

WP 12-IS.01-6
Revision 5

Industrial Safety Program – Visitor, Vendor, User, Tenant, and Subcontractor Safety Controls

Cognizant Section: Industrial Safety and Health

Approved by: Tom Ferguson

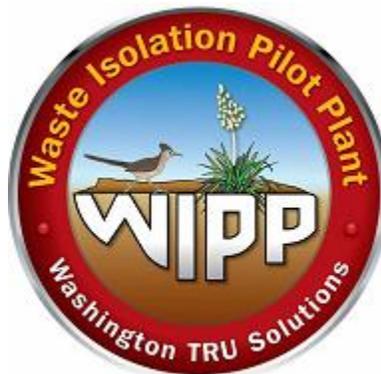


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CHANGE HISTORY SUMMARY

REVISION NUMBER	DATE ISSUED	DESCRIPTION OF CHANGES
4	11/17/10	Incorporated new requirements for Users and Tenants in the Introduction, Section 4.0, and Section 5.0. Added a requirement for Visitors to report all incidents in Subsection 5.3.
5	03/01/11	Editorial changes made throughout. Added reference to the new Electrical Safety Program.

ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
API	American Petroleum Institute
AR/VR	Approval/Variation Request
ATSDR	Agency for Toxic Substances and Diseases Registry
AWG	American wire gauge
CAZ	Controlled access zone
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CH	contact-handled
CMR	Central Monitoring Room
CNS	Central Nervous System
CO ₂	carbon dioxide
CPR	cardiopulmonary resuscitation
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
FPE	Fire Protection Engineer
FSM	Facility Shift Manager
GET	General Employee Training
GFCI	ground fault circuit interrupters
IS&H	Industrial Safety & Hygiene
JHA	Job Hazard Analysis
JSA	Job Safety Analysis
LSD	Lysergic acid diethylamide
M&TE	Measuring and test equipment
MSDS	Material Safety Data Sheet
MSHA	Mine Safety Health Administration
NCR	Nonconformance Report
NEC	National Electrical Code
NFPA	National Fire Protection Association
O&MM	operations and maintenance manual
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration

PCP	Phencyclidine hydrochloride
PEL	Permissible Exposure Limits
PFAS	personal fall arrest system
PIV	Post Indicator Valve
POC	Point of Contact
POD	plan-of-the-day
PPE	Personal Protective Equipment
PSIG	pounds per square inch gauge
QA	Quality Assurance
RH	remote-handled
RWP	Radiological Work Permit
S&S	Safeguards and Security
S/CI	Suspect/Counterfeit Item
SA	Security Analyst
SOW	Statement of Work
SWB	Skeen Whitlock Building
STR	Subcontract Technical Representative
TLD	Thermoluminescent Dosimeter
TLV	threshold limit value
TWA	time-weighted average
U/G	underground
VPP	Voluntary Protection Program
WIPP	Waste Isolation Pilot Plan
WTS	Washington TRU Solutions

1.0 INTRODUCTION ¹

This document is established to ensure a consistent and controlled method of implementing requirements for subcontractors, vendors, tenants, users, and visitors to ensure a safe environment as they perform work or participate in activities at the Waste Isolation Pilot Plant (WIPP) site and facilities. This document specifies the roles and responsibilities of subcontractors and subcontractor personnel in ensuring that activities are performed in a manner that protects the safety and health of all personnel, and complies with applicable regulations, including Title 29 Code of Federal Regulations (CFR) Part 1910, "Occupational Safety and Health Standards"; 29 CFR Part 1926, "Safety and Health Regulations for Construction"; 30 CFR Series (related to Mine Safety and Health); 10 CFR Part 851, "Worker Safety and Health Program"; U.S. Department of Energy (DOE) Orders; DOE Voluntary Protection Program (VPP); and WIPP Integrated Safety Management System requirements. This document is an element of WP 12-IS.01, Industrial Safety Program. The term "subcontractor" is understood to include any persons, sole proprietorship, partnership, corporations, or other business ventures under contract, to Washington TRU Solutions (WTS).

APPLICABILITY

This program document applies to subcontractors and their sub-tier subcontractors, including casual or temporary employees, working under a WIPP subcontract/purchase order at the WIPP site or any of the covered workplaces located in Carlsbad, NM as defined in WP 15-GM.02, Worker Safety and Health Program Description. It also applies to visitors, vendors, tenants, users, and others for which WTS has direct and indirect responsibility for providing a safe work environment. This program document applies in portion to other groups conducting work at the WIPP site including the Land-Withdrawal Area that have contracts directly with the Carlsbad Field Office (CBFO) as they are contractually directed to follow WP 02-EC.12, Site Users & Tenants Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site.

PROGRAM OVERVIEW

The individual disciplines and organizations within WTS may be assigned ownership of specific program requirements within their area of expertise. They will be responsible to analyze requirements and requirement changes associated with their respective disciplines, and to determine applicability to visitor, vendor, subcontractor work and activities. The Manager of Industrial Safety and Hygiene (IS&H) has the overall management responsibility for this program.

This program provides a consistent approach to ensure controls are appropriately implemented and are consistent with WTS applicable requirements.

2.0 VISITORS

2.1 Controls

Visitor safety controls include controls implemented through the site orientation safety film, security access controls, radiological work area access controls, underground access controls, and Personal Protective Equipment (PPE) per the Visitor Job Hazard Analysis (JHA).

2.2 Roles and Responsibilities

The site host is responsible for ensuring the above controls are effectively in place during the duration of the visit, including signatures on applicable Radiological Work Permits (RWPs), meeting the escort and use of Thermoluminescent Dosimeter (TLD) requirements for radiological work area access controls, ensuring appropriate underground escort and badging, for conducting a review of the JHA with the visitor(s), and ensuring the visitor's use of appropriate PPE.

The Manager of IS&H is responsible for ensuring the safety film and JHA provide the appropriate level of visitor information and protection.

The security staff is responsible for ensuring the security access controls are implemented and requirements met in accordance with Section 46.0, Security Controls.

2.3 Reporting

Escorts will report all emergencies and incidents to the Central Monitoring Room (CMR). When no escorts are used, it is assumed that visitors have taken the safety briefing and will report all emergencies to the CMR.

3.0 VENDORS

3.1 Controls

Vendor safety controls include controls implemented through the site orientation safety film, security access controls, radiological work area access controls, underground access controls, safety escort controls, and PPE per the Vendor JHA.

3.2 Roles and Responsibilities

The site host is responsible for ensuring the above controls are effectively in place during the duration of the visit, including signatures on applicable RWPs, meeting the escort and use of TLD requirements for radiological work area access controls, ensuring appropriate underground escort and badging, for conducting a review of the JHA with the visitor(s), and ensuring the visitor's use of appropriate PPE.

The Manager of IS&H is responsible for ensuring the safety film and JHA provide the appropriate level of visitor information and protection.

The security staff is responsible for ensuring the security access controls are implemented and requirements met in accordance with Section 46.0.

3.3 Reporting

Vendors are expected to report all emergencies and incidents to the CMR.

4.0 USERS

Users are groups conducting work at the WIPP site including the Land-Withdrawal Area that have contracts directly with the CBFO. They are contractually directed to follow WP 02 EC.12.

