) live parts at different potentials or (2) live parts and grounded parts (for example, bus or conductor spacings in equipment). In any event, the employer must use an estimate that reasonably resembles the actual exposures faced by the employee.

Table 5
Selecting a Reasonable Arc Gap

Class of equipment	Single-phase arc mm (inches)	Three-phase arc mm[1] (inches)
Cable	NA[2]	13 (0.5).
Low voltage MCCs and panelboards	NA	25 (1.0).
Low-voltage switchgear	NA	32 (1.25).
5-kV switchgear	NA	104 (4.0).
15-kV switchgear	NA	152 (6.0).
Single conductors in air (up to 46 kilovolts), work with rubber insulating gloves	51 (2.0)	Phase conductor spacing.
Single conductors in air, work with live-line tools	*Voltage in kV × 2.54* (Voltage in *kV*× 0.1), but no less than 51 mm (2 inches).	Phase conductor spacing.

[1]Source: IEEE Std 1584b-2011.

[2]NA = not applicable.

Making estimates over multiple system areas. The employer need not estimate the heat-energy exposure for every job task performed by each employee. WAC 296-45-325 (13)(b) permits the employer to make broad estimates that cover multiple system areas provided that: (1) The employer uses reasonable assumptions about the energy-exposure distribution throughout the system, and (2) the estimates represent the maximum exposure for those areas. For example, the employer can use the maximum fault current and clearing time to cover several system areas at once.

Incident heat energy for single-phase-to-ground exposures. Table 6 and Table 7 provide incident heat energy levels for openair, phase-to-ground electric-arc exposures typical for overhead systems.[2] Table 6 presents estimates of available energy for employees using rubber insulating gloves to perform work on overhead systems operating at 4 to 46 kilovolts. The table assumes that the employee will be 380 millimeters (15 inches) from the electric arc, which is a reasonable estimate for rubber insulating glove work. Table 6 also assumes that the arc length equals the sparkover distance for the maximum transient overvoltage of each voltage range.[3] To use the table, an employer would use the voltage, maximum fault current, and maximum clearing time for a system area and, using the appropriate voltage range and fault-current and clearing time values corresponding to the next higher values listed in the table, select the appropriate heat energy (4, 5, 8, or 12 cal/cm^2) from the table. For example, an employer might have a 12,470-volt power line supplying a system area. The power line can supply a maximum fault current of 8 kiloamperes with a maximum clearing time of 10 cycles. For rubber glove work, this system falls in the 4.0-to-15.0-kilovolt range; the next-higher fault current is 10 kA (the second row in that voltage range); and the clearing time is under 18 cycles (the first column to the right of the fault current column). Thus, the available heat energy for this part of the system will be 4 cal/cm^2 or less (from the column heading), and the employer could select protection with a 5-cal/cm^2 rating to meet WAC 296-45-325 (13)(e). Alternatively, an employer could select a base incident-energy value and ensure that the clearing times for each voltage range and fault current listed in the table do not exceed the corresponding clearing time specified in the table. For example, an employer that provides employees with arc-flash protective equipment rated at 8 cal/cm^2 can use the table to determine if any system area exceeds 8 cal/cm^2 by checking the clearing time for the highest fault current for each voltage range and ensuring that the clearing times do not exceed the values specified in the 8-cal/cm^2 column in the table.

Table 7 presents similar estimates for employees using live-line tools to perform work on overhead systems operating at voltages of 4 to 800 kilovolts. The table assumes that the arc length will be equal to the sparkover distance[4] and that the employee will be a distance from the arc equal to the minimum approach distance minus twice the sparkover distance.

The employer will need to use other methods for estimating available heat energy in situations not addressed by Table 6 or Table 7. The calculation methods listed in Table 2 and the guidance provided in Table 3 will help employers do this. For example, employers can use IEEE Std 1584b-2011 to estimate the available heat energy (and to select appropriate protective equipment) for many specific conditions, including lowervoltage, phase-to-phase arc, and enclosed arc exposures.

