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Requirements Document

PRC-RD-SH-11183

Personal Protection

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**Project: CH2M HILL Plateau Remediation Company
Topic: Occupational Safety & Industrial Hygiene**

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Description of Change

Rev. 1-2: Removed purchasing information.

Rev 1-1: Added a statement for consideration to be made when selecting PPE where multiple layers of clothing may be required. The IH shall determine applicable correction factors for such instances and include in the hazard analysis.

Rev 1-0:

Expanded Section 2.1 items 1 and 2, and Section 2.5 to regarding minimal dress code to include substantial or safety-toe footwear and high visibility garments; revised Section 2.4.3 relating to head protection; added Sections 2.8 (on High Visibility Garments) and 2.10 (Non-Radiological Contamination Control) requirements; and added an Appendix D to support the new Section 2.10.

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1.0 PURPOSE AND SCOPE

This Level 2 Requirements Document establishes the minimum requirements for protecting employees and visitors from injury due to absorption or physical contact hazards. These are commonly associated with process or environmental conditions, and may require the additional specification of engineering controls, or protective equipment such as eye and face, head, foot, hand, electrical, and general clothing.

Personal protective equipment (PPE) requirements relating to respiratory protection, fall protection, hearing protection, radiation contamination, hazardous waste site work, and fire fighting, are not covered in this document.

This requirements document does not cover the Purchasing requirements for PPE. See Safety Shoes, Prescription Eyewear and Winter Clothing Purchase Policy for more information.

The requirements in this document are based principally on 29 CFR 1910 Subpart I and are applicable to CH2M HILL Plateau Remediation Company (CHPRC) Team employees involved in CHPRC work scope.

EXCEPTION: Construction, drilling, and service subcontractors working under an approved Statement of Work are exempt from the specific documentation requirements of Section 2.1.5, but similar requirements are flowed down to them through Contractual vehicles (e.g., Special Provisions, Statements of Work, Contracts, and Contractor Prepared Job Safety Analysis or Health and Safety Plans as applicable to the work scope, hazards, and controls identified).

2.0 REQUIREMENTS

2.1 General

NOTE: For the tables in this section under the requirement "type" column, "V" means verbatim and "I" means interpreted.

#	Requirement	Type V or I	Source
1.	Head protection, safety glass eye protection, substantial footwear, and high visibility garments shall be worn as the minimal PPE dress code in designated work areas. Safety-toe shoes/boots will be worn where specifically required.	I	29 CFR 1910.132 (a)
2.	Project and Functional Area management shall ensure uniformity and consistency in the application of PPE controls. NOTE: Determination of exclusion areas/activities is a function of management, with worker and Occupational Safety & Industrial Hygiene representative participation / engagement in the decision-making process.	I	29 CFR 1910.132 (a);

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3.	<p>A hazard assessment of work areas, or of tasks conducted within a particular work area, is required to be completed where hazardous conditions may be present which require the use of PPE beyond that identified in Section 2.1.1 and 2.1.2.</p> <p>NOTE 1: <i>"Hazardous conditions" consist of the following: motion capable of causing impact injury or entanglement, high temperatures, chemicals, light radiation, falling or rolling/pinching objects, sharp objects, flying particles/dust, biological hazards, electrical hazards, and co-located work activity.</i></p> <p>NOTE 2: <i>Refer to PRC-PRO-SH-40435, CHPRC Electrical Safety Program Requirements, for assessment requirements relating to electrical hazards.</i></p>	I	<p>29 CFR 1910.132 (d);</p> <p>10CFR851</p> <p>Section 21(a)(6)</p>
4.	<p>Individual(s) performing hazard assessment must possess the requisite skills and knowledge, and have an understanding of the associated safety requirements.</p>	I	<p>29 CFR 1910.132 (d)</p>
5.	<p>Hazard assessment must be documented, serve as certification for the completed assessment, and include the following information:</p> <p>Building location or workplace area.</p> <p>Name of assessor(s).</p> <p>Date(s) of the assessment.</p> <p>The PPE needed for the hazards discovered.</p>	I	<p>29 CFR 1910.132 (d)</p>
6.	<p>Where hazards are found to be present, and cannot be mitigated in a reasonable manner through process/material substitution, engineering or administrative controls, appropriate PPE must be worn by affected personnel based on hazard exposure, comfort, and fit.</p>	I	<p>29 CFR 1910.132 (d);</p> <p>10CFR851</p> <p>Section 22 (b)</p>
7.	<p>PPE must be of safe design and construction.</p> <p>NOTE 1: <i>Some protective equipment must be approved by a Standards Agency (e.g., American National Standards Institute [ANSI]), and can be verified as such by a distinct Code mark or etching.</i></p> <p>NOTE 2: <i>PPE may be employee-provided, but must meet or exceed the requirements of this document.</i></p>	I	<p>29 CFR 1910.132 (c)</p>