4.1 Controls

User safety controls include controls implemented through the site orientation safety film, security access controls, radiological work area access controls, underground access controls, and any additional directions per their contract, and per their WTS Point of Contact. In addition, since they are conducting CBFO Work Scope the requirements of 10 CFR 851 are applicable.

4.2 Roles and Responsibility

This work is conducted under the direction of CBFO and they are responsible for notifying WTS of work planned, and WTS will assign a site Point of Contact accordingly. The site Point of Contact is responsible for ensuring the above controls are effectively in place during the duration of the visit, including signatures on applicable RWPs, meeting the escort and use of TLD requirements for radiological work area access controls, ensuring appropriate underground escort and badging, for ensuring that User's are aware of their 10 CFR 851 requirements by obtaining a copy of their 10 CFR 851 Implementation Plan and maintaining it on record to respond to questions as they arise.

The Manager of IS&H is responsible for ensuring the safety film provides the appropriate level of visitor information and protection, and for working with the user and Point of Contact to recommend any additional safety controls that may be needed based on the work scope.

The security staff is responsible for ensuring the security access controls are implemented and requirements met in accordance with Section 44.0.

4.3 Reporting

Users are expected to report all emergencies and incidents to the CMR.

5.0 TENANTS

Tenants include groups such as scientists that are not necessarily working to DOE work scope, but are occupying an allotted portion of space at the WIPP site for their use per agreement with CBFO.

5.1 Controls

10 CFR 851 may or may not be applicable dependent on whether their work is being funded by DOE or not. They are directed to follow WP 02 EC.12, Site Users & Tenants Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site. Additional Tenant safety controls include controls implemented through the site orientation safety film, security access controls, radiological work area access controls, underground access controls, and site specific requirements relayed to them through their assigned Site Advisor. The site specific requirements include the applicable portions of the subcontractor safety controls from this document, (based on the work they will be doing), the Integrated Safety Management Description, the appropriate Management Policies (such as the Stop Work Policy), and any additional directions determined by the site advisor in conjunction with the Safety and Health (S&H) Manager. If 10 CFR 851 is applicable, the requirements in 15-GM.02, will apply.

5.2 Roles and Responsibilities

This work is conducted per CBFO agreement and they are responsible for notifying WTS of work planned, and WTS will assign a Site Advisor accordingly. The Site Advisor is responsible for ensuring the above controls are effectively in place during the duration of the work. This includes monitoring and oversight to ensure site required training is maintained, controls are implemented, site required procedures are used effectively, and tenant personnel are appropriately protected from WIPP site hazards. The Site Advisor is responsible for ensuring any changes in WIPP activities (such as a maintenance outage) is coordinated with the tenant to ensure protective controls remain in place, and any tenant activities that would impact site activities are coordinated with appropriate WTS personnel and the Facility Shift Manager (FSM). The Site Advisor is expected to be obtain a copy of any hazard identification documents specific to the tenant, to ensure that WIPP employees are not subjected to unknown hazards, and to maintain an awareness of what controls the tenant is using to protect their own personnel from tenant process generated hazards.

The Manager of IS&H is responsible for working with the tenant and the Site Advisor to recommend any additional safety controls that may be needed based on the work scope.

The security staff is responsible for ensuring the security access controls are implemented and requirements met in accordance with Section 44.0.

5.3 Reporting

Tenants are expected to report all emergencies and incidents to the CMR.

6.0 SUBCONTRACTOR GENERAL INDUSTRIAL SAFETY CONTROLS

Controls for each subcontractor and its lower tier subcontractors include required compliance with all local, state, and federal safety, health, and environmental regulations as well as applicable WIPP site specific and/or DOE requirements which are contained in subcontract specifications. These specific requirements include the Guiding Principles and management, employee expectations in WP 15-GM.03, Integrated Safety Management System Description, the excellence in safety management expected to support activities at a DOE VPP STAR site, and the compliance with 10 CFR Part 851 as delineated in WP 15-GM.02, and the DOE requirements for contractors in 48 CFR §970.2201, "Basic Labor Policies." In addition, specific controls apply.

WTS reserves the right to have removed from the site and deny reentry to any subcontractor employee (including supervision and management), if they are:

- Found to be in a situation of imminent danger to life and health created by violating procedures covering; fall protection, confined space entry and work, lock/tag requirements, respirator protection, hoisting and rigging activities and excavations, where injury could occur.
- Advising an employee to work in an unsafe condition/position.
- Willfully violating any IS&H policy, procedure, rule or regulation.

NOTE: If the subcontractor's superintendent/management knowingly places an employee (including himself) in an imminent danger situation, this subcontract may be terminated for default.

All emergency calls must be made to the CMR. Emergency response personnel will be contacted. Emergency response actions shall be taken in accordance with the following WIPP emergency signals and actions:

SIGNAL	MEANING	ACTION
Ringling Bell	Local Fire Alarm	Evacuate Warn others Notify CMR Follow instructions from your Office Warden
Yelp Tone	Site Evacuation	Report to your assembly area Follow instructions from your Office Warden
Gong Sound	General Notification	This sound will be followed by a verbal message Follow the instructions of the message

The possibility of a site emergency requiring an evacuation is unlikely. However, when an evacuation is required, employees will be notified by telephone or by the site public address system. The west parking lot has been designated as the main staging area for all site personnel. Subcontractors should report to an appointed supervisor, who will be at the staging area.

WIPP procedures for reporting incidents will be followed by subcontractors. All accidents involving injury or illness will be reported immediately to the CMR and then the Subcontract Technical Representative (STR). The CMR will initiate the appropriate (surface or underground) emergency medical response, as required for all injures.

If required, the subcontractor shall make arrangements for the involved personnel in the incident to submit to a post accident drug test and breath alcohol test.

Once emergency conditions no longer exist:

- The subcontractor will complete and submit a Notice of Accident (Attachment 1 of WP 12-SA3130, Occupational Injures, Illnesses, and Close Calls).
- If the injury is more severe than minor first aid, the subcontractor will complete and submit an Injury/Illness Report Form (Attachment 2 of WP 12-SA3130).
- Attachment 1 and 2 will be submitted to management of WTS IS&H.

All critical follow up notifications concerning the reporting and subsequent follow-up of injuries and illnesses will be made in writing to the WTS Manager of IS&H. WTS IS&H personnel are available to provide assistance and support concerning interpretation of Occupational Safety and Health Administration (OSHA) reporting requirements and

case management. Per WIPP implementation of 10 CFR Part 851, case management is required to be coordinated with the WTS IS&H department.

The subcontractor/sub-tier shall perform an accident investigation appropriate to the type of accident /incident/near miss that occurred or shall assist in any investigation performed by WTS and/or DOE. Subcontractor employees shall assist in any investigation as appropriate. As an additional corrective action, subcontractors may be required to develop a disciplinary action plan for violators of Environmental, IS&H, and RADCON requirements. Accident and incident investigations are conducted to determine and correct root causes. Subcontractor supervision is required to investigate any accidents, incidents, or near misses that may occur within their area(s) of responsibility.

The subcontractor/sub-tiers shall participate in any fact-finding meeting. A fact-finding meeting will be conducted, at a minimum, for every recordable, lost-time, or significant accident/incident. If an employee from a particular craft is involved in an incident/accident, another representative of that craft will be required to participate in the accident investigation or fact finding.