Table 6

Incident Heat Energy for Various Fault Currents, Clearing Times, and Voltages of 4.0 to 46.0 KV: Rubber Insulating Glove Exposures Involving Phase-to-Ground Arcs in Open Air Only * † ‡

Voltage range (kV) **	Fault current (kA)	Maximum clearing time (cycles)			
		4 cal/cm^2	5 cal/cm^2	8 cal/cm^2	12 cal/cm^2
4.0 to 15.0	5	46	58	92	138
	10	18	22	36	54
	15	10	12	20	30
	20	6	8	13	19
15.1 to 25.0	5	28	34	55	83
	10	11	14	23	24
	15	7	8	13	20
	20	4	5	9	13
25.1 to 36.0	5	21	26	42	62
	10	9	11	18	26
	15	5	6	10	16
	20	4	4	7	11
36.1 to 46.0	5	16	20	32	48
	10	7	9	14	21
	15	4	5	8	13
	20	3	4	6	9

Notes:* This table is for open-air, phase-to-ground electric-arc exposures. It is not for phase-to-phase arcs or enclosed arcs (arc in a box).

† The table assumes that the employee will be 380 mm (15 in.) from the electric arc. The table also assumes the arc length to be the sparkover distance for the maximum transient overvoltage of each voltage range, as follows:

4.0 to 15.0 kV 51 mm (2 in.)

15.1 to 25.0 kV 102 mm (4 in.)
25.1 to 36.0 kV 152 mm (6 in.)
36.1 to 46.0 kV 229 mm (9 in.)

‡ The Occupational Safety and Health Administration calculated the values in this table using the ARCPRO method listed in Table 2.

** The voltage range is the phase-to-phase system voltage.

Table 7
Incident Heat Energy for Various Fault Currents, Clearing Times, and Voltages: Live-line Tool Exposures Involving Phase-to-Ground Arcs in Open Air Only * † ‡ #

Voltage range (kV) **	Fault current (kA)	Maximum clearing time (cycles)			
		4 cal/cm²	5 cal/cm²	8 cal/cm²	12 cal/cm²
4.0 to 15.0	5	197	246	394	591
	10	73	92	147	220
	15	39	49	78	117
	20	24	31	49	73
15.1 to 25.0	5	197	246	394	591
	10	75	94	150	225
	15	41	51	82	122
	20	26	33	52	78
25.1 to 36.0	5	138	172	275	413
	10	53	66	106	159
	15	30	37	59	89
	20	19	24	38	58
36.1 to 46.0	5	129	161	257	386
	10	51	64	102	154
	15	29	36	58	87
	20	19	24	38	57
46.1 to 72.5	20	18	23	36	55
	30	10	13	20	30
	40	6	8	13	19
	50	4	6	9	13
72.6 to 121.0	20	10	12	20	30
	30	6	7	11	17
	40	4	5	7	11
	50	3	3	5	8
121.1 to 145.0	20	12	15	24	35
	30	7	9	15	22
	40	5	6	10	15
	50	4	5	8	11
145.1 to 169.0	20	12	15	24	36
	30	7	9	15	22
	40	5	7	10	16
	50	4	5	8	12
169.1 to 242.0	20	13	17	27	40
	30	8	10	17	25
	40	6	7	12	17
	50	4	5	9	13

Voltage range (kV) **	Fault current (kA)	Maximum clearing time (cycles)			
		4 cal/cm²	5 cal/cm²	8 cal/cm²	12 cal/cm²
242.1 to 362.0	20	25	32	51	76
	30	16	19	31	47
	40	11	14	22	33
	50	8	10	16	25
362.1 to 420.0	20	12	15	25	37
	30	8	10	15	23
	40	5	7	11	16
	50	4	5	8	12
420.1 to 550.0	20	23	29	47	70
	30	14	18	29	43
	40	10	13	20	30
	50	8	9	15	23
550.1 to 800.0	20	25	31	50	75
	30	15	19	31	46
	40	11	13	21	32
	50	8	10	16	24

Notes: * This table is for open-air, phase-to-ground electric-arc exposures. It is not for phase-to-phase arcs or enclosed arcs (arc in a box).

† The table assumes the arc length to be the sparkover distance for the maximum phase-to-ground voltage of each voltage range. The table also assumes that the employee will be the minimum approach distance minus twice the arc length from the electric arc.