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8.	A reassessment for workplace hazards must be completed based on the planned startup of new processes or equipment, change in hazardous material usage, and when trend analysis identifies a pattern in PPE-related accidents.	I	29 CFR 1910.132 (d)
9.	Facility, area, and job-specific PPE requirements must be clearly identified to employees, as well as resident and visiting personnel, to provide hazard warning and information on the appropriate type of protection required.	I	29 CFR 1910.132 (d)
10.	Reusable safety equipment shall be maintained in clean and sanitary condition, and stored in such a manner as to provide protection from damage and accumulation of dust and dirt. NOTE: <i>When used in a radiological environment, evaluate such equipment prior to reuse per CHPRC-00073.</i>	I	29 CFR 1910.132 (f)
11.	The existence of defective/damaged PPE must be reported for repair or replacement, and immediately removed from service.	I	29 CFR 1910.132 (f)
12	Considerations must be made when selecting PPE where multiple layers of clothing may be required. Industrial hygiene (IH) shall determine applicable correction factors for such instances and included in the hazard analysis documentation.	I	29 CFR 1910.132 (d)

2.2 Training

Training in the use of electrical PPE, including insulating rubber gloves, sleeves, and blankets is provided for in electrical safety training for electrical workers. Refer to PRC-PRO-SH-40435 for electrical safety training requirements.

#	Requirement	Type V or I	Source
1.	Training shall be provided for each employee who uses PPE which covers the following: <ul style="list-style-type: none"> • When the PPE is necessary. • What PPE is required to be worn. • How to properly don, doff, adjust, and wear the PPE. • Limitations of the PPE. • Proper selection, care, use, inspection/maintenance, lifespan, and disposal criteria. 	I	29 CFR 1910.132 (f)

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#	Requirement	Type V or I	Source
2.	Written or electronic (i.e. integrated training electronic matrix [ITEM]) documentation must be maintained to verify that the training was both provided and understood.	I	29 CFR 1910.132 (f)
3.	Retraining shall be provided when there is a change in work function/task that renders the initial training obsolete, when there are changes introduced in the type of PPE to be used, or when employee proficiency appears to be diminishing.	I	29 CFR 1910.132 (f)

2.3 Eye and Face Protection

#	Requirement	Type V or I	Source
1.	<p>Protective eye and/or face protection shall be provided and worn where there is a potential for injury from workplace hazards.</p> <p>NOTE 1: <i>An Eye and Face Protection Selection Chart, which provides general guidance, is located in Appendix B of 29 CFR 1910, Subpart I.</i></p> <p>NOTE 2: <i>Where prescription lenses are needed to enhance/correct vision and exposure to eye hazards exist, employees may use ANSI-approved protective eyewear that incorporates the prescription in its design, or use eye protection that can be effectively worn over the prescription lenses. Contact lenses may be worn for vision correction, but are not a substitute for eye protective devices and appropriate industrial safety eyewear.</i></p>	I	29 CFR 1910.133 (a) and (b)
2.	<p>Protective eyewear shall conform to the criteria specified by ANSI Z87.1, and be marked to indicate the impact resistance level. The BASIC IMPACT level marking is "Z87" or "Z87-2"; the HIGH IMPACT level marking includes a "+" mark/sign.</p> <p>NOTE: <i>For exposure to high impact hazards, the selection and use of a HIGH IMPACT frame and lens is the standard of choice.</i></p>	I	29 CFR 1910.133 (a)
3.	The protective equipment shall be reasonably comfortable to wear, fit snugly without interfering with the movements or vision of the wearer, and is not modified from original manufactured condition.	I	29 CFR 1910.132 (d)
4.	Areas where there is an identified eye and/or face hazard potential which cannot be controlled by use of safety glasses alone shall be identified and clearly posted to warn of the hazards and to indicate the appropriate type of eye protection required.	I	29 CFR 1910.132 (d)

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#	Requirement	Type V or I	Source
5.	Employees exposed to a contact hazard with live electrical parts shall wear only non-metal frame eye protection devices.	I	NFPA 70E, Article 130.6
6.	<p>Dark tinted glasses may not be worn inside of buildings, offices, facilities or enclosures - except under written medical prescription <u>and</u> in cases where the blockage of visible light does not create a greater hazard by impeding vision.</p> <p>Lenses other than clear worn indoors must be approved by management and the safety representative.</p> <p>Transition lenses may be authorized by management and the Safety Representative, but only for employees who do not operate equipment between indoor and outdoor locations, or who are not otherwise involved in activities requiring critical acuity (fast reaction to visual stimuli).</p>	I	29 CFR 1910.133 (a) and (b)