In addition, safety concerns shall be thoroughly investigated. Subcontractor employees not only have the right, but also have the responsibility, to respond to unsafe conditions, unsafe behaviors, and near misses. When an imminent danger situation exists, the employee must immediately stop the work and perform necessary follow-up actions.

7.0 WORK PERMITS AND AUTHORIZATION CONTROLS

The subcontractor will be required to obtain work permits or authorizations and approvals from the WTS Representatives before:

- Working on existing utilities or equipment
- Entering confined spaces
- Entering any designed high-hazard areas
- Using torches, electrodes, forges, soldering irons
- Blocking walkways, roads, or restricting traffic
- Starting excavations
- Sandblasting, spray painting, or guniting
- Storing flammable material, such as gasoline, oil, paints, oxygen cylinders, etc.
- Walking or working on roofs, buildings, or equipment

- Drilling, boring, preparing test pits, or using geophysical equipment requiring penetration of surface
- Operating cranes or similar equipment near overhead power lines or pipelines
- Opening or cutting through fire walls or beams
- Fueling or repairing subcontractor equipment on the WIPP property or job sites
- Using lockout/tag out for hazardous energy
- Operating owned/leased heavy equipment on site
- Bringing hazardous chemicals or materials on site

8.0 COMMUNICATION CONTROLS

8.1 Safety Meetings

Safety meetings will be conducted weekly and before the beginning of each work activity. The safety meeting will include the applicable sections of the JHA and work instructions. The subcontractor shall document that each employee participating in the work has attended the safety meeting and the topics that were discussed.

8.2 Stop Work

Rights

Any WIPP employee, any contracted personnel, or any person employed by any company under contract to WIPP is authorized to stop work that may be considered hazardous to personnel, equipment, or environment. This includes the subcontractors employees may be stopped by others, or have the right to stop others if there is concern of a situation being immediately dangerous to life and health. They also have the right to pause for a safety question to ensure safe to continue work. The right to stop work will be discussed with employees and listed as a topic previous to beginning work on site.

Controls

Any worker who identifies a dangerous act or condition that warrants a pause or stopping of work activities shall have the following responsibilities:

- Notify all affected employees that he or she is exercising his or her stop work authority.
- Take actions necessary to protect workers, the public, the environment, and the facility (in that order).
- Notify the FSM, his or her immediate supervisor, and the WTS Point of Contact (POC).

Any worker who is ordered to pause or stop work shall immediately comply.

Every work stoppage whether it is a pause or stop work shall be investigated, and the situation or action shall be appropriately corrected.

The results of any investigation or corrective action shall be communicated to the employee who initiated a pause or stopped work.

No worker, supervisor, foreman, manager, or any other employee shall be allowed to take any act of reprisal, retribution, or discipline against an employee for having exercised his or her pause or stop work authority in good faith.

When an actual Stop Work has been initiated, complete Attachment 1.

8.3 Warning Signs

All posted warning, safety, or security signs and barriers will be observed, as per WP 12-IS.01-1, Industrial Safety Program-Postings, Warnings, and Hazard Identification, 29 CFR 1910.144, Safety Color Code and Accident Prevention Signs, 29 CFR 1910.145, "Specifications for Accident Prevention Signs and Tags" and 29 CFR 1926, Subpart G, "Signs, Signals, and Barricades." Subcontractors will provide barriers, barricades, etc., whenever such protection is needed. Warning signs will be conspicuously posted at each barricade indicating the hazard and the name of the responsible person. Where signs and barricades do not provide adequate protection, particularly along a road, flagman will be used. The FSM shall be notified and approve any barricades to be used or moved by the subcontractor before the subcontractor places any barricades, signage, etc.

9.0 HOUSEKEEPING CONTROLS

Materials and equipment should not block:

- Aisles or doors
- Self-contained breathing apparatuses
- Fire extinguishers
- Fire hydrants and PIVs
- First Aid Equipment
- Emergency eyewash fountains and showers
- Ladders and stairways
- Electrical panels (36" clearance)
- Spill kits

Electrical breaker panels outside lay-down areas will be established through coordination with the WTS Representative. All materials storage areas will be kept clean and neat at all times. Any spill of hazardous materials (as listed by the U.S. Environmental Protection Agency [EPA]) must be reported to the WTS Representatives and called into the CMR. Nails protruding from boards/pallets must be

removed. Work areas will be kept clear of forms, scrap lumber, and other debris. Containers will be provided for the collection and separation of refuse by type. Containers of flammable, combustible, and hazardous materials will be labeled to identify contents and covered when not in use. At the end of each workday, the subcontractor will provide time to pick-up debris. Chemical waste will be removed from the site each day.

All tools, materials, extension cords, hoses, and other equipment are to be stored at the end of the day.

All general construction wastes, such as scrap lumber, and debris shall be cleared from the work area on a daily basis. These materials shall not be thrown from upper levels to lower levels or the ground unless disposal areas are provided and the area below is barricaded or secured. A waste or debris chute may be used to eliminate the hazards.

Subcontractors shall be responsible for providing the appropriate container (such as roll off bins) for the disposal of their waste. These containers shall be removed at the end of the project and are the responsibility of the subcontractor for proper disposal.

All supplies and building materials shall be stored in locations away from walkways and in a manner that will not cause a tripping hazard. All materials shall be stored in a safe, neat, stockpile to allow for easy access and to prevent collapse or falling.

All flooring, stairways, gangways, access ways, and walkways shall be maintained in a clean, dry, and smooth condition.

10.0 SAFETY INSPECTIONS

The subcontractor shall provide frequent and regular safety inspections of the work sites, materials and equipment by a competent employee as identified in the JHA. Detailed written inspection records shall be maintained and available for review by WTS IS&H.

11.0 ROLES AND RESPONSIBILITIES

11.1 Subcontractor Management Responsibilities

In performing work at the WIPP, the subcontractor shall perform work safely, e.g., in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The subcontractor shall exercise a degree of care commensurate with the work and the associated hazards. The subcontractor shall ensure that management of environmental as well as worker safety and health functions and activities become an integral but visible part of the subcontractor's work planning and execution processes. The subcontractor shall ensure that 15-GM.03 and WP 15-GM.02 expectations and requirements are understood and met by personnel and subcontract tiers, including employee rights. Each subcontractor and its lower tier subcontractors will comply with all local, state, and federal safety, health, and environmental regulations, as well as any

applicable WIPP site specific or DOE requirements which are contained in subcontract specifications. It is the responsibility of the subcontractor to ensure that their employees and sub-tier subcontract employees performing the work at WIPP are aware of the rules, requirements, and responsibilities for safety in performing the work scope at WIPP.

Subcontractors will be assigned a work package or purchase requisition cognizant person that will serve as the STR to assist in assuring requirements are understood, and that acceptable methods for meeting those requirements are being used. The POC will monitor work practices to assure compliance with those requirements. You will be held accountable and expected to verify adherence to any site safety rules. Under no circumstances will work be started until the STR or assigned point of contact has been contacted and pre-job requirements are verified as being met. The subcontractor, working with the WTS representative, is expected to establish any additional rules and procedures necessary to conducting a safe operation. The subcontractor is responsible for informing its sub-tiers of the requirements, and for ensuring they are followed. WTS may request the subcontractor to provide proof of knowledge and adherence to all rules and regulations. Violations of the rules and requirements may result in discharge from WIPP property and subsequent loss of contract.

