

CONCISE EXPLANATORY STATEMENT
Chapter 296-45 WAC Safety Standards for Electrical Workers –
Rotorcraft/Helicopter for Power Distribution and Transmission Line
Installation, Construction and Repair

Public Hearings: January 26th, January 27th, February 1st, and February 3rd, 2016

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Table of Contents

I.	Purpose of Rulemaking.....	2
	A. Background.....	2
	B. Summary of the Rulemaking Activities.....	2
II.	Changes to the Rules.....	2
III.	Summary of Comments Received and Department Response.....	6

I. Purpose of Rulemaking

This rulemaking was initiated in the spring of 2012. The Electrical Utility Safety Advisory Committee (EUSAC), a work group comprised of about fifty business and labor representatives, asked the department to commence rulemaking to update and clarify safety requirements that relate to electrical work being done with the assistance of helicopters. The safety standards for electrical workers under Chapter 296-45 WAC with regard to helicopter-assisted power line work have not been updated for many years. Therefore, parts of them are outdated and do not reflect best industry practices, or are inconsistent with federal or state laws, or are inadequate to protect electrical workers.

A. Background

This rulemaking was requested and supported by industry. The rule was drafted by department staff and the small sub-committee. The rule was agreed upon by both parties and we do not anticipate any controversies or issues related to the language.

The department considered whether these rules were subject to the Regulatory Fairness Act and determined that they do require a Small Business Economic Impact Statement (SBEIS), which was completed by the agency. The Cost/Benefit Analysis (CBA) has determined that the probable benefits of the rule far exceed the probable costs.

B. Summary of the rulemaking activities

A small sub-committee was formed from the Electrical Utility Safety Advisory Committee (EUSAC), representing both business and labor. This group worked with DOSH staff to determine the extent of rulemaking needed to align its rule with current industry practice. Several meetings took place and the committee drafted this rule.

II. Changes to the Rules (Proposed rule versus rule adopted):

WAC 296-45-67503 Definitions.

- Modified the definition of “cargo hooks”. It now reads, “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”.
- Modified the definition of “helicopter, helicopter crane and rotorcraft”. It now reads, “A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors”.
- Modified the definition of “hooking and unhooking”. It now reads, “The process by which an external load is either attached to or detached from the helicopter hook or sling line”.

- Modified the definition of “sock line”. It now reads, “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”.

WAC 296-45-67508 Hazard analysis and job briefing.

- Modified the language in subsection (1). It reads:
 - (1) Before the commencement of any construction, maintenance, or lifting activity using a helicopter, a job hazard analysis (JHA) must be conducted, which, at a minimum, must:
 - (a) Define the core tasks;
 - (b) Identify specific hazards;
 - (c) Identify mission specific tasks;
 - (d) Describe procedures or controls used to safely manage or mitigate the hazards;
 - (e) Describe the communication procedure to be used with the crew;
 - (f) Discuss fatigue, and methods to eliminate or mitigate it;
 - (g) Specify minimum approach distances (MAD);
 - (h) Describe a site specific emergency action plan.
- Added a new subsection (2) relating to a site specific job briefing. It reads:
 - (2) A site specific job briefing must be held each day construction, maintenance, or lifting activities using a helicopter are performed. The daily job briefing at a minimum must:
 - (a) Summarize or recap the content of the JHA as applicable to the day’s duties;
 - (b) Communicate any site specific hazards not identified in the JHA and provide mitigation for those hazards;
 - (c) Identify or establish roles for each person who will be interfacing with the aircraft or its load;
 - (d) Describe the communication procedure to be used with the crew;
 - (e) Specify minimum approach distances (MAD) from energized electrical lines and equipment in the work area;
 - (f) Describe the applicable sections of the site specific emergency action plan, such as the locations of first aid equipment and rescue gear.
- The proposed subsection (2) now becomes subsection (3) and it reads:
 - (3) An additional job briefing must be held immediately if working conditions change during the course of a job. Working conditions would include weather, wind, and visibility. During the job briefing all affected employees and others, including signalpersons, ground workers, pilot(s), must be advised of the hazards including a change of operation, if needed.

WAC 296-45-67522 Cargo hooks.

- Modified the language in subsection (1). It reads:
 - (1) All cargo hooks shall have a primary and secondary release mechanism designed and installed as to prevent inadvertent operation. The hooks primary and secondary release shall be tested prior to each day’s operation to determine that the release functions properly.

WAC 296-45-67523 Hooking and unhooking loads.

- Added a sentence to subsection (3) stating that this does not apply to assembly and erection of steel monopole construction.

WAC 296-45-67527 Line stringing.

- Modified the language in subsection (3)(c). It reads:
(3)(c) No pulling operation shall be conducted at a ground speed greater than fifteen mph.

WAC 296-45-67531 Communication.

- Modified this section. The language in the proposed subsection (1) was rewritten and separated into subsections (1) through (4) for clarity. The language in the proposed (2) was slightly modified and becomes subsection (5). The language in subsections (3) and (4) becomes the new subsection (6) and (7). It reads:
(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.
Subsections (5), (6) and (7), no changes except the numbering.

WAC 296-45-67533 Helicopter operation.

- Modified the language in subsection (1). It reads:
(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.

WAC 296-45-67536 Helicopter work tasks.

- Added language relating to Class D operations in subsection (2)(a).
- Modified the language in subsection (2)(b)(iv). It reads:
(2)(b)(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.