2.4 Head Protection

#	Requirement	Type V or I	Source
1.	<p>Protective headgear conforming to the specifications of ANSI Z89.1 shall be provided and used by employees when working in areas where there is a potential danger of head injury due to the hazards of falling or flying objects, or electrical shock or burns.</p> <p>NOTE: <i>The standard for CHPRC employees is the Type I, Class EG hard hat. The Type I provides protection against impact to the top of the shell; the EG classification provides both general purpose and electrical insulating properties.</i></p>	I	29 CFR 1910.135 (a) and (b)
2.	<p>Protective headgear shall not be altered in any way, and must be worn as designed.</p> <p>NOTE: <i>"Bump caps" may be worn only in areas where an assessment verifies that head hazards are limited to "striking one's head against fixed, low-clearance objects", with no potential for injury to the head caused by electrical contact or from falling or flying objects (e.g., impact).</i></p>	I	29 CFR 1910.132 (f)
3.	<p>Hard hats shall be worn so that nothing interferes with the fit or stability of the hard hat, or interferes with the air gap existing between the hard hat suspension and shell.</p> <p>NOTE1: <i>Protective accessories such as hard hat liners, zero hoods, welder's caps, kerchiefs, and those designed by the hard hat manufacturer, to work in conjunction with the hard hat suspension, are acceptable. Examples of hard hat accessories that meet these requirements are provided in</i></p>	I	Manufacturer Requirement (per ANSI Z89.1)

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#	Requirement	Type V or I	Source
	<i>Appendix D. Baseball caps, hoodies, and similar bulky headdress are not allowed.</i>		
4.	<p>Head protection shall be inspected before use. Shells shall be inspected for signs of dents, cracks, penetration and any damage due to impact, rough treatment, or wear; inner suspension liners should be inspected closely for cracks or tears, frayed or cut straps, loss of pliability, or other signs of wear.</p> <ul style="list-style-type: none"> • If the cap has been struck by a forcible blow of any magnitude, both the hard hat shell and suspension should be replaced immediately, even if no damage is visible. • The following simple field test can be performed to determine possible degradation of polyethylene shells: Compress the shell inward from the sides about 1" (2.5 cm) with both hands and then release the pressure without dropping the shell. The shell should quickly return to its original shape, exhibiting elasticity. Compare the elasticity with that of a new shell. If the sample does not exhibit elasticity similar to that of a new shell, or if it cracks due to brittleness, it should be replaced immediately. • Follow manufacturer's recommendations for service life of the hard hat shell and suspension. 	I	29 CFR 1910.135

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2.5 Foot Protection

#	Requirement	Type V or I	Source
1.	<p>Many work activities will require the use of American Society for Testing and Materials (ASTM) F2413, Class 75 Impact Resistant and Class 75 Compression Resistant safety-rated footwear. Commonly referred to as "steel-toed shoes", such footwear shall be provided and used by employees when working in areas where construction and/or demolition related work activities are being performed OR where there is a potential danger of foot injury due to the hazards of falling or rolling objects, sharp objects piercing the sole, or foot exposure to an electrical hazard.</p> <p>NOTE 1: <i>Hazard Assessment Guidance For Falling Objects – It is recommended that safety toe shoes or boots be worn during the routine handling of hard-edged/solid objects, near or above waist level, that weigh more than 15 pounds and have the potential for falling onto the feet.</i></p>	I	29 CFR 1910.136 (a) and (b)
	<p>NOTE 2: <i>Add-on protective devices (e.g., strap-on toe, foot, or metatarsal guards) may be used as a substitute for ASTM F2413-05 safety-rated footwear where such devices provide protection equivalent to the ANSI performance standards.</i></p> <p>NOTE 3: Where required to be worn, the cost of ASTM F2413 footwear will be borne by the employer. See the Safety Shoes, Prescription Eyewear and Winter Clothing Purchase Policy for more information.</p> <p>NOTE 4: <i>Footwear that has deteriorated to a point where the designed protective features have diminished are unacceptable.</i></p>		

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#	Requirement	Type V or I	Source
2.	<p>Substantial footwear of sturdy construction that fully encloses the foot, has a semi-rigid non-slip sole (i.e., gripping traction pattern), and defined heel (no higher than 2 inches) is the minimum requirement for general, non-administrative (e.g., office) work environments. Such footwear must include ankle support if work activity involves climbing or exposure to uneven (unpaved) walking/working surfaces to minimize the potential for ankle twisting, or exposure to objects/materials that pose a contusion or laceration hazard.</p> <p>NOTE 1: <i>The cost for purchase of substantial footwear will be borne by the employee.</i></p> <p>NOTE 2: <i>The following footwear is prohibited from <u>all</u> work areas: moccasins, toning shoes (e.g. shape-ups), open recoil shoes (e.g. Z-coil), flip flops, slippers or other soft soled shoes.</i></p> <p><i>Shoes comprised of canvas/cloth, mesh or composition (e.g., tennis shoes), high heel or open toes/heels are only acceptable in an office or classroom environment.</i></p> <p>NOTE 3: <i>Footwear that is deteriorated to a point where the designed protective features have diminished are unacceptable.</i></p>	I	29 CFR 1910.132 (a)
3.	Approved footwear conforming to Section 2.5.1 and/or 2.5.2 shall be worn in designated areas.	I	29 CFR 1910.132 (a)