11.2 Submittals Required from Subcontractors

All submittals identified in the Approval/Variation Request (AR/VR) transmitted register will be prepared and processed in accordance with WP 15-PC3041, Approval/Variation Request Processing.

11.3 Subcontractor Field Supervision Responsibilities

Subcontractor field supervision is expected to support implementation of the Environmental, IS&H, RADCON, and Quality Assurance (QA) program requirements with supervisors having the field line responsibility. Field supervision will implement the programs by:

- Identifying hazards associated with activities and controlling or eliminating those hazards when planning and executing work.
- Identifying and evaluating potential hazards and processes or program deficiencies associated with each aspect of a project and communicate these to employees.
- Assigning and communicating safety roles, responsibilities, and accountabilities to employees.
- Ensuring that employees are aware of the hazards in their workplaces and adjacent areas, and that they understand their assigned duties.
- Notifying the WIPP FSM of any stop work action.

- Ensuring that the conditions of a work stoppage are appropriately investigated and documented.
- Conducting surveillance of work environments.
- Investigating and tracking incidents, nears misses, and errors; determining causes; taking corrective actions to prevent recurrence; and performing trend analyses.
- Ensuring that identified deficiencies are tracked to closure.
- Following administrative procedures to enforce disciplinary action when program requirements or instructions are violated.
- Ensuring employees are enrolled in applicable medical surveillance activities.
- Ensuring that a high standard of housekeeping is maintained.
- Providing employees with appropriate and adequate instruction in:
 - Stop work authority
 - Employee rights and responsibilities
 - Job duties and hazards
 - Safety notification process
 - Accident prevention aspects of each job
 - Issue, use, storage, and disposal of PPE
 - Use of materials, tools, and equipment
 - Alarm initiation and response
 - Emergency reporting
 - Evacuations
 - Fire extinguisher use
 - Disciplinary action plan
- Conducting pre-job briefings and plan-of-the-day (POD) meetings.
- Participating in monthly subcontractor safety meetings.
- Addressing safety hazards and work quality deficiencies that are identified by employees and responding in a timely manner.
- Making appropriate notifications to the WTS POC for occupational injury, illness, near miss, unplanned exposure, or work quality deficiency.
- Ensuring that personnel can perform their work tasks safely and effectively within the confines of any temporary or permanent work restrictions.
- Verifying that employee training is appropriate and current for the work activities to be performed and that the employees are qualified to perform their work.

11.4 Subcontractor Employee Responsibilities

Subcontractor employees are expected to take responsibility for their own health and safety, for the safety of fellow employees, and for the quality of the products and services they produce by:

- Recognizing and reporting hazards and work quality deficiencies.
- Using and maintaining tools, equipment, and PPE in the prescribed manner.
- Stepping back in situations to refocus on the task at hand after a break, or by asking for clarification about a task from an immediate supervisor.
- Stopping work in situations of clear and present danger and reporting the situations to supervision.
- Declining to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent danger of death or serious physical harm to the worker.
- Practicing good housekeeping in assigned work areas.
- Working within the constraints of subcontractor program requirements, hazard evaluations, and approved work control documents.
- Participating as required in medical surveillance programs.
- Immediately reporting to direct management any occupational injuries, illnesses, near misses, potential exposures to hazardous agents, or work quality deficiencies.
- Immediately reporting to direct management any non-occupational injury, illness, or condition that might affect or limit employee capability to safely perform assigned job duties.
- Participating in:
 - Safety committees
 - Safety meetings
 - Worksite inspections and hazard evaluations
 - POD meetings
 - Weekly tool box safety meetings
- Requesting any needed information about hazards in the workplace.
- Conforming to the requirements of a drug free workplace.

11.5 Subcontractor Safety Designee Responsibilities

Having appropriate safety background and experience as approved by WTS IS&H.

Having direct access to subcontractor management with full authority to make safety-related changes and resolve safety issues.

Being at the jobsite during all work activities or appointing an alternate to perform this function.

Conducting and documenting daily surveillances of the workplace to identify and correct hazards and noncompliance.

Maintaining a copy of all surveillance activities.

Responding to WTS safety surveillance findings by providing a written corrective action plan within one working day of notification.

12.0 CONSTRUCTION CONTROLS

12.1 Planning

Construction subcontractors will work under the technical direction of a qualified WTS STR. The Statement of Work (SOW), on a case-by-case basis, will specify that each subcontractor working on the WIPP site and other covered workplaces, as defined by WP 15-GM.02, will provide WTS Procurement Services with the following information when bidding a project:

- Record of any U.S. EPA inspection reports or citations for the previous three years, as well as corrective actions taken by the subcontractor.
- Completed EA12IS01-6-1-0, Subcontractor Safety Qualifications form.
- Subcontractors' written safety program which addresses requirements applicable to the work, such as, but not limited to: Subcontractors performing construction work at the WIPP facilities will submit a safety plan and a JHA for the work to be done. The safety plan shall include the company's safety policy, program responsibilities, accident history, and general accident prevention planning. These will include inspection procedures, emergency plans, fire protection plans, and medical safety training as required by the General Provisions of the contract.
- Occupational injury and illness record keeping
- Company's Safety Policy & Program Responsibilities
- Accident prevention plan
- Stop work authority

- Personal protective equipment including respiratory protection
- Medical surveillance
- Inspection procedures
- Hazard communication
- Occupational Exposure Assessment and Control
- Emergency response plan
- Injured employee care plan, including first aid, medical intervention, drug testing, and return to work policy.
- Spill containment and control
- Hearing conservation
- Employee training programs, including certifications and licensing.
- Name or job title of the person who will be on-site and responsible for addressing safety and health issues during times that work is being actively performed by the subcontractors.
- Hazardous waste storage and/or disposal procedures that meet applicable Resource Conservation and Recovery Act requirements.
- Copies of Material Safety Data Sheets (MSDSs) for each chemical that will be used or stored on the project site. The MSDSs will be reviewed and approved by WTS IS&H) before any chemical is permitted on the project or site.
- Written certification that all operators meet all applicable requirements of the following standards, and that material-handling equipment, including cranes, hoists, powered-industrial trucks, chains, slings, and spreaders, have been inspected and meet all applicable requirements of the following standards:
 - DOE-STD-1090-2007, *Hoisting and Rigging Standard*
 - ASME B30 Series, *Cranes and Rigging*
 - 29 CFR Part 1910, Subpart N, "Materials Handling and Storage"
 - 29 CFR Part 1910, Subpart O, "Machinery and Machine Guarding"
 - 29 CFR Part 1926, Subpart CC, "Cranes and Derricks in Construction"

- 29 CFR Part 1926, Subpart N, "Cranes, Derricks, Hoists, Elevators and Conveyors"
- 29 CFR Part 1926, Subpart O, "Motor Vehicles, Mechanized Equipment, and Marine Operations"
- 30 CFR Part 57, Subpart Q, "Safety Programs"
- Written JHA for each segment of the work. The JHA shall be written in accordance with WTS procedure and shall cover all aspects of the job, including hazards that may be encountered, and control methods to ensure work is completed in a safe and healthful manner. The JHA will meet the requirements established by the National Safety Council or Mine Safety Health Administration (MSHA). Any work activity or job step that is not addressed in the approved JHA will not be permitted.
- Methods or programs used to monitor site conditions, document findings, and track corrective actions.