WAC 296-45-67537 Sling and rigging.

- Modified the language in subsection (4)(c). It reads:
(4)(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.

WAC 296-45-67545 Refueling operations.

- Modified the language in subsection (3)(d). It reads:
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.

Public Hearings: Four public hearings were held throughout the state. A total of ninety-one people attended the hearings. Twenty-eight attendees provided verbal testimony. An additional eleven written comments were received from industry representatives. In addition, a petition with over 700 signatures supporting the changes to Chapter 296-45 WAC was received by the department. Following is a summary of the comments the department received.

Note: One department employee submitted written comments during the public hearing phase of this rulemaking. The employee’s comments were evaluated with no changes being made to the rule. Because the purpose of the public hearing phase is to gather input from the public who represent the industry affected by the rulemaking, internal staff comments are not included in this document.

III. Summary of Comments Received and Department Response

General Comments	Department Response
<p>I just want to thank the Department for all the work that they did with regard to herding these cats into one concise document for us to be able to take a look at and review here. It's a tremendous amount of work invested. If I talk about the helicopter rules or the OSHA update, you know, that is not an easy task. And, you know, we really feel privileged to be here and see these final documents, and we really concur with both the consensus document for the OSHA update and also for the helicopter rules. (Lou Walter, IBEW 77)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>So, I just wanted to indicate that so it's in the record, that we support the helicopter provisions in the rules. We think they're significant. Everything is not perfect, but we don't want to throw the good away because we can't get the perfect. But it is a standard that we believe will provide a high level of safety that will be currently experienced by electrical workers working off of helicopters. (Lou Walter, IBEW 77)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>The safety requirements contained in Chapter 296-45 WAC are critical to the lifesaving -- life safety of our members and the many thousands of other individuals throughout the state. I'm present here today to give testimony and comments in support of the proposal issued by the department through the code reviser of WSR 16-01-029 regarding helicopter operations and WSR 16-01-030 regarding federal OSHA requirement changes and a small number of state initiated changes. IBEW Local 77 is adamantly opposed to any modification to the Washington State 296-45 WAC that would in any way, real or perceived, reduce worker protection provided by the current state regulations and the proposed changes. (Lou Walter, IBEW)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>IBEW Local 77 participated in and fully supports the unanimous agreement of the ten member, five members of labor and five management, subcommittee appointed by the Electrical Utility Safety</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>

Advisory Committee, EUSAC, on the amendments as proposed to Chapter 296-45 WAC. In addition IBEW Local 77 participated in a separate advisory subcommittee appointed by EUSAC and fully supports all the amendments as proposed for Section 296-45-675 WAC pertaining to rotorcraft and helicopter use for power distribution and transmission line installation and construction and repair. The aforementioned amendments, Chapter 296-45 WAC, represent significant updates and changes including the following: One, host employer contractor information transfer. Two, 100 percent fall protection for poles, towers, and transfers. Three, minimum approach distance, MAD, update. Four, flame resistant arc-rated clothing as personal protective equipment. Five, adding construction to the scope and application of Chapter 296-45 WAC. Six, update and clarification -- clarified definition for qualified electrical employee. Seven, adding additional language on bonding as part of addressing the equipotential zone. Eight, extensive update of rotorcraft helicopter use and safety requirements. In addition there are numerous amendments proposed throughout Chapter 296-45 WAC, which are required with compliance with OSHA requirements. These include definitions and other language amendments as necessary to ensure that workplace safety standards enforced by the Department of Labor and Industries meets or exceed those federal requirements. The proposed amendments have been carefully constructed and vetted by the electrical utility industry of Washington state for more than a year of work with the EUSAC and its labor and management advisory assistance. Following the public hearing process, we believe it is essential that if the department believes additional amendments or changes to the proposed amendments should be made that any such change shall be further subjected to the review and advice of the EUSAC subcommittee on this subject prior to any finalization of rules adopted. Any and all proposals for changes that would have an effect on reducing, eliminating, or weakening either the existing safety rules or proposed

<p>amendments by the existing rules are adamantly opposed by IBEW Local 77. Let us not forget the workers who have died or became seriously injured in the generation, transmission, distribution of electrical energy. Our collective responsibility is that the department is to consistently seek to improve worker protection. Please adopt the proposed amendments as written and help the electrical utility industry and all those who work within the scope of Chapter 296-45 WAC to achieve a safer workplace. (Lou Walter, IBEW 77)</p>	
<p>I also worked on the helicopter committee, advisory committee, to the Department, and also worked on the committee, advisory committee, for the Chapter 45 update through the EUSAC organization, which is the Electrical Utility Safety Advisory Committee, or EUSAC, which established a subcommittee often called Small Committee, of 10 members. Those 10 were five labor and five employer representatives. That group, a body of 10, unanimously voted to support the Chapter 45 updated rules as published by L & I. (Steve Cant, IBEW 77)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>Just to be clear, these rules are adopted under the WISHA law, the Washington Industrial Safety and Health Act, 1973. These rules are the minimum to protect workers in the state of Washington. Employers are encouraged to have safety policies that exceed these rules, and workers are encouraged to follow those policies and whatever rules are adopted into the state standards. Workers take the risk. Workers face the hazards. Workers are the people who are injured from minor to serious to fatality. Workers are the expected body that will be protected by these rules. So, let's always keep that in mind. (Steve Cant, IBEW 77)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>As a member of the EUSAC committee that worked with the Department, I support the unanimous decision of the committee to adopt, as written, the published proposal for both the helicopter safety requirement and also the main update to the electrical rules in Chapter 45. Additionally, I will provide the court reporter signatures of more than 30 members of our organization in support of the adoption of</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>