‡ The Occupational Safety and Health Administration calculated the values in this table using the ARCPRO method listed in Table 2.

For voltages of more than 72.6 kV, employers may use this table only when the minimum approach distance established under WAC 296-45-325(4) is greater than or equal to the following values:

72.6 to 121.0 kV 1.02 m.

121.1 to 145.0 kV 1.16 m.

145.1 to 169.0 kV 1.30 m.

169.1 to 242.0 kV 1.72 m.

242.1 to 362.0 kV 2.76 m.

362.1 to 420.0 kV 2.50 m.

420.1 to 550.0 kV 3.62 m.

550.1 to 800.0 kV 4.83 m.

** The voltage range is the phase-to-phase system voltage.

B. Selecting Protective Clothing and Other Protective Equipment.

WAC 296-45-325 (13)(e) requires employers, in certain situations, to select protective clothing and other protective equipment with an arc rating that is greater than or equal to the incident heat energy estimated under WAC 296-45-325 (13)(b). Based on laboratory testing required by ASTM F1506-10a, the expectation is that protective clothing with an arc rating equal to the estimated incident heat energy will be capable of preventing second-degree burn injury to an employee exposed to that incident heat energy from an electric arc. Note that actual electric-arc exposures may be more or less severe than the estimated value because of factors such as arc movement, arc length, arcing from reclosing of the system, secondary fires or explosions, and weather conditions. Additionally, for arc rating based on the fabric's arc thermal performance value[5] (ATPV), a worker exposed to incident energy at the arc rating has a 50-percent chance of just barely receiving a second-degree burn. Therefore, it is possible (although not likely) that an employee will sustain a second-degree (or worse) burn wearing clothing conforming to WAC 296-45-325 (13)(e) under certain circumstances. However, reasonable employer estimates and maintaining appropriate minimum approach distances for employees should limit burns to relatively small burns that just barely extend beyond the epidermis (that is, just barely a second degree burn). Consequently, protective clothing and other protective equipment meeting WAC 296-45-325 (13)(e) will provide an appropriate degree of protection for an employee exposed to electric-arc hazards.

WAC 296-45-325 (13)(e) does not require arc-rated protection for exposures of 2 cal/cm² or less. Untreated cotton clothing will reduce a 2-cal/cm² exposure below the 1.2- to 1.5-cal/cm² level necessary to cause burn injury, and this material should not ignite at such low heat energy levels. Although WAC 296-45-325 (13)(e) does not require clothing to have an arc rating when exposures are 2 cal/cm² or less, WAC 296-45-325 (13)(d) requires the outer layer of clothing

to be flame resistant under certain conditions, even when the estimated incident heat energy is less than 2 cal/cm^2, as discussed later in this appendix.

Additionally, it is especially important to ensure that employees do not wear undergarments made from fabrics listed in the note to WAC 296-45-325 (13)(c) even when the outer layer is flame resistant or arc rated. These fabrics can melt or ignite easily when an electric arc occurs. Logos and name tags made from nonflame-resistant material can adversely affect the arc rating or the flame resistant characteristics of arc-rated or flame resistant clothing. Such logos and name tags may violate WAC 296-45-325 (13)(c), (d) and (e).

WAC 296-45-325 (13)(e) requires that arc-rated protection cover the employee's entire body, with limited exceptions for the employee's hands, feet, face, and head. WAC 296-45-325 (13)(e)(i) provides that arc-rated protection is not necessary for the employee's hands under the following conditions:

For any estimated incident heat energy	When the employee is wearing rubber insulating gloves with protectors.
If the estimated incident heat energy does not exceed 14 cal/cm^2	When the employee is wearing heavy-duty leather work gloves with a weight of at least 407 gm/m^2 (12 oz/yd^2).