2.6 Hand Protection

#	Requirement	Type V or I	Source
1.	<p>Hand protection shall be provided and used by employees where there is a potential for hand injury due to exposure to such hazards as:</p> <ul style="list-style-type: none"> • Skin absorption of harmful substances, • Severe cuts, lacerations, abrasions, and punctures, • Chemical burns, • Harmful temperature extremes. 	I	29 CFR 1910.138 (a)

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#	Requirement	Type V or I	Source
2.	<p>Selection of the type of hand protection shall be based on published product performance characteristics, degree of dexterity required to perform the work/task, and the appropriate application for protection against the hazard(s) identified.</p> <p>NOTE 1: <i>Incumbent in the selection process is the need for a full hazard assessment to address the presence of material/equipment sharp edges. The selection of the proper tool or guarding to protect the user must be considered once the hazards are identified. Where multiple hazards are present each hazard must be evaluated to determine which ones have the higher priorities.</i></p> <p>NOTE 2: <i>Wearing rings and watches is strongly discouraged. Jewelry can catch and cause injuries when climbing, handling materials, or working with machinery.</i></p>	I	29 CFR 1910.138 (b)
3.	<p>Cut or puncture resistant gloves are required whenever abrasion, laceration, or puncture hazards are associated with the task.</p> <p>NOTE 1: <i>ANSI/International Safety Equipment Association (ISEA)-105 or BS EN388 criteria shall be used when assessing cut resistant qualities of a glove. Cut resistance testing measures how well the glove material will resist cutting by a sharp edge. The scale is represented by 1-5, with the higher rating representing a greater cut resistance.</i></p> <p>NOTE 2: <i>Puncture resistance testing measures how well the glove material will resist puncture by a pointed object. The scale is represented by 1-5, with the higher rating representing a greater puncture resistance.</i></p>	I	29 CFR 1910.138 (b)
	<p>NOTE 3: <i>The As Low As Reasonably Achievable (ALARA) Center has samples of cut and puncture resistant gloves.</i></p>		

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#	Requirement	Type V or I	Source
4.	<p>Chemical protective gloves are required when the product presents hazards to the upper extremities. Industrial Hygiene shall perform the chemical evaluation.</p> <p>NOTE 1: <i>Select chemical specific protection based on the task, solution concentration, contact time and unique characteristics of the glove.</i></p> <p>NOTE 2: <i>Supplier product information can be used to provide chemical breakthrough, degradation, and permeation characteristics. Testing data shall be based on ASTM F739.</i></p>	I	29 CFR 1910.138 (b)
5.	Temperature extremes for hot and cold environments along with the person's body characteristics shall be considered when selecting hand protection.	I	29 CFR 1910.138 (b)

2.7 Electrical Protective Equipment

(Rubber insulating gloves, sleeves, blankets, line hose, and rubber matting)

Also refer to PRC-PRO-SH-40435 for additional information on electrical protective equipment requirements.

#	Requirement	Type V or I	Source
1.	Electrical protective equipment shall be provided to and used by employees working in areas where they are exposed to potential electrical hazards.	I	29 CFR 1910.335 (a); NFPA 70E
2.	Selection of class and type of electrical protective equipment shall be based on the maximum use voltages that may be encountered, nature of the work to be performed, and part(s) of the body potentially exposed.	I	29 CFR 1910.137 (a) and (b)
3.	<p>Electrical protective equipment shall be certified as tested and inspected by trained personnel in accordance with the appropriate ANSI/ASTM standard and manufacturer instructions, and maintained in a safe and reliable condition.</p> <p>NOTE: <i>The frequency for testing is established by 29 CFR 1910 at 6 months for gloves, and 12 months for blankets and sleeves used in general electrical work. However, the Project or Facility may elect to test at more frequent intervals.</i></p>	I	29 CFR 1910.137 (a) and (b)
4.	Employees using electrical protective equipment must be trained to inspect for and recognize damage/defect conditions that may affect insulating protective properties.	I	29 CFR 1910.332 (b)