<p>these rules. And I might mention that our organization, Local 77, represents more than 7,000 members in this state, many of whom are at risk each and every day, putting their life on the line, supply, generate, transmit and distribute electrical voltage so the citizens of this state can enjoy the benefits of a good electrical distribution and that are places of employment who employ millions of employees of this state, have the energy required to run their operation. (Steve Cant, IBEW 77)</p>	
<p>I am a journeyman power lineman. I work under the guidance of our WAC 45. As a lineman I work for and with fellow lineman who are strongly in favor of the WAC and the adopted WAC changes. There is a long road to becoming a journeyman lineman. As a utility lineman you go through a 6,000 hour or 3 year apprenticeship. As a construction lineman it's 7,000 and up. The program is very intensive, and drills the importance of safety and watching over your fellow worker. From the time an apprentice is indentured we are taught to look through our green WAC book. That little green book rides with us from day one and usually finds a spot in our lunch boxes. In line work being unsafe is not an option. If someone doesn't respect safety they usually wind up crippled or killed, with the flash of a light. Being a journeyman I have witnessed more than my share of accidents, and or been part of. The WAC rules and or guidelines make sure we follow rules from fall protection, to what one journeyman can do by himself, and when it's time to call in a fellow worker. It covers FR clothing to try and minimize our stay at a burn unit should someone experience a big arc or fire. I personally have cut out which is term for falling from a power pole. I fell, actually slid around 25 feet to the ground and tore flesh off my hand and my clothes were ripped up. Since I have come through we are adopting rules and belts that make it really hard to fall more than a couple of feet. I was working right next to a fellow lineman whose belt was not clipped properly. This lineman's belt gave away when he leaned back, in which the lineman tumbled and bounced off the steel tower on</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>

<p>the way to the ground falling around 70 feet stopping just short of the ground. His body will never be the same and he is lucky to be alive. I have seen chainsaw accidents where saws have ripped through flesh and tendons. These are very graphic examples of what goes on in an everyday environment in the line industry. All which were not on the same crews of people. As linemen our WAC is a set of guidelines to protect me and the rest of the linemen out there. In our industry it's not about getting by with less man force to do a job it's about making sure our work family gets home safe and alive. I strongly support the WAC and look forward to using it for years to come, and any changes to keep my family and I alive at the end of the day or night. Thank you for your time. (Bryce Aust, Pacific County PUD)</p>	
<p>We are committed to safety and supporting language to improve safety in our industry. We support the proposed changes to Chapter 296-45 WAC, as outlined in the Department of Labor and Industries published proposals taken to public hearings. We would like to recognize the members from the Joint Labor and Management EUSAC Committee, who unanimously support the proposed changes, for their hard work and dedication to safety. We appreciate their ability to stay focused on getting us compliant with the new OSHA requirements and updating the WAC accordingly. The Washington State Safety Standards for Electrical Workers Chapter 296-45 WAC has a long history and tradition of keeping our electrical workers safe. These proposed changes will assure that the tradition conditions. (Grays Harbor PUD)</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>
<p>Winco, specifically, has nine aircraft that are dedicated to helicopter construction; that's all we do, with those nine aircraft, all over North America. I believe in my experience from being around the world doing this, Winco is the largest company that specializes in helicopter construction and maintenance with those nine aircraft doing that every day. We pull more than one wire pull a day, companywide, which is more than 5,000 miles of wire per year, and do all the other tasks that</p>	<p>Thank you for your comments.</p>

<p>are laid out in this document quite regularly. So we're no stranger to anything in this document. (Dave Feerst, Winco)</p>	
<p>I'd like to thank those who have committed their time and efforts in the development in the consensus rules draft. The high voltage industry here in Washington state has a long history of labor, management, and the Department of Labor and Industries working together through EUSAC to promote a safe workplace. The EUSAC small community worked diligently to develop the draft consensus rules we are discussing today. Their efforts should be recognized as an example of what committee people can do to promote safety in all our workplaces. Tacoma Power supports the consensus rules as presented. We believe these rule changes will help to reduce workplace injuries. (Jim Boyd, Tacoma Power)</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>
<p>Tacoma Power suggests the Department of Labor and Industries provide assistance to our industry in training on the final rule as adopted. This assistance could be in the form of training and presentation materials to assist in a consistent understanding and application of the new rules. (Jim Boyd, Tacoma Power)</p>	<p>Thank you for your comments.</p> <p>Yes we agree that training and assistance materials would be useful in providing consistent understanding and application of the new rules.</p> <p>The Department will continue to work with the EUSAC committee to identify needed clarification and training materials that support the industry in the application of this rule.</p>
<p>I'm a journeyman lineman. I've done that trade since 1974, broke out as a grunt then, and worked on tree crews, line crews. Got my apprenticeship in '76 and worked in the trade ever since. I'm honored to be a part of the IBEW and president Local 77. I'm the inheritor of the legacy of Lou Brooks, who at a time when 50 percent of the men in the trade died just making a living, he changed things. He wrote the first electrical safety laws in the country. That was back in our international office in Washington, D.C., and saw a history display of them written as</p>	<p>Thank you for your comments in support of this rulemaking.</p>