WAC 296-45-325 (13)(e)(ii) provides that arc-rated protection is not necessary for the employee's feet when the employee is wearing heavy-duty work shoes or boots. Finally, WAC 296-45-325 (13)(e)(iii), (iv) and (v) require arc-rated head and face protection as follows:

	Minimum head and face protection		
Exposure	None*	Arc-rated faceshield with a minimum rating of 8 cal/cm^2*	Arc-rated hood or faceshield with balaclava
Single-phase, open air	2-8 cal/cm^2	9-12 cal/cm^2	13 cal/cm^2 or higher †.
Three-phase	2-4 cal/cm^2	5-8 cal/cm^2	9 cal/cm^2 or higher ‡.

* These ranges assume that employees are wearing hardhats meeting the specifications in WAC 296-800-16055 or 296-155-205, as applicable.

† The arc rating must be a minimum of 4 cal/cm^2 less than the estimated incident energy. Note that WAC 296-45-325 (13)(e)(v) permits this type of head and face protection, with a minimum arc rating of 4 cal/cm^2 less than the estimated incident energy, at any incident energy level.

‡ Note that WAC 296-45-325 (13)(e) permits this type of head and face protection at any incident energy level.

IV. Protection Against Ignition

WAC 296-45-325 (13)(c) prohibits clothing that could melt onto an employee's skin or that could ignite and continue to burn when exposed to flames or to the available heat energy estimated by the employer under WAC 296-45-325 (13)(b). Meltable fabrics, such as acetate, nylon, polyester, and polypropylene, even in blends, must be avoided. When these fibers melt, they can adhere to the skin, thereby transferring heat rapidly, exacerbating burns, and complicating treatment. These outcomes can result even if the meltable fabric is not directly next to the skin. The remainder of this section focuses on the prevention of ignition.

WAC 296-45-325 (13)(e) generally requires protective clothing and other protective equipment with an arc rating greater than or equal to the employer's estimate of available heat energy. As explained earlier in this appendix, untreated cotton is usually acceptable for exposures of 2 cal/cm^2 or less.[6] If the exposure is greater than that, the employee generally must wear flame-resistant clothing with a suitable arc rating in accordance with WAC 296-45-325 (13)(d) and (e). However, even if an employee is wearing a layer of flame-resistant clothing, there are circumstances under which flammable layers of clothing would be uncovered, and an electric arc could ignite them. For example, clothing ignition is possible if the employee is wearing flammable clothing under the flame-resistant clothing and the underlayer is uncovered because of an opening in the flame-resistant clothing. Thus, for purposes of WAC 296-45-325 (13)(c), it is important for the employer to consider the possibility of clothing ignition even when an employee is wearing flame-resistant clothing with a suitable arc rating.

Under WAC 296-45-325 (13)(c), employees may not wear flammable clothing in conjunction with flame-resistant clothing if the flammable clothing poses an ignition hazard.[7] Although outer flame-resistant layers may not have openings that expose flammable inner layers, when an outer flame-resistant layer would be unable to resist breakopen,[8] the next (inner) layer must be flame-resistant if it could ignite.

Nonflame-resistant clothing can ignite even when the heat energy from an electric arc is insufficient to ignite the clothing. For example, nearby flames can ignite an employee's clothing; and, even in the absence of flames, electric arcs pose ignition hazards beyond the hazard of ignition from incident energy under certain conditions. In addition to requiring flame-resistant clothing when the estimated incident energy exceeds 2.0 cal/cm^2, WAC 296-45-325 (13)(d) requires flame-resistant clothing when: The employee is exposed to contact with energized circuit parts operating at more than 600 volts (WAC 296-45-325 (13)(d)(i)), an electric arc could ignite flammable material in the work area that, in turn, could ignite the employee's clothing (WAC 296-45-325 (13)(d)(ii)), and molten metal or electric arcs from faulted conductors in the work area could ignite the employee's clothing (WAC 296-45-325 (13)(d)(iii)). For example, grounding conductors can become a source of heat energy if they cannot carry fault current without failure. The employer must consider these possible sources of electric

arcs[9] in determining whether the employee's clothing could ignite under WAC 296-45-325 (13)(d)(iii).

[1] Flame-resistant clothing includes clothing that is inherently flame resistant and clothing chemically treated with a flame retardant. (See ASTM F1506-10a, *Standard Performance Specification for Flame Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards*, and ASTM F1891-12 *Standard Specification for Arc and Flame Resistant Rainwear*.)