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#	Requirement	Type V or I	Source
5.	<p>Visual inspection of electrical protective equipment must be performed upon issuance for use at the beginning of each workday (prior to use), and after any work is completed which could damage the equipment. Such inspection will include an "air test" (where gloves are used).</p> <p>NOTE: <i>A User Guide Checklist For Insulating Rubber Gloves for "occasional" users (e.g., for use during hand excavation) is available on the Hanford Electrical Safety Program website.</i></p>	I	29 CFR 1910.137 (b)
6.	Any piece of electrical protective equipment that has an expired testing date, or fails visual or functional inspection, shall be removed from service unless/until repaired and retested.	I	29 CFR 1910.137 (b)
7.	Electrical protective equipment repair shall be performed only by individuals trained and qualified to make such repair.	I	29 CFR 1910.137 (b)
8.	<p>Protector gloves shall be worn over electrical insulating gloves except when otherwise determined that the work requires high dexterity/use of fine adjustment techniques, and review of the task(s) verifies that the activities will pose no risk to the integrity of the insulating glove (e.g., exposure to puncturing, cutting, tearing, etc.).</p> <p>NOTE: <i>Other exceptions in the use of protector gloves are identified in 29 CFR 1910.137, Electrical Protective Equipment, Section (b)(2)(vii).</i></p>	I	29 CFR 1910.137 (b)

2.8 High Visibility Garments

#	Requirement	Type V or I	Source
1.	Employees who work in roadway traffic work zones governed by the Federal Highway Administration (FHA) Manual on Uniform Traffic Control Devices (MUTCD) shall be provided with, and wear, high visibility garments when performing activities in the traffic work zone.	I	29 CFR 1926.201(a)
2.	<p>High visibility garments used in these traffic work zones shall be labeled as meeting ANSI/ISEA 107 Class 2 or 3 requirements.</p> <p>NOTE: <i>Class 3 is recommended for low visibility time periods (e.g., adverse weather or twilight/night time).</i></p>	I	ANSI/ISEA Standard 107- 2004

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#	Requirement	Type V or I	Source
3.	Where designated, employees who do not work in roadway traffic work zones shall wear either rated ANSI/ISEA high visibility garments or non-rated high visibility garments, when performing field activities.	I	29 CFR 1926.201(a)
4.	High visibility garments that become faded, torn, soiled, worn, or defaced (reducing the equipment's performance) shall be removed from service and replaced.	I	29 CFR 1926.201(a)

2.9 Miscellaneous/Other PPE

#	Requirement	Type V or I	Source
1.	Work documents or instructions shall prescribe special protective clothing requirements.	I	10 CFR 851.21 and 851.22, Section (a)
2.	<p>Employees shall dress for the nature of work assignments, exposure to the general work environment, and expected climatic conditions.</p> <p>NOTE 1: <i>As minimum protection, use of short-sleeved shirts (with a defined sleeve, covering at least the ball of the shoulder) and long pants/slacks is recommended wherever the possibility of physical or environmental hazard exposure to the shoulders or legs exists.</i></p> <p>NOTE 2: <i>Refer to PRC-PRO-SH-40435 for protective clothing/PPE requirements relating to electric arc flash hazards.</i></p>	I	29 CFR 1926.28 (a)
3.	Special requirements for use of general protective clothing must be communicated to affected members of the workforce. Examples include special protective padding (elbow, knee, leg, arm, and torso), long sleeve shirt or pants, head covering/hairnet, lab coats, aprons, boots, and special vests.	I	29 CFR 1910.132 (d)
4.	Long hair shall be restrained and loose-fit clothing prohibited during operation or general work activity around moving machinery.	I	29 CFR 1926.28 (a); OSHA General Duty Clause
5.	Ensure that chemical PPE is specific to the chemical being used and covers all potential areas of exposure (face, hands, head, torso, and feet).	I	29 CFR 1910.132 (d)

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2.10 Non-Radiological Contamination Control

#	Requirement	Type V or I	Source
1.	<p>IH to determine necessity of a vacuum/wipe down process prior to removal of personal protective equipment where there is a potential for significant accumulation of particulate matter.</p> <p>IH will provide instructional directions on vacuum/wipe down process.</p> <p>Where airborne particulate hazards exist, IH to discuss hazards, signs, and symptoms of exposure, health effects, and controls in pre-job briefing.</p> <p>In areas where dust may contain bio-accumulation wastes, work practices and selection of PPE will conform to National Institute for Occupational Safety and Health (NIOSH) Publication 2005-109, "Histoplasmosis, Protecting Workers at Risk".</p>	I	29 CFR 1910 Subpart I App B
2	<p>Where PPE has visible particle deposition, the doffing procedure shall include a vacuum or wipe down with a damp cloth to remove loose dust from the PPE. Doffing of potentially contaminated protective clothing is performed in a gentle manner that does not agitate particles. Following the vacuum/wipe down, doffing is then performed in a manner consistent with Radiological Control Manual, CHPRC-00073. Dispose of PPE in double polyethylene bags. General guidance on the vacuum/wipe down process is provided in Appendix.</p>	I	29 CFR 1910 Subpart I App B

3.0 RECORD IDENTIFICATION

All records are generated, processed, and maintained in accordance with PRC-PRO-IRM-10588, *Records Management Processes*.