<p>the first safety laws for high voltage electrical work in the United States. He was hounded out of the northwest and couldn't get work here and ended up in other parts of the country making his living. We don't live under those circumstances anymore, but we don't wish to either. We've taken every action feasible through EUSAC and our safety committees to make sure that that stays the way it is. I support the proposed changes to WAC 45 and helicopter rules proposed by the EUSAC small committee. (Rick Johnson, IBEW 77)</p>	
<p>You also heard in previous testimony about the passion and commitment of labor representatives who petitioned for work rules to protect the workers going back a hundred years. Let us not fail to recognize the companies, such as, Pacific Power, who also came into existence over a hundred years ago. These companies, with their vision and investments, began to provide both commodity as well as employment to those in labor and have continued to serve the communities and the states. The relationship of labor, the employers, and the regulators, as we are now, once these rules are enacted, the real work must begin. The task is mutually shared by all three parties to educate the leaders, the workers, and the regulators about the -- in interest of the rule because it is only with understanding that we can succeed in reducing workplace incidents, injuries, and fatalities. Will we stumble? Yes. But together we can persevere. (Steve Harkin, Pacific Power)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>Avista Corporation is in full support of where the Chapter 45 is along with the helicopter rules. We know that the labor management group worked very hard on this. Some of the requirements in Chapter 45 go above and beyond where OSHA has and doesn't even cover; we believe Chapter 45 provides additional protection for our employees in the state. (Kirk Hayfield, Avista)</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>
<p>WAC 296-45-675 Rotorcraft/helicopter for power distribution and transmission line installation, construction and repair.</p>	

<p>We support the rules as proposed for rotorcraft helicopters use in Section 675. (Steve Cant, IBEW 77)</p>	<p>Thank you for your comments in support of this rulemaking.</p>
<p>The helicopter language is something that we needed to update. And I really again appreciate everyone's good efforts in working together on trying to update this statute. (Lorna Klemanski, Chelan PUD)</p>	<p>Thank you for your comments in support of this rulemaking and the entire rulemaking process.</p>
<p>WAC 296-45-67503 Definitions.</p>	
<p>Definition of “cargo hooks”. The FAA differentiates “cargo hooks” remote hooks and other hooks. Cargo hooks are affixed to the aircraft structure or suspended by short lengths of cable but do not extend below the helicopter skids. All cargo hooks must be FAA Certified, either with the aircraft or add as a supplemental type certificate. Certification requirements are list under 27.865 or 29.865 as appropriate. This definition appears to group cargo hooks, remote hooks and other hooks in one category. This poses several issues. Safety and technical requirements of certified hooks are governed by the FAA, and should not be regulated by OSHA. Cargo hooks are not required to have mechanical and electrical unlocking means, they are required to have a primary and secondary means of release. This could be electrical and mechanical, but could also be dual hydraulic, dual mechanical, or conceivably, some other arrangement. Suspended hooks, such as remote hooks, almost always have electric release only. Some hooks such as J hooks (similar to crane hooks) or grapple hooks have no means of release, however, the cargo hook above must retain its release capability. I suggest the verbiage: Cargo hooks. A FAA Certified device attached or suspended from an aircraft which is used to connect an external load. This device has primary and secondary means of release. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “cargo hooks” to read as follows: “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”.</p>
<p>A commenter suggested removing the definition of “cargo hooks” since the FAA regulates all installed components of the aircraft and we would concur with that. If the department is to leave this definition we request to use the following: “The cargo hook is the FAA approved primary</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “cargo hooks” to read as follows: “The cargo hook is the FAA approved primary</p>

<p>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.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>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”.</p>
<p>Definition of “helicopter, helicopter crane and rotorcraft”. This not precisely accurate, see the FAA’s definition of “rotorcraft” in 14CFR §1.1: Rotorcraft means a heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “helicopter, helicopter crane and rotorcraft” to read as follows: “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 also means helicopter crane, rotorcraft, or similar aircraft.”</p>
<p>Definition of “helicopter, helicopter crane and rotorcraft”. We would concur with the following definition: “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 also means helicopter crane, rotorcraft, or similar aircraft.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “helicopter, helicopter crane and rotorcraft” to read as follows: “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 also means helicopter crane, rotorcraft, or similar aircraft.”</p>
<p>Definition of “hooking and unhooking”. Hooking or unhooking from the cargo hook would imply unhooking or removing the line from the aircraft. Unhooking the load from the sling line would be better described by a definition like: The process by which an external load is either attached to or detached from the helicopter hook or sling line. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “hooking and unhooking” to read as follows: “The process by which an external load is either attached to or detached from the helicopter hook or sling line.”</p>
<p>Definition of “hooking and unhooking”. We would concur with the following definition: “The process by which an external load is either attached to or detached from the helicopter hook or sling line.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson</p>	<p>Thank you for your comments.</p> <p>The department is modifying the definition of “hooking and unhooking” to read as follows: “The process by which an</p>