13.0 REQUIREMENTS

The above safety submittals shall be reviewed and approved by IS&H professionals prior to award of the contract. Any changes in the pre-bid safety plan shall be reviewed again by WTS IS&H to ensure implementing/meeting the requirements of WP 15-GM.02 (per 10 CFR Part 851) before work starts. The safety plan will include a specific portion for occupational medical which includes pre-job drug screening, random drug screening, post-incident drug screening, and coordination with WTS Occupational Health per completion and sign-off by the subcontractor, by WTS STR and WTS Occupational Health to document Occupational Health Coordination. This will be completed before the start of work.

A pre-use inspection of tools and equipment will be conducted by WTS IS&H before use. A pre-job briefing including attendance of subcontractor employees that will be conducting the scope of work, the STR, and a representative from WTS IS&H will be required that includes discussion of the JHA, and appropriate details of the scope of work, before work commences. It will also include discussion of the WIPP Stop Work Policy, and safety expectations and responsibilities.

14.0 DRILLING CONTROLS

Subcontractors performing drilling operations within the WIPP Land-Withdrawal Act boundaries are subject to the same requirements as construction contractors and to compliance with the American Petroleum Institute (API) RP 54, *Recommended Practice for Occupational Safety for oil and Gas Well Drilling and Servicing Operations*.

Prior to drilling the subcontractor shall obtain the required authorization or permit from the WTS Manager and representative of IS&H.

All rotary drilling equipment shall have an emergency shut/off kill switch. The location of the switch shall be reviewed with all field staff prior to the start of work.

Prior to moving the drilling rig the operator shall walk down the planned route of travel and inspect it for uneven terrain, obstacles, and overhead obstacles such as power lines. During this walk down a determination of the location of both overhead and buried utilities shall be determined.

All drilling activities that are adjacent to overhead power lines shall be required to maintain a distance of twice the height of the drilling mast.

A spotter shall be used to guide the drilling rig.

The drilling rig shall not be moved with the mast in a raised position.

The drilling rig shall be placed in a level position prior to drilling. This level position may be achieved using outriggers or berms to obtain the necessary stability.

15.0 HAZARD COMMUNICATION

15.1 Controls

Each subcontractor when required by their subcontract shall have a written Hazard Communication program that complies with all requirements of 29 CFR §1910.1200, 29 CFR §1926.59, 30 CFR Part 47, "Hazard Communication," 49 CFR Part 171, "General Information, Regulations, and Definitions," and 49 CFR Part 172, Subpart E, "Labeling." Additional requirements specific to Hazard Communication are specified in WP 12-IH.02-4, WIPP Industrial Hygiene Program - Hazard Communication and Hazardous Materials Management Plan.

WTS IS&H may restrict the use of certain hazardous materials onsite due to occupational health risks, hazardous physical properties or potential employee sensitivity to odors. Hazardous materials and chemicals which meet the ATSDR (Agency for Toxic Substances and Diseases Registry) definition of carcinogenic are prohibited from use at WIPP.

A chemical inventory list shall be provided to the WTS POC through the AR/VR submittal system.

Subcontractors who intend to use or store hazardous materials at the WIPP must submit MSDSs to IS&H for evaluation and approval prior to bringing the chemicals on-site.

The subcontractor shall provide MSDSs to Operations and IS&H prior to work package review, for hazardous materials to be used for work requiring a work package.

The subcontractor shall maintain MSDSs for all hazardous materials brought onto WIPP property. MSDSs for hazardous materials brought onto WIPP property shall be on the

vehicle where the material is kept, or be immediately available to WTS and subcontractor employees.

Labels are required on all incoming containers of hazardous materials or chemicals. The labels shall be clearly legible. All chemical containers shall have labels which contain the following information:

- Product name and identity of the chemical
- Appropriate hazardous warnings
- Name and address of the chemical manufacturer or importer. These labels shall not be removed or defaced.

Subcontractors shall be responsible for the safe use and handling of chemicals and hazardous waste generated from the scope of work that is defined within their subcontract and meet the requirements of 29 CFR §1910.120, "Hazardous Waste Operations and Emergency Response."

16.0 SPECIFIC RESPONSIBILITIES

It is the responsibility of the subcontractors, cognizant WTS management, and project engineers to anticipate effects of the use of hazardous materials on personnel working in adjacent areas, buildings, etc., and to work with WTS IS&H to ensure that personnel working in adjacent areas are not exposed to, or otherwise affected by, the use of these materials. Protective measures may require the use of ventilation, or isolation of the work. In some cases, as an administrative control measure, a task may be delayed to a time when a minimal number of employees are present in the area. Personnel in potentially affected areas shall be informed of the presence and/or use of such hazardous materials.

Where the eyes or body of a person may be exposed to injurious chemical or physical agents, an eyewash station must be located within 10 seconds travel or 100 feet of the hazard. If an eyewash station is not already set-up, the subcontractor is expected to contact WTS IS&H and they will provide one. The subcontractor is expected to provide training in the use of the emergency eyewash and shower equipment to employees who might be exposed to chemical splash hazards. They are expected to maintain a clear path of travel for access to emergency eyewash stations and showers.

17.0 PERSONAL PROTECTIVE EQUIPMENT

Subcontractors shall use engineering or administrative controls to control the hazards. If the hazards cannot be controlled through the use of these methods then the appropriate personal protective equipment shall be used.

The type of exposure shall determine the protective equipment required for the work. The subcontractor is responsible for conducting a pre-job hazard assessment and determining the personal protective equipment required for the job and work activities.

This assessment is expected to be part of the required job hazard analysis. The job hazard analysis and PPE controls will be reviewed by the WTS IS&H staff. The job hazard analysis is also expected to be reviewed and amended as needed when the job conditions or scope of work changes.

PPE selected will properly fit each affected employee.

The subcontractor is responsible for assuring that the appropriate PPE is used, worn correctly, and employees are trained in its use. This training shall be documented and these training records will be submitted to WTS personnel upon request.

Personal protective equipment will be used as defined by the subcontractor's approved JHA and work instructions.

A copy of the approved JHA including identification of the specific PPE will be available at the work location at all times.

The PPE will meet the requirements of 29 CFR Part 1910, Subpart I, "Personal Protective Equipment," 30 CFR Part 57, Subpart N, "Personal Protection," and ANSI Z87.1-1968, *American National Standard for Occupational and Educational Eye and Face Protection*. All employees and sub-tiers shall be provided and shall properly use PPE in accordance with codes and standards as identified in the JHA.

PPE shall not be modified without written approval of the manufacturer.

Additional information specific to the WIPP site concerning PPE can be found in WP 12-IS.01-4, Industrial Safety Program-Emergency and Personnel Protective Equipment.

17.1 Eye and Face Protection

Eye and Face Protection will meet the requirements in 29 CFR §1910.133, "Eye and Face Protection."

Eye protection shall be worn at all times while within a construction work site.

Safety glasses with attached rigid side shields shall be the minimum level of eye protection.

The chart in 29 CFR §1910.133, shall be used to select welding lens filter shades.