Records Capture Table

Name of Document	Submittal Responsibility	Retention Responsibility
Hazard assessment and reassessment records	Assessor	OS&IH (or included with work documents)
Required training records on PPE use	Training	Training Document Control

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4.0 SOURCES**4.1 Requirements**

10 CFR 851, *Worker Safety and Health Program*

29 CFR 1910, *Occupational Safety and Health Standards*

29 CFR 1926, *Safety and Health Regulations for Construction*

ANSI/ISEA 105-2005, *American National Standard for Hand Protection Selection Criteria*

Federal Highway Administration, *Manual on Uniform Traffic Control Devices, 2009*

NFPA 70E, *Standard for Electrical Safety In the Workplace*

Public Law 91-596, *Occupational Safety and Health Act of 1970 (General Duty Clause)*

4.2 References

ANSI Z87.1-2003, *Occupational and Educational Eye and Face Protection Devices*

ANSI Z89.1-2003, *Industrial Head Protection*

ASTM F739-2007, *Standard Test Method for Permeation of Liquids and Gases through Protective Clothing Materials Under Conditions of Continuous Contact*

ASTM F2413-2005, *Standard Specification for Performance Requirements for Foot Protection*

BS EN 388-2003, *Protective Gloves Against Mechanical Risks*

CHPRC-00073, *CH2M HILL Plateau Remediation Company Radiological Control Manual*

PRC-PRO-IRM-10588, *Records Management Processes*

PRC-PRO-SH-40435, *CHPRC Electrical Safety Program*

5.0 APPENDIXES

Appendix A - Criteria for Purchasing Prescription Safety Eyewear (Safety Glasses)

Appendix B - Criteria for Purchasing Safety Footwear (Safety Shoes/Boots)

Appendix C - Pre-Approved Gloves

Appendix D - Examples of Acceptable Hard Hat Accessories

Appendix E - Vacuum/Wipe Down Process

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Appendix A - Safety Eyewear (Safety Glasses)

Safety Eyewear (Safety Glasses) including Prescription Eyewear

It is a CH2M HILL Plateau Remediation Company (CHPRC) safety requirement that appropriate eye protection be provided to and worn by employees whose work activities expose them to eye hazards, or where eye protection use is otherwise designated. The minimum acceptable form of eye protection is safety glasses that meet the requirements specified in the American National Standards Institute (ANSI) standard Z87.1, *Practice for Occupational and Educational Eye and Face Protection*.

Ordinary prescription eyewear does not provide adequate protection from injury to the eyes from impact hazards, and does not meet ANSI Z87.1 eye protection specifications. Therefore, it is the policy of CHPRC to provide protective prescription eyewear with permanently attached side shields to qualified active employees who need corrective lenses for vision, and whose job routinely requires the use of safety eyewear for protection.

Prescription safety eyewear is purchased in accordance with the [Safety Shoes, Prescription Eyewear and Winter Clothing Purchase Policy](#). Contact your Material Coordinator for assistance.

Transition lenses may be authorized, but only for employees who do not operate equipment between indoor and outdoor locations, or who are not otherwise involved in activities requiring critical acuity (fast reaction to visual stimuli).

NOTE: *The rate at which it takes for a tint change to occur in transition lenses is not instantaneous (e.g., it may take a minute for the fading process to occur), and may present a hazard to workers moving from outdoor light to areas of lower illumination (e.g., indoors).*

Tinted lens safety glasses are authorized only as follows: No. 1 or 2 rose for indoor use (where additional glare protection is needed); No. 2 gray for outdoor use (where filtering of bright light (e.g., sunlight) is needed).

NOTE: *No. 2 gray lenses are basically “sunglasses”, and are not intended for indoor usage.*

A UV coating may be requested when ordering prescription safety eyewear with glass lenses.

To ensure worker protection, an employee may be issued non-prescription (“plano”) eyewear for use over top of their regular street-wear prescription glasses until prescription safety glasses are ordered and received.

Full-face respirators present a unique situation for employees who need prescription glasses. The use of respirator brand and model specific NIOSH approved glasses and mounts inside the face piece of the respirator are required. The ordering of custom prescription optical inserts that are manufacturer and NIOSH approved with the respirator will be ordered from General Stores or via an eBOM. When ordering, be sure to specify the brand, and model for the tight fitting respirator to be worn since eyeglass may not be swapped between different models and brands of respirators. When an employee must wear optical inserts as part of the face piece, the face piece and lenses shall be worn during fit testing of the tight fitting respirator in which they are to be worn. CHPRC will cover the cost of corrective lenses for respirators, upon approval.