[2] The Occupational Safety and Health Administration used metric values to calculate the clearing times in Table 6 and Table 7. An employer may use English units to calculate clearing times instead even though the results will differ slightly.

[3] The Occupational Safety and Health Administration based this assumption, which is more conservative than the arc length specified in Table 5, on Table 410-2 of the 2012 NESC.

[4] The dielectric strength of air is about 10 kilovolts for every 25.4 millimeters (1 inch). Thus, the employer can estimate the arc length in millimeters to be the phase-to-ground voltage in kilovolts multiplied by 2.54 (or voltage (in kilovolts) × 2.54).

[5] ASTM F1506-10a defines "arc thermal performance value" as "the incident energy on a material or a multilayer system of materials that results in a 50% probability that sufficient heat transfer through the tested specimen is predicted to cause the onset of a second-degree skin burn injury based on the Stoll [footnote] curve, cal/cm^2." The footnote to this definition reads: "Derived from: Stoll, A. M., and Chianta, M. A., 'Method and Rating System for Evaluations of Thermal Protection,' Aerospace Medicine, Vol 40, 1969, pp. 1232-1238 and Stoll, A. M., and Chianta, M. A., 'Heat Transfer through Fabrics as Related to Thermal Injury,' Transactions-New York Academy of Sciences, Vol 33(7), Nov. 1971, pp. 649-670."

[6] See WAC 296-45-325 (13)(d)(i), (ii) and (iii) for conditions under which employees must wear flame-resistant clothing as the outer layer of clothing even when the incident heat energy does not exceed 2 cal/cm^2.

[7] WAC 296-45-325 (13)(c) prohibits clothing that could ignite and continue to burn when exposed to the heat energy estimated under WAC 296-45-325 (13)(b).

[8] Breakopen occurs when a hole, tear, or crack develops in the exposed fabric such that the fabric no longer effectively blocks incident heat energy.

[9] Static wires and pole grounds are examples of grounding conductors that might not be capable of carrying fault current without failure. Grounds that can carry the maximum available fault current are not a concern, and employers need not consider such grounds a possible electric arc source.

AMENDATORY SECTION (Amending WSR 16-10-082, filed 5/3/16, effective 7/1/16)

WAC 296-45-910 Appendix H—Reference documents. The references contained below provide information that can be helpful in understanding and complying with the requirements contained in this chapter. The national consensus standards referenced below contain detailed specifications that employers may follow in complying with the more performance-based requirements of this chapter. Except as specifically noted in this chapter, however, the department will not necessarily deem compliance with the national consensus standards to be compliant with the provisions of this chapter.

ANSI/SIA A92.2-2009, *American National Standard for Vehicle-Mounted Elevating and Rotating Aerial Devices*.

ANSI Z133-2012, *American National Standard Safety Requirements for Arboricultural Operations-Pruning, Trimming, Repairing, Maintaining, and Removing Trees, and Cutting Brush*.

ANSI/IEEE Std 935--1989, *IEEE Guide on Terminology for Tools and Equipment to Be Used in Live Line Working*.

ASME B20.1-2012, *Safety Standard for Conveyors and Related Equipment*.

ASTM D120-09, *Standard Specification for Rubber Insulating Gloves*.

ASTM D149-09 (2013), *Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies*.

ASTM D178-01 (2010), *Standard Specification for Rubber Insulating Matting*.

ASTM D1048-12, *Standard Specification for Rubber Insulating Blankets*.

ASTM D1049-98 (2010), *Standard Specification for Rubber Insulating Covers*.

ASTM D1050-05 (2011), *Standard Specification for Rubber Insulating Line Hose*.

ASTM D1051-08, *Standard Specification for Rubber Insulating Sleeves*.

ASTM F478-09, *Standard Specification for In-Service Care of Insulating Line Hose and Covers*.

ASTM F479-06 (2011), *Standard Specification for In-Service Care of Insulating Blankets*.

ASTM F496-08, *Standard Specification for In-Service Care of Insulating Gloves and Sleeves*.

ASTM F711-02 (2007), *Standard Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used in Live Line Tools*.