Assigned eye and face protection shall be inspected for damage, excessive wear on critical parts, and pitting or significant scratching.

The appropriate eye and face protection for the work to be performed shall be worn.

Contact lenses shall not be worn under the following conditions:

- When hazardous chemical exposure is possible
- When energized high-voltage electrical work is involved
- When in dust-laden environments

NOTE: Contacts may be worn beneath full face respirators, provided that a radiation control technician or industrial hygienist review has concurred.

17.2 Head Protection

Head protection will be used whenever employees are or may be exposed to hazards from falling or overhead objects. Only approved hard hats, as specified in American National Standards Institute (ANSI) Z89.1-2003, *Personal Protection-Protective Headwear for Industrial Workers*, Class G or greater, will be worn on the WIPP site. Bump caps are not acceptable for use on the WIPP site.

Head protection equipment shall be in accordance with 29 CFR §1910.135, "Head Protection."

Subcontract employees should inspect hard hat components before each use for signs of dents, cracks, penetration, and any damage due to impact, rough treatment, or wear. Any hard hat that fails the visual inspection must be removed from service.

17.3 Hand Protection and Skin Protection

Subcontract employees will wear protective gloves and/or other skin protection whenever hands or exposed skin are subject to hazards such as:

- Lacerations, cuts, abrasions, punctures
- Chemical burns
- Extreme heat and/or cold
- Materials which may be absorbed through the skin

Hand protection shall be in accordance with 29 CFR §1910.138, "Hand Protection."

Hand and skin protection selections shall be in accordance with the approved JHA.

17.4 Foot Protection

Each subcontract employee working at the WIPP will wear protective footwear when working in areas where there is a danger of foot injuries or hazards resulting from:

- Falling or rolling objects
- Objects piercing the sole
- Exposure of feet to electrical hazards

Foot Protection equipment shall be in accordance with 29 CFR §1910.136, "Foot Protection" and in accordance with ASTM F2413, *Standard Specification for Performance Requirements for Foot Protections* or its equivalent. Older footwear bearing the now withdrawn ANSI Z41, *Personal Protection-Protective Footwear* designation is still approved as equivalent.

The standard level of foot protection shall be sturdy leather boots or shoes with a substantial sole. (Soles such as those on standard shoes are not allowed on construction sites). Other kinds of foot protection may be allowed, depending on the nature of the hazard involved, as listed in the work control document and per the approved JHA.

Steel-toed or ANSI approved composite toe shoes/boots shall be worn in all construction areas, in the underground, and in the contact-handled (CH) and remote-handled (RH) bay areas. Construction areas where a potential injury to the metatarsal area of the foot exists may require extended protection in the form of metatarsal guards.

Personnel shall be adequately dressed to perform all work activities in a safe manner.

17.5 Electrical PPE

All electrical PPE will be in accordance with the approved JHA.

Only properly rated, approved, and tested rubber insulated gloves, mats, blankets, and tools will be used to protect the worker from energized components. Only hard hats meeting the ANSI Z89.2-1971, *Industrial Protective Helmets for Electrical Workers, Class B*.

A minimum of two levels of insulated protection will be used when working on energized equipment (e.g., gloves and insulated mats, or gloves and insulated tools).

Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or unrestrained metal frame glasses) shall not be worn where they present an electrical contact hazard with exposed live parts. Long hair will be secured to prevent contact with energized equipment or moving parts.

17.6 Cutting and Welding PPE

NOTE: Welding of all metals except mild steel and aluminum requires respiratory protection and personal exposure monitoring.

PPE shall be in accordance with the approved JHA and are expected to meet the following requirements:

- In accordance with 29 CFR 1910, Subpart Q, "Welding, Cutting, and Brazing"
- All welding and cutting PPE are in accordance with ANSI Z49.1-2005, *Safety in Welding, Cutting, and Allied Processes*.
- Clothing is selected to minimize the potential for ignition, burning, trapping hot sparks, or electrical shock. 100% cotton clothing chemically treated to reduce its combustibility to minimum is required for all welding and cutting tasks. Sparks may lodge in rolled-up sleeves, pockets on clothing or cuff of overalls or trousers. It is therefore expected that sleeves and collars are kept buttoned. If pockets are present they must be emptied of flammable or readily combustible materials. Trousers or overalls should not have cuffs. Trousers should overlap shoe tops to prevent spatter from getting into shoes. Frayed clothing is particularly susceptible to ignition and burning and is not allowed when welding or cutting. Dry, hole-free clothing will usually be sufficient to adequately insulate the welder from electric shock. Clothing should be kept clean, as oil and grease can reduce its protective qualities.
- All welders and cutters shall wear protective flame-resistant (welder's) gloves made of leather, rubber, or other suitable materials. All gloves shall be in good repair, dry, and capable of providing protection from electric shock by the welding equipment. Insulated linings should be used to protect areas exposed to high radiant energy.
- Durable flame-resistant aprons made of leather or other suitable materials with insulated linings shall be used to protect the front of the body when additional protection against sparks and radiant energy is needed.
- For heavy hot work, flame-resistant leggings or other equivalent means shall be used to give added protection to the legs.
- Cape sleeves or shoulder covers with bibs made of leather or other flame-resistant material shall be worn during overhead welding, cutting, or other operations when necessary.
- Properly fitted flame-resistant plugs in the ear canals, or equivalent protection shall be used where hazards to the ear canals exist.

18.0 FIRE PREVENTION CONTROLS

18.1 General

In any emergency, the WIPP Emergency Services Personnel are authorized to act directly with the subcontractors personnel.

The subcontractor performing work at the WIPP facility shall practice fire safety at all times. The fire protection needs will be assessed in the subcontractors JHA.

WTS IS&H Personnel will inspect the subcontractor fire extinguishers prior to commencement of work. After work begins, subcontractors shall inspect their fire extinguishers on a monthly basis and documents such inspections. Fire extinguishers will have a tag on the indicating the date of an annual maintenance checks.

Clear access will be maintained to fire extinguishers, hydrants, and Post Indicator Valves (PIVs).

Material storage areas shall be equipped with fire extinguishers adequate for their size, construction, and the materials stored therein.

Smoking is prohibited at or near operations that have fire hazards and the areas will be conspicuously posted with "DANGER – NO SMOKING OR OPEN FLAME" Signs.

Approved safety cans shall be used when handling and using flammable liquids, when used as secondary containers.

Flammable materials are not to be stored with combustibles.

Proper labeling is required on all containers.

The burning of materials is prohibited.

The disabling of a Fire Protection System or Equipment will require authorization and an impairment tag.

The WIPP fire protection equipment is not to be moved or otherwise rendered inaccessible or inoperable unless specific permission is granted by the WTS Representatives and Fire Protection Engineer (FPE).

Self-contained breathing apparatus, first aid equipment, fire blankets, stretchers, eyewash stations, spill kits and shower are not to be removed or blocked without the express permission of the WTS Representative and IS&H.

18.2 Cutting or Welding

Please refer to Section 25.0, Compressed Gases, for WIPP Documented Safety Analysis (DSA)/Technical Safety Requirements (TSRs), prior to cutting or welding.

A Hot Work Permit must be obtained from the WTS IS&H for any welding, cutting, or other "hot work," and returned to the WTS Representative before the start of the job.