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Tips for Proper Care of Prescription Safety Glasses:

1. Rinse lenses with water before wiping or cleaning, as fine dirt can scratch the surface.
(NOTE: Lenses may be scratch-resistant, but are not scratch-proof!)
2. Ammonia-based cleaners (e.g., Windex) can damage lens coatings.
3. Do not use paper products as lens wipes; they are usually abrasive.
4. Avoid handling the glasses when not in use to maintain them in proper adjustment.
5. Store the eyeglasses in a protective case when not in use to prevent accidental damage.

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Appendix B - Safety Footwear (Safety Shoes/Boots)Safety Footwear (Safety Shoes/Boots)

It is a CHPRC safety requirement that safety footwear be provided to and worn by employees whose work activities expose them to the risk of foot injury during the course of their duties. Employees who are routinely assigned to jobs/tasks in environments in which a hazard assessment has identified the presence of hazards requiring the use of foot protection shall wear safety shoes or boots composed of leather, or equivalent, and a defined heel at all times, meeting one or more of the following Foot Protection Code requirements of the American Society of Testing Material (ASTM) International Standard F2413-05, *Standard Specification for Performance Requirements for Foot Protection*.

Safety footwear is purchased in accordance with the [Safety Shoes, Prescription Eyewear and Winter Clothing Purchase Policy](#). Contact your Material Coordinator for assistance.

The ASTM F2413-05 standard covers minimum requirements for the design, performance, testing and classification of protective footwear. Footwear certified as meeting ASTM F2413-05 must first meet the requirements of Section 5.1, "Impact Resistant Footwear", and Section 5.2, "Compression Resistant Footwear". Then the requirements of additional sections such as metatarsal protection, conductive protection, electric shock protection, static dissipative protection, and protection against punctures can be met.

Protective footwear can meet all the requirements of the ASTM standard or only specific elements of it, as long as it first meets the requirements for impact and compression resistance. All footwear manufactured to the ASTM specification must be marked with the specific portion of the standard with which it complies. One shoe of each pair must be clearly and legibly marked (stitched in, stamped on, pressure sensitive label, etc.) on either the surface of the tongue, gusset, shaft, or quarter lining.

EXAMPLE: The following are examples of ASTM code inscriptions that may be found on a piece of protective footwear:

ASTM F2413-05

F I/75/C/75/Mt75

PR

CS

Line #1: ASTM F2413-05. This line identifies the ASTM standard. It indicates that the protective footwear meets the performance requirements of ASTM F2413 issued in 2005.

Line #2: F I/75 C/75 Mt/75. This line identifies the applicable gender (M or F; here it is F) for which the footwear is intended. It also identifies the existence of impact resistance (I), the impact resistance rating (75 foot-pounds) and compression resistance (C) (of 75 or 50 which correlate to 2500 pounds and 1750 pounds of compression respectively). This line can also include a metatarsal protection designation (Mt) and rating (75 foot-pounds).

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Lines #3 & 4: PR & CS. These lines are used to identify footwear made to offer protection from other specific types of hazards referenced in the standard. They are used to designate conductive (Cd) properties, electrical insulation properties (EH), footwear designed to reduce the accumulation of excess static electricity (SD), puncture resistance (PR), chain saw cut resistance (CS) and dielectric insulation (DI), if applicable.

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Appendix C - Pre-Approved Gloves

OEM	Picture	Application	Material	Cut Resistance	Comments
Perfect Fit Gloves, PF570 http://www.perfectfitglove.com/products/product_detail.asp?id=22&catID=2&pseriesid=11		Grey, light weight glove with grey rubberized inner cup	Dyneema/SS	ANSI 4	Good universal light weight gloves with excellent ratings, good grip and dexterity, all crafts noted good overall glove performance.
MCR Grip Sharp http://www.mcrsafety.com/gloves/high-performance-strings/grip-sharp.html		Summer work glove, yellow fabric with leather palm	Kevlar/Leather	ANSI 3	Allows for increased air flow and cooling effect, robust surface in palm. Also sold under "Junk Yard Dog" brand.
Best Gloves T-Flex 8115 http://www.bestglove.com/site/products/detail.aspx?style=8115		Inner liners	Dyneema-Spectra fibers	ANSI 3	Gloves have an extremely low profile that allows for use as an inner inside an asbestos glovebag, or as an adder barrier inside leathers/canvas.
MCR UltraTech 9676 http://www.mcrsafety.com/gloves/high-performance-strings/ultra-tech-dyneema.html		Salt & pepper color with black polyurethane inner cup	Dyneema	EU 3	Similar to Perfect Fit Gloves (PF570), but allows slightly more dexterity.