Construction)	external load is either attached to or detached from the helicopter hook or sling line.”
Definition of “sock line”. It may be used to pull other types of wire as well. Static, OPGW, etc. Suggest inserting the phrase: conductor (or other wire) from a reel..... (Dave Feerst, Winco)	Thank you for your comments. The department is modifying the definition of “sock line” to read as follows: “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.”
Definition of “sock line”. We would concur to add “or other wire” so the definition reads: “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.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)	Thank you for your comments. The department is modifying the definition of “sock line” to read as follows: “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.”
WAC 296-45-67508 Hazard analysis and job briefing.	
This seems to merge the concepts of hazard analysis and job briefing. The two processes are separate and have the requirements separated as below. I suggest rewording subsection (1) to read: (1) Before the commencement of any helicopter construction, maintenance or lifting activity, a Job Hazard Analysis (JHA) must be performed by the employer which, at a minimum must: (a) Define the core tasks; (b) Identify specific hazards; (c) Identify mission specific tasks; (d) Describe procedures or controls used to safely manage or mitigate the hazards; (e) Describe communication procedure with the crew; (f) Discuss fatigue and methods to eliminate or mitigate. (2) A site specific and task specific job briefing must be held each day helicopter construction, maintenance or lifting activities are performed The daily job briefing at a minimum must:	Thank you for your comments. The department is modifying this section to read as follows: (1) Before the commencement of any construction, maintenance, or lifting activity using a helicopter, a job hazard analysis (JHA) must be conducted, which, at a minimum, must: (a) Define the core tasks. (b) Identify specific hazards. (c) Identify mission specific tasks. (d) Describe procedures or controls used to safely manage or mitigate the hazards. (e) Describe the communication procedure to be used with the crew. (f) Discuss fatigue, and methods to eliminate or mitigate it. (g) Specify minimum approach distances (MAD). (h) Describe a site specific emergency action plan.

<ul style="list-style-type: none"> (a) Summarize or recap content of the JHA as applicable to the day's duties; (b) Identify any site specific hazards omitted from the JHA and provide mitigation for those hazards; (c) Identify or establish roles for each person who will be interfacing with the aircraft, or its load; (d) Describe communication with the crew; (e) Specify minimum approach distances (MAD) from energized lines in the work area; (f) Describe the applicable sections of the site specific Emergency Action Plan, such as the locations of first aid equipment and rescue gear. <p>The proposed (2) would then become (3) and should be tweaked to read: An additional job briefing must be held immediately if working conditions change during the course of a job in such a way that creates or reveals new or increased hazards to employees. Working conditions would include..... (Dave Feerst, Winco)</p>	<p>(2) A site specific job briefing must be held each day construction, maintenance, or lifting activities using a helicopter are performed. The daily job briefing at a minimum must:</p> <ul style="list-style-type: none"> (a) Summarize or recap the content of the JHA as applicable to the day's duties. (b) Communicate any site specific hazards not identified in the JHA and provide mitigation for those hazards. (c) Identify or establish roles for each person who will be interfacing with the aircraft or its load. (d) Describe the communication procedure to be used with the crew. (e) Specify minimum approach distances (MAD) from energized electrical lines and equipment in the work area. (f) Describe the applicable sections of the site specific emergency action plan, such as the locations of first aid equipment and rescue gear. <p>(3) An additional job briefing must be held immediately if working conditions change during the course of a job. Working conditions would include weather, wind, and visibility. During the job briefing all affected employees and others, including signalpersons, ground workers, pilots, must be advised of the hazards including a change of operation if needed.</p>
<p>We suggest replacing this whole section with the following: Hazard analysis and job briefing:</p> <ul style="list-style-type: none"> (1) Before the commencement of any construction, maintenance, or lifting activity using a helicopter, a job hazard analysis (JHA) must be conducted, which, at a minimum, must: <ul style="list-style-type: none"> (a) Define the core tasks. (b) Identify specific hazards. (c) Identify mission specific tasks. (d) Describe procedures or controls used to safely manage or mitigate 	<p>Thank you for your comments.</p> <p>The department is modifying this section to read as follows:</p> <ul style="list-style-type: none"> (1) Before the commencement of any construction, maintenance, or lifting activity using a helicopter, a job hazard analysis (JHA) must be conducted, which, at a minimum, must: <ul style="list-style-type: none"> (a) Define the core tasks. (b) Identify specific hazards. (c) Identify mission specific tasks.