ASTM F712-06 (2011), *Standard Test Methods and Specifications for Electrically Insulating Plastic Guard Equipment for Protection of Workers*.

ASTM F819-10, *Standard Terminology Relating to Electrical Protective Equipment for Workers*.

ASTM F855-09, *Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment*.

ASTM F887-12^{e1}, *Standard Specifications for Personal Climbing Equipment*.

ASTM F914/F914M-10, *Standard Test Method for Acoustic Emission for Aerial Personnel Devices Without Supplemental Load Handling Attachments*.

ASTM F1116-03 (2008), *Standard Test Method for Determining Dielectric Strength of Dielectric Footwear*.

ASTM F1117-03 (2008), *Standard Specification for Dielectric Footwear*.

ASTM F1236-96 (2012), *Standard Guide for Visual Inspection of Electrical Protective Rubber Products*.

ASTM F1430/F1430M-10, *Standard Test Method for Acoustic Emission Testing of Insulated and Non-Insulated Aerial Personnel Devices with Supplemental Load Handling Attachments*.

ASTM F1505-10, *Standard Specification for Insulated and Insulating Hand Tools*.

ASTM F1506-10a, *Standard Performance Specification for Flame Resistant and Arc Rated Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards*.

ASTM F1564-13, *Standard Specification for Structure-Mounted Insulating Work Platforms for Electrical Workers*.

ASTM F1701-12, *Standard Specification for Unused Polypropylene Rope with Special Electrical Properties*.

ASTM F1742-03 (2011), *Standard Specification for PVC Insulating Sheeting*.

ASTM F1796-09, *Standard Specification for High Voltage Detectors-Part 1 Capacitive Type to be Used for Voltages Exceeding 600 Volts AC*.

ASTM F1797-09$^{\varepsilon 1}$, *Standard Test Method for Acoustic Emission Testing of Insulated and Non-Insulated Digger Derricks*.

ASTM F1825-03 (2007), *Standard Specification for Clampstick Type Live Line Tools*.

ASTM F1826-00 (2011), *Standard Specification for Live Line and Measuring Telescoping Tools*.

ASTM F1891-12, *Standard Specification for Arc and Flame Resistant Rainwear*.

ASTM F1958/F1958M-12, *Standard Test Method for Determining the Ignitability of Non-flame-Resistant Materials for Clothing by Electric Arc Exposure Method Using Mannequins*.

ASTM F1959/F1959M-12, *Standard Test Method for Determining the Arc Rating of Materials for Clothing*.

IEEE Stds 4-1995, 4a-2001(Amendment to IEEE Standard Techniques for High-Voltage Testing), *IEEE Standard Techniques for High-Voltage Testing*.

IEEE Std 62-1995, *IEEE Guide for Diagnostic Field Testing of Electric Power Apparatus-Part 1: Oil Filled Power Transformers, Regulators, and Reactors*.

IEEE Std 80-2000, *Guide for Safety in AC Substation Grounding*.

IEEE Std 100-2000, *The Authoritative Dictionary of IEEE Standards Terms Seventh Edition*.

IEEE Std 516-2009, *IEEE Guide for Maintenance Methods on Energized Power Lines*.

IEEE Std 524-2003, *IEEE Guide to the Installation of Overhead Transmission Line Conductors*.

IEEE Std 957-2005, *IEEE Guide for Cleaning Insulators*.

IEEE Std 1048-2003, *IEEE Guide for Protective Grounding of Power Lines*.

IEEE Std 1067-2005, *IEEE Guide for In-Service Use, Care, Maintenance, and Testing of Conductive Clothing for Use on Voltages up to 765 kV AC and ±750 kV DC*.

IEEE Std 1307-2004, *IEEE Standard for Fall Protection for Utility Work*.

IEEE Stds 1584-2002, 1584a-2004 (Amendment 1 to IEEE Std 1584-2002), and 1584b-2011 (Amendment 2: Changes to Clause 4 of IEEE Std 1584-2002), *IEEE Guide for Performing Arc-Flash Hazard Calculations*.

IEEE ((~~C2-2012~~)) C2-2017, *National Electrical Safety Code*.

NFPA 70E-2012, *Standard for Electrical Safety in the Workplace*.