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OEM	Picture	Application	Material	Cut Resistance	Comments
Hexarmor 4018 Ultimate L5 http://www.hexarmor.com/pfi/product.asp?productID=68&catID=37			*HexArmor® products are cut and/or puncture resistant, NOT cut or puncture PROOF. Always conduct a safe test with your application to determine if the product is suited for your needs.	4018 - HexArmor Ultimate L5	The HexArmor 4018 Ultimate L5 is the perfect solution for mechanics, millwrights, and industrial workers. This glove combines the comfort and dexterity of a mechanic's style glove with added cut and puncture protection on the palm and fingers, and partial back of hand. In addition to ISEA Level 5 cut resistance, the highest rating on the ISEA guideline, the HexArmor 4018 Ultimate L5 has a layer of synthetic leather on the palm for an enhanced grip.
HexArmor 3180 Hercules R8E NSR			*HexArmor® products are cut and/or puncture resistant, NOT cut or puncture PROOF.	Model 3180	The HexArmor 3180 provides significant puncture protection to both the palm and back of hand, both puncture and sharps resistant, the cut resistance is very high – ISEA Level 5.
HexArmor 5033 SteelLeather 111			*HexArmor® products are cut and/or puncture	Model 5033	The HexArmor 5033 combines the leather driver's style



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OEM	Picture	Application	Material	Cut Resistance	Comments
http://www.hexarmor.com/pfi/product.asp?productID=78&catID=38			resistant, NOT cut or puncture PROOF.		glove with added high cut resistant protection on the palm, fingers, and back of hand, providing 10 times the durability of double palmed leather. Back of hand patch provides additional cut protection.

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OEM	Picture	Application	Material	Cut Resistance	Comments
HexArmor 7080 SharpsMaster http://www.hexarmor.com/pfi/product.asp?productID=79&catID=39			*HexArmor® products are cut and/or puncture resistant, NOT cut or puncture PROOF.	Model 7080	The HexArmor® SharpsMaster™ is the ultimate in cost effective needlestick protection. HexArmor® products have the most complete and highest needlestick resistance available on the market. The HexArmor® SharpsMaster™ provides needlestick protection in a nitrile coated glove. This glove is ideal for any job where sharps present a risk. Arm your employees with the best protection on the market. The SharpsMaster™ also exceeds the ISEA Level 5 level of cut resistance. It is constructed with 3 layers of SuperFabric® brand material.
HexArmor AS019S http://www.hexarmor.com/pfi/product.asp?productID=57&catID=4			*HexArmor® products are cut and/or puncture resistant, NOT cut or puncture PROOF.	Model AS019S 19" Protective Sleeve	HexArmor 19" Protective sleeve will protect your arm from sharp metals, glass, wood, and knives.

Appendix D – Examples of Acceptable Hard Hat Accessories

Picture	Item	Picture	Item
	<p>Winter liner with neck protection</p>		<p>Winter liner with neck protection</p>
	<p>Winter liner</p>		<p>Tight fitting knit cap liner</p>
	<p>Do-rag/skull cap</p>		<p>Skull cap</p>
	<p>Full face stretch tube winter liner</p>		<p>Balaclava</p>

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Most tight-fitting fabric stocking caps (skull caps, weld caps, winter liners, etc.) are acceptable providing that:

- The garment does not contain any metal parts or pieces.
- The garment is located below the suspension ribbons (between the user's head and the hat's suspension).
- The garment fits smoothly on the head.
- The hard hat will remain on the head with the suspension adjusted snugly.

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Appendix E – Vacuum/Wipe Down Process

Vacuuming with a low velocity, portable HEPA vacuum is the preferred method to remove and contain debris from PPE. A wipe down with damp towels is another method available for removing particulate from PPE prior to exiting the work area. The vacuum/wipe down shall be conducted prior to doffing personal protective clothing. The vacuum/wipe down may be performed by any worker who is familiar with the work processes. There is no qualification process required to wipe down workers however, the Industrial Hygienist or Field Work Supervisor will demonstrate the proper method prior to allowing worker to perform this task.

The vacuum/wipe down process shall begin at the head and proceed downward, finishing at the feet. Always move in a direction away from the eyes, nose, and mouth. Use a gentle sweeping motion directed toward the floor. When using a damp towel, ensure each pass of the damp cloth is made with a clean portion. Change cloth as it becomes soiled. Multiple cloths may be needed to complete a proper wipe down of a worker's PPE. Always use a new cloth for each new worker. Dispose of cloths in double polyethylene bags. It is anticipated that all particulate will be captured on the damp towels. However, to capture fugitive particulate from PPE, disposable sticky step off pads may be used and disposed of with the used damp towels.