<p>the hazards.</p> <p>(e) Describe the communication procedure to be used with the crew.</p> <p>(f) Discuss fatigue, and methods to eliminate or mitigate it.</p> <p>(g) Specify minimum approach distances (MAD).</p> <p>(h) Describe a site specific emergency action plan.</p> <p>(2) A site specific job briefing must be held each day construction, maintenance, or lifting activities using a helicopter are performed. The daily job briefing at a minimum must:</p> <p>(a) Summarize or recap the content of the JHA as applicable to the day's duties.</p> <p>(b) Communicate any site specific hazards not identified in the JHA and provide mitigation for those hazards.</p> <p>(c) Identify or establish roles for each person who will be interfacing with the aircraft or its load.</p> <p>(d) Describe the communication procedure to be used with the crew.</p> <p>(e) Specify minimum approach distances (MAD) from energized electrical lines and equipment in the work area.</p> <p>(f) Describe the applicable sections of the site specific emergency action plan, such as the locations of first aid equipment and rescue gear.</p> <p>(3) An additional job briefing must be held immediately if working conditions change during the course of a job. Working conditions would include weather, wind, and visibility. During the job briefing all affected employees and others, including signalpersons, ground workers, pilots, must be advised of the hazards including a change of operation if needed. (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>(d) Describe procedures or controls used to safely manage or mitigate the hazards.</p> <p>(e) Describe the communication procedure to be used with the crew.</p> <p>(f) Discuss fatigue, and methods to eliminate or mitigate it.</p> <p>(g) Specify minimum approach distances (MAD).</p> <p>(h) Describe a site specific emergency action plan.</p> <p>(2) A site specific job briefing must be held each day construction, maintenance, or lifting activities using a helicopter are performed. The daily job briefing at a minimum must:</p> <p>(a) Summarize or recap the content of the JHA as applicable to the day's duties.</p> <p>(b) Communicate any site specific hazards not identified in the JHA and provide mitigation for those hazards.</p> <p>(c) Identify or establish roles for each person who will be interfacing with the aircraft or its load.</p> <p>(d) Describe the communication procedure to be used with the crew.</p> <p>(e) Specify minimum approach distances (MAD) from energized electrical lines and equipment in the work area.</p> <p>(f) Describe the applicable sections of the site specific emergency action plan, such as the locations of first aid equipment and rescue gear.</p> <p>(3) An additional job briefing must be held immediately if working conditions change during the course of a job. Working conditions would include weather, wind, and visibility. During the job briefing all affected employees and others, including signalpersons, ground workers, pilots, must be advised of the hazards including a change of operation if needed.</p>
<p>This document specifies aircraft system design criteria, such as redundant releases for pilot controls; those are FAA certified systems.</p>	<p>Thank you for your comments.</p>

<p>And the operator cannot modify those systems. And in most cases what this document calls for doesn't exist. So it's very difficult to see how you could call for something that doesn't exist; that the operator is not authorized by the FAA to modify to make something happen. (Dave Feerst, Winco)</p>	<p>The department must retain the ability to address unsafe or hazardous conditions that employees could be exposed to.</p> <p>Any modifications must be in accordance with the manufacturer's specifications.</p>
<p>WAC 296-45-67522 Cargo hooks.</p>	
<p>Cargo hook and hook release design and applicable certifications are governed by the FAA. Design of release systems cannot be modified without FAA's approval. This approval process is onerous and takes years, if allowed at all. Additionally, not all releases are guarded or "designed to prevent inadvertent operation". Providing a guard would in most cases introduce more risk than it would mitigate. Pilots must be able to jettison external loads immediately in the event of other helicopter difficulties such as an engine failure. Logs, water buckets, poles, insulators, and other typical loads that may be dropped are cheap compared to the probable loss of life, not to mention the aircraft, and a greater risk to persons or property on the ground the event a pilot cannot quickly release a load in an emergency. I believe in this instance, this is a subject directly regulated by the FAA as well and that OSHA should not be involved in the regulation of FAA certified equipment. However, if OSHA insists on installing this provision, (1) should limit its applicability to the protection of persons on the sling line. It should read: All cargo hooks utilized for HEC must have the electrical activation device guarded to prevent inadvertent operation. The second part of subsection (1) (as a separate bullet) should read: Cargo hooks must be tested prior to each day's operation to determine that all releases function properly. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department is modifying this subsection (1) to read as follows: (1) All cargo hooks shall have a primary and secondary release mechanism designed and installed as to prevent inadvertent operation. The hooks primary and secondary release shall be tested prior to each day's operation to determine that the release functions properly.</p>
<p>A commenter suggested removing this section since the FAA regulates all installed components of the aircraft and we would concur with that. We agree that this section could potentially be misinterpreted in the future. If the department leaves this section in the rule we request to</p>	<p>Thank you for your comments.</p> <p>The department is modifying this subsection (1) to read as follows:</p>

<p>use the following language:</p> <p>(1) All cargo hooks shall have a primary and secondary release mechanism designed and installed as to prevent inadvertent operation. The hooks primary and secondary release shall be tested prior to each day's operation to determine that the release functions properly.</p> <p>(2) Remain as proposed. (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>(1) All cargo hooks shall have a primary and secondary release mechanism designed and installed as to prevent inadvertent operation. The hooks primary and secondary release shall be tested prior to each day's operation to determine that the release functions properly.</p>
<p>WAC 296-45-67523 Hooking and unhooking loads.</p>	
<p>Subsection (3). While these systems are great where they are an option they are not always available. For instance, on a Steel monopole with a bolt flange for the base, guides may be used to set the pole on the concrete footer. But typically the sling line is slacked and then the ground crew installs a ring of nuts at least hand tight before the helicopter releases the sling line. The proposed provision may have unforeseen consequences, and lead to far greater risk to ground crews if the helicopters must set the pole and then fly away with the pole on the studs but unsecured. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3) by adding: "This does not apply to assembly and erection of steel monopole construction."</p>
<p>We interpret this section that a positive guide system does not apply to the assembly and erection of a monopole system. (Steve Harkin, Pacific Power)</p>	<p>Thank you for your comments.</p>
<p>We interpret this section that a positive guide system does not apply to the assembly and erection of a monopole system. To help in the clarification we suggest that proposed subsection (3) have the following sentence added to the end: "This does not apply to assembly and erection of steel monopole construction." (Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3) by adding a note that states: "This does not apply to assembly and erection of steel monopole construction."</p>
<p>WAC 296-45-67527 Line stringing.</p>	
<p>Subsection (3)(c). We perform more helicopter wire stringing than any company in the world. We use helicopters to string approximately 25,000 miles of wire in the past five years and about four times that in</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3)(c) by changing it to</p>