PPE shall be worn in accordance with Section 17.0, per the approved JHA.

Additional controls shall be met in accordance with Hot Work Permit.

The fire watch must be trained before they are allowed to perform the task of fire watch. A fire watch is required for all cutting and welding operations.

Subcontractor personnel are responsible for maintaining a trained fire watch. The subcontractor must insure that adjacent combustible materials are protected or removed. A readily available portable fire extinguisher shall be required when performing any hot work. Subcontractors may request to obtain an approved portable fire extinguisher from the WTS Representatives. All welding and cutting apparatus, equipment, and operations shall be in accordance with the current standards set forth in ANSI Z49.1-2005.

Welding, cutting, grinding, and burning shall not be done within 25 feet of any material fuel storage area.

Oxygen cylinders must be stored 25 feet from flammable and combustible materials, including compressed fuel gases, or separated from such materials by a five-foot-high wall with a half-hour fire rating.

Acetylene cylinders must be stored valve end up.

Storage locations for flammable gases will be posted with DANGER NO SMOKING OR OPEN FLAME signs and portable carbon dioxide (CO₂) or dry chemical fire extinguishers will be available for emergency use.

The additional compressed gas cylinder requirements in Section 25.0 will be met.

Metal arc welding shall require the following tint of shade lens in the welding hoods or helmets:

- With electrodes up to 5/32 requires a minimum of #10 shaded lens
- 3/16 to ¼ requires a minimum of #12 shaded lens
- Over ¼ requires a minimum of #14 shaded lens

When there is a potential for the welders to be burned from the molten slag, they shall be equipped with fire-resistant welding jackets or leathers.

18.3 Smoking

Smoking is strictly prohibited in all site buildings and in areas where flammable liquids and gasses are stored, handled, or processed. Obey "No Smoking" signs.

19.0 GENERAL VEHICLE SAFETY CONTROLS

Motor vehicles and operators must meet the motor vehicle safety program requirements in WP 15-GM.02.

Vehicles within the parking lot and perimeter fence must observe a maximum speed limit of 10 mph, unless otherwise posted, and follow directional arrows. All vehicles must be parked in authorized areas only. Vehicles will only be operated by personnel with a valid driver's license. All subcontractor vehicles shall have a company decal or logo attached on the side of the vehicle which is clearly visible and legible. Vehicles will have all required inspection and operating permits. Seat belts, if provided by the manufacture, will be used on all mobile equipment except construction equipment without overhead protection.

Vehicles will not block exits, walkways, fire hydrants, fire lanes, fire-fighting apparatus or other emergency equipment such as eyewash and spill stations. Audible warnings shall be sounded prior to starting or moving equipment. Personnel will not ride in the rear of trucks unless designed for passengers. Riding on side rails or tailgates is prohibited. All vehicles will yield immediate right-of-way to emergency vehicles displaying energized warning lights or sirens. Vehicle parking outside the secured fenced area is restricted to the west parking lot. Vehicle parking at the Maintenance Shop is restricted to maintenance vehicles and vehicles awaiting/under repair. Vehicle parking within the main gate vehicle trap is restricted to security vehicles. Construction equipment will not be left running without operator at the controls. Parking of vehicle in other than designated parking areas will be allowed for pick-up and delivery per FSM direction. All vehicles will be chocked and parking brake set (if provided) when left unattended. Equipment shall be inspected by the operator before being placed into operation and any defect that affects safe operation shall be corrected before use.

20.0 FALL PROTECTION

20.1 Requirements

This document establishes requirements designed to protect workers against fall hazards and the associated risk of personnel injury. This document implements requirements from state codes, 29 CFR Part 1910, Subpart D, "Walking-Working Surfaces," 29 CFR Part 1926, "Personal Protective and Life Saving Equipment," and WIPP specific requirements. Fall protection systems include guardrails, safety nets, personal fall arrest equipment, positioning devices, travel restriction devices, or designated area/safety monitoring systems (as defined for use at WIPP) (see

WP 12-IS.01-5, Industrial Safety Program - Hazardous Locations and Working Surfaces).

Safety monitoring systems may only be used in conjunction with Designated Areas and warning line systems for certain activities on low-sloped roofs. Travel restricting systems protect employees from fall hazards by restricting worker movement to prevent the worker from approaching an unprotected side or edge. Roof work means construction or maintenance actions such as installation, modification, or repair, of a roof or similar building surface. Work on flat or low-sloped roofs means activities that take place where the roof surface is the walking or working surface; examples include fan or filter maintenance that is performed on roof-mounted equipment.

No employee will perform any duties from an elevated piece of equipment, platform, walkway, or other surface, unless properly protected from fall hazards. Fall protection must be provided to personnel exposed to fall hazards, including falling to, into, on, or from:

- Another level
- Holes or openings in the working or walking surface
- Excavations six feet or more in depth
- Dangerous equipment.

Fall protection will be in accordance with 29 CFR Part 1926, Subpart M, "Fall Protection," unless the work is covered by other OSHA standards or WIPP policies that are more stringent.

Fall protection equipment will be provided by the subcontractor in accordance with the approved JHA.

All fall protection equipment must be inspected and approved by WTS IS&H prior to use.

Competent persons, as assigned by the subcontractor, shall be identified in the JHA and perform the following tasks:

- Developing or assisting in the completion of a JHA for whenever an employee will be assigned to or has a potential to be working or traveling within 6 feet of any fall hazard of 6 feet or more.
- Perform formal inspection fall protection equipment every 6 months and affix suitable tags which indicate inspection frequency/dates.
- Routinely assess the effectiveness of the JHA and update to include additionally identified hazards and their controls.

- Review hazards associated with ladder work.
- Review hazards associated with work performed on commercial vehicles and heavy equipment.
- Inspect components from different manufacturers that are mixed together to provide a personal fall arrest system (PFAS) to ensure that they are compatible, that they comply with ANSI Z359.1-1992, *Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components*, subsystems and Components, and that they are used as designed. Body belts (safety belts) will not be used for either fall arrest or restraint at WIPP. A full body harness will be used for all such applications.

Designated WIPP personnel will verify that all individuals needing body harnesses have demonstrated the proper use thereof.

Only locking type snap hooks will be used in fall protection (including travel-restricting) systems.

The terms "leading edge" and "unprotected side or edge," as defined by OSHA, are equivalent at the WIPP site. No person will work within six feet of either a leading edge or an unprotected side or edge without the use of an approved fall protection system in accordance with 29 CFR §1926.501, "Duty to Have Fall Protection." A fall protection plan shall also be written for these activities as required under 29 CFR §1926.502, "Fall Protection Systems Criteria and Practices." This plan shall be written in conjunction with the JHA and provided for review and approval by WTS IS&H prior to the start of work.

Any employee who is exposed to a fall hazard greater than 6 feet shall be protected by a conventional fall protection system, with the exception of the following conditions:

- The employee is working with an approved JHA that specifies fall hazards greater than 6 feet
- A travel restriction system is used
- Work on a ladder which has been reviewed by a competent person
- Work on a commercial vehicle or heavy equipment which has been reviewed by the subcontractor's competent person, and approved by WTS IS&H

Work at heights shall be evaluated during weather conditions that may increase the hazard of falling, including snow, rain, icing, or winds of 25 miles per hour or greater.