<p>our company history. Fifteen knots is about as fast as should be procedurally permitted, this is not an easy thing to monitor or govern on an aircraft. Firstly, does this proposed regulation propose to limit airspeed or ground speed? Ground speed would make sense, since airspeed varies widely with the wind direction and has no bearing on the hazards involved with stringing and momentum. Furthermore, airspeed indicators are not accurate in stringing attitudes. However, few helicopters have a radar altimeter to indicate ground speed, and those that do are inaccurate at stringing attitudes. Some GPS units offer ground speed readouts, which are fairly accurate, but not accurate enough to base a potential citation on, particularly, when most stringing is done at ten to fifteen knots; there is not much room for error. Furthermore airspeed of aircraft is regulated by the FAA. Additionally, in tension stringing with a side pull assembly the aircraft controls tension directly, but speed is determined by how much brake is applied to the reel, not by the helicopter directly. If the pilot were to slow down himself by leveling the aircraft before sufficient brake was applied it would drop all of the strung wire to the ground. Lastly, there are situations, such as belly hook stringing, where ten knots may be too fast. This proposed regulation may dupe an inexperienced pilot to attempt belly hook stringing at such a speed and contribute to a crash. We proposed you remove this language all together and leave this matter up to the applicable industry best practice documents such as the HAI's UPAC Guide. (Dave Feerst, Winco)</p>	<p>read: "No pulling operation shall be conducted at a ground speed greater than fifteen mph".</p>
<p>We recommend that in an effort to remove confusion that subsection (3)(c) read as follows: "No pulling operations shall be conducted at a ground speed greater than 15 mph." (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3)(c) by changing it to read: "No pulling operation shall be conducted at a ground speed greater than fifteen mph".</p>
<p>WAC 296-45-67531 Communication.</p>	
<p>Subsection (1). Does this mean that the signalman cannot hook up or</p>	<p>Thank you for your comments.</p>

<p>unhook the load? How is an insulator string delivered to the structure? Are two men required on the ladder to receive the string? We proposed you remove this sentence. The signalman typically is also the groundman or lineman that actually hooks up the load. (Dave Feerst, Winco)</p>	<p>The department modified this section by changing it to read:</p> <ol style="list-style-type: none">(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 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 employees shall 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 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
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	<p>shall 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 be permitted to work unless such employee and others fully understand any changes that have taken place.</p>
<p>We recommend changing the following to make this section clearer. The language currently contained in subsection (1) is rewritten and separated into subsections (1) through (4) for increased clarity. The language in the proposed subsection (2) should be slightly modified for clarity and becomes the new subsection (5). The language contained in the proposed subsections (3) and (4) becomes new subsections (6) and (7). It reads:</p> <p>(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.</p> <p>(2) Signal systems must be understood by the air crew and ground crew, including signalpersons, prior to the hoisting of any load.</p> <p>(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.</p> <p>(4) The lead worker and one top person must also have an operating transmitter and receiver.</p> <p>(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 craft or to hook or unhook the load or do other essential functions. Other employees may not come closer than 100 feet of the aircraft when it is operating.</p> <p>(6) The signals between the signalperson and the operator of the</p>	<p>Thank you for your comments.</p> <p>The department modified this section by changing it to read:</p> <p>(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.</p> <p>(2) Signal systems must be understood by the air crew and ground crew, including signalpersons, prior to the hoisting of any load.</p> <p>(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.</p> <p>(4) The lead worker and one top person must also have an operating transmitter and receiver.</p> <p>(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 not come closer than 100 feet of the aircraft when it is operating.</p> <p>(6) The signals between the signalperson and the operator of the helicopter shall be those submitted to the FAA for the</p>

<p>helicopter shall 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.</p> <p>(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 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 be permitted to work unless such employee and others fully understand any changes that have taken place. (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>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.</p> <p>(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 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 be permitted to work unless such employee and others fully understand any changes that have taken place.</p>
<p>WAC 296-45-67533 Helicopter operation.</p>	
<p>Subsection (1). Remove “and the designated signalperson of such craft”. There may be no signalperson if external loads are not being conducted, or that signalperson is not nearby. Furthermore, the signalperson’s input in this instance does not matter. If the pilot says you are clear to access the rear stowage, inspect the tail, etc., it is ok. Only the pilot can generate hazards by moving the aircraft therefore only his consent matters. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (1) by changing it to read: “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.”</p>
<p>We recommend replacing the language in subsection (1) with the following: “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</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (1) by changing it to read: “Whenever approaching or leaving a helicopter with blades rotating, all employees must remain in full view of the pilot and</p>

<p>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.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>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.”</p>
<p>WAC 296-45-67536 Helicopter work tasks.</p>	
<p>Subsection (2)(a). The last sentence is only true for Class D HEC, not for Class B. 27.865/29.865 are certification standards, not operating requirements. Both only apply to certified load personnel carrying device systems (PCDS) which are only a requirement for Class D loads. Class D loads are essentially limited to passengers for hire, since the FAA expressly states that linemen, workers, cameramen, and those essential to a work activity can be carried as Class B. This sentence should read: For Class D HEC, the sling system must also comply with 14 CFR 27.865/29.865 as applicable. Alternatively, the whole sentence can be deleted since its applicability is limited to passengers, and not employees.</p> <p>Subsection (2)(b)(i). Almost all HEC lifts involve the transportation of tools and materials along with the person. What constitutes cargo under this provision? Furthermore, slings used to transport cargo also have significant potential to injure or kill personnel if they fail. So why the distinction? There may be unforeseen consequences to this rule as well. The nature of powerline work is such that loads often alternate every other load, human/non-human. This could result in forcing a pilot to land dozens, possibly more than 100 times a day to switch lines. I’ve personally seen it as much as 84 times in one day on a job where this was a power company requirement. This would lead to significant potential for human factors errors, miss-rigging and would almost certainly create a greater hazard than the one it mitigates since, if the higher standard is used for cargo lines as well, there is no difference in</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (2)(a) by changing it to read: “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.”</p> <p>The department believes it is necessary to have a higher standard for equipment used when lifting people than when lifting equipment (cargo). Therefore the requirement in (2)(b)(i): “All lines utilized for HEC operations shall be dedicated for HEC and shall not be used for transporting cargo.” This is consistent with the requirement in the crane rule which does not allow personnel platforms used for employees to also be used to hoist materials or tools when not hoisting personnel.</p>

<p>safety. Subsection (ii) dictates ropes have a 10:1 safety factor. It should further stipulate that these ropes be in good condition. If an operator wants to hold this higher standard for ropes used for non-HEC (cargo) as well, why insist the ropes be switched? Perhaps it is noteworthy to OSHA that the UPAC Guide and its member companies which consist of all the major companies in the country that perform HEC discussed this issue at length and determined not to list it as a best practice because of the potential for human factors to create a greater hazard with switching. (Dave Feerst, Winco)</p>	
<p>In subsection (2)(a) we recommend changing the last sentence to read: “For Class D operations the sling system must also comply with 14 CFR 27.865 or 29.865.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (2)(a) by changing it to read: “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.”</p>
<p>Subsection (2)(b)(iv). More than one type of orthostatic shock relief device exists. Many operators use harnesses with integrated rigid seats that are designed to prevent orthostatic intolerance. These devices are not typically hauled around however, since the vast majority of lifts (in our case at least 98%) are very brief in nature, typically under two minutes. Since the point of origin and destination are predetermined its almost inconceivable that a lift that was only supposed to be two minutes in duration ends up taking 5+. In that event, or in any event a lineman complains of orthostatic intolerance the option exists to set the lineman down on the structure, or in the right of way. Devices to mitigate orthostatic intolerance should be available however, and should be used on longer flights. Separate subsection (iv) from (v). (iv) should read: All suspension harnesses used for HEC must be adjusted to</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (2)(b)(iv) by changing it to read: “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.”</p>

<p>the user. (v) should read: Lifting devices, or shock relief devices designed to prevent orthostatic shock must be provided, and must be utilized on flights over five minutes. (Dave Feerst, Winco)</p>	
<p>In subsection (2)(b)(iv) we recommend changing it to read: “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.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (2)(b)(iv) by changing it to read: “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.”</p>
<p>WAC 296-45-67537 Sling and rigging.</p>	
<p>Subsection (4)(c). While I agree that non-conductive materials is a good idea. Steel cables or synthetic lines with an electrical cord (thus conductive) must sometimes be used. I suggest this verbiage: Lines must be comprised of non-conductive materials unless the operator can demonstrate that use of such materials is infeasible or creates a greater hazard. Subsection (4)(e) would the read: Lines must be of the appropriate weight, length, and profile to prevent entanglement with the helicopter rotors. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (4)(c) by changing it to read: “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.”</p>
<p>In subsection (4)(c), it is feasible on heavy lifts conductive materials may be used at times, we recommend (c) to read: “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. (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (4)(c) by changing it to read: “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.”</p>
<p>Subsection (4)(d). The intent of this section would appear to be to prevent substandard ropes from being placed into service by limiting who can make these ropes. The certification requirement however, is only as good at the company that certifies compliance. In fact, of the</p>	<p>Thank you for your comments.</p> <p>The manufacturer’s specifications must be met for any rigging/lifting equipment.</p>

<p>three ropes that I know of that have failed in this industry over the past 30+ years, two were made by reputable sling line manufacturers whom (since the actual rope manufacturer offers no certification) essentially self-certify that the people they utilize are competent. Furthermore, rope manufacturers do not offer this certification. We sought to do this once before and were forced to contract a company from Maine to find something that resembled a certification. Even then, it was not specific to the type of line. We suggest the word certified be replaced with qualified. We also suggest OSHA specify that the technique(s) specified by the rope manufacturer be utilized. (Dave Feerst, Winco)</p>	
<p>WAC 296-45-67545 Refueling operations.</p>	
<p>Subsection (3)(d). We suggest removing “all entrances to”. It has been tried many times to rope or cone off the refueling area for this purpose, but since cones and ropes pose a significant hazard to helicopters, and the refueling area moves as the job progresses, (often 2-3 times each day) the refueling area is typically not barricaded, but instead, isolated. For purpose of this standard, the no smoking placards on the fuel truck should satisfy this requirement. (Dave Feerst, Winco)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3)(d) by changing it to read: “These 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.”</p>
<p>In subsection (3)(d) we recommending replacing the last sentence with: “The refueling area or the fuel truck must be posted with “no smoking” signs.” (Steve Harkin, Pacific Power, Tracy Harness, NECA, Ward Andrews, Wilson Construction)</p>	<p>Thank you for your comments.</p> <p>The department modified subsection (3)(d) by changing it to read: “These 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.”</p>