Employees climbing to work locations above six feet without a standard access route (such as portable or fixed ladders and stairs, manufactured heavy equipment accesses) shall be provided fall arrest protection or safe access shall be provided.

Fall protection equipment shall meet the requirements of ANSI A10.14-1991, *Requirements for Safety Belts, Harnesses, Lanyards, and Lifelines for Construction and Demolition Use* or ANSI Z359.1-1992.

Fall protection requirements for elevating aerial platforms (scissors-type lifts and condors), manually propelled elevating platforms (Genie personnel-type lifts), and powered platforms will be according to applicable OSHA standards and the manufacturer's recommendations.

Employees may travel to or from a work station without the use of fall arrest or fall protection systems if the path of travel is such that a distance of six feet or more is maintained between the employee and the unprotected side or edge.

20.2 Certification/Training

Subcontractor managers/supervisors will complete a written certification record showing the name and signature of the employee, date(s) of the training, signature and name of the competent person performing the training. Retraining will be performed when the competent person believes that the employees knowledge is inadequate or there is a change in the fall protection system or requirements.

Fall protection training programs will train the employees in the procedures to be followed to minimize these hazards. The employee will be taught to:

- Recognize fall hazards
- Understand when fall protection is required
- Understand what actions are required to determine structural integrity of the working surface
- Recognize when overhead protection is required, including barrier requirements for upper and lower levels
- Perform the inspection of the fall protection equipment and system
- Use fall protection equipment
- Identify attachment points and tie-off configurations
- Understand limitations of the fall protection system
- Handle and store personal fall protection equipment

20.3 Pre-Job Briefing

A pre-job briefing will be conducted by the competent person(s) before each event where personal fall protection equipment is used. At a minimum, the pre-job briefing will include the following information:

- Review of personal fall protection inspection criteria
- The nature of the fall hazard in the work area
- Method of access/egress, and the associated precautions
- Location of attachment points for each employee

Proper installation of barriers to control the area above and below the work area, including overhead protection.

20.4 Equipment Inspections

Fall protection equipment shall be inspected in accordance with 29 CFR Part 1926, Subpart M.

The subcontractor is expected to establish a control system to ensure proper storage and inspection of personal fall arrest equipment, in accordance with OSHA and the manufacturer's recommendations. The system will address, at a minimum:

- Proper storage as required by the equipment manufacturer
- Inspection procedures and schedules, and procedures for taking equipment out of use, including records will be available for review upon request

Inspected fall gear must be marked to indicate the expiration date of the inspection, which in no case will be longer than 6 months from the time of the last inspection. Only fall gear with current inspections will be made available for use.

20.5 Work on Low-Sloped Roofs

Employees working on a low-sloped roof shall be protected by one of the following methods:

- Conventional fall protection system
- Travel restriction system
- Warning line system in combination with a safety monitor
- Safety monitor alone, on roofs with a width of less than 50 feet

Materials and equipment shall not be stored within 6 feet of a roof edge unless guardrails are erected at the edge.

Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or PFAS.

20.6 Protection from Falling Objects

Protection from falling objects shall be in accordance with 29 CFR Part 1926, Subpart M.

20.7 Overhauled Bricklaying and Related Work

Overhand bricklaying and related work shall be in accordance with 29 CFR Part 1926, Subpart M.

On floors and roofs where guardrail systems are in place but need to be removed to allow bricklaying work or leading edge work to take place, only the portion of the guardrail needed to accomplish that day's work may be removed.

20.8 Job Hazard Analysis Involving Fall Hazard

The following items shall be specifically identified in the JHA:

- Each fall hazard associated with a routine task.
- The conventional fall protection system that will be used to prevent a fall or to mitigate the consequences of a fall.
- Specific fall protection equipment and anchor points for each fall hazard, including detailed description of the PFAS.
- Specific fall protection equipment and anchor points for each fall hazard, including detailed description of any travel restriction systems used and the specific location(s) of the anchorage point(s) that will be used, if applicable.

Mitigation step verifying that fall protection equipment has current inspections. Verification of free-fall distances, including the distance added by deceleration devices (The total free-fall distance should be as short as possible but no more than six feet, and prevent fallen workers from contacting surfaces or other object on any lower level).

Method of access or egress and the associated precautions, if applicable.

Methods that will be used to control areas below and above, including protection from falling objects, if applicable.

Rescue provisions for employees who may fall and be unable to self-rescue. For activities where the employees may be unable to perform self-rescue following a fall,

there must be a mitigation control in the JHA requiring contact of the FSM requesting WTS Emergency Services is notified at the start of the job. Upon completion of the job, the FSM will be contacted to notify that the work is complete.

Employees using personal fall arrest systems will work in teams of at least two workers except when working from an elevating work platform, when a person who is protected by personal fall arrest equipment may work alone.

During erection/construction of radio-communications towers, the JHA for fall protection for erectors will be in accordance with the tower manufacturer's requirements. NOTE: The detail of the JHA for travel restriction must include the anchorage point, the anchorage criteria, the lanyard type, lanyard length, other components such as retractable lanyard systems and snap hooks, and the number of workers per anchor.

Employees who will be exposed to fall hazards shall read, review, and sign that they have read and understand the JHA.

WTS IS&H shall review and approve the JHA.

20.9 Personal Fall Arrest Systems

If scaffolding, guardrails, other conventional protection, or equally protective fall protection cannot be used, a personal fall arrest system with adequate anchorage shall be used. In such cases, employees shall be tied off 100% of the time, using two lanyards if necessary.

PFASs shall meet the criteria in accordance with 29 CFR Part 1926.

PFASs shall be installed such that an employee can neither free fall more than 6 feet nor contact any lower level.

PFASs used at hoist areas shall be rigged to allow the employee to move only as far as the edge of the walking or working surface.

A competent person must be identified in the JHA and must review and verify the use, care, and maintenance of self-retracting lifelines in accordance with the manufacturer's requirements, recommendations, or limitations. Any limitations of the lifeline system must be noted in a Job Safety Analysis (JSA) or other work control document.

20.10 Equipment

Compatibility

Fall protection components from different manufacturers that are mixed together to provide a PFAS shall be inspected by a competent person to ensure that they are compatible, that they comply with ANSI Z359.1-1992, and that they are used as designed.

Lifelines 29 CFR §1926.502

Lifelines and their use will be in accordance with 29 CFR Part 1926, Subpart M. Lifeline means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Anchorage 29 CFR §1926.502

Anchorage shall be in accordance with 29 CFR Part 1926, Subpart M. Anchorage means a secure point of attachment for lifelines, lanyards, or deceleration devices.

Fall protection anchorage shall be selected and installed only by a fall protection competent person.

Warning Lines 29 CFR §1926.502

Warning lines shall be in accordance with 29 CFR Part 1926, Subpart M. Warning line system means a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

Controlled Access Zones

Controlled access zones will be in accordance with 29 CFR Part 1926, Subpart M. Controlled access zone (CAZ) means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

Safety Monitors 29 CFR §1926.502

Safety monitors shall be in accordance with 29 CFR Part 1926, Subpart M. Safety-monitoring system means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

21.0 LADDERS**21.1 Requirements**Purchase, Design, and Installation

All ladders used shall meet the design, manufacture, and installation requirements of 29 CFR §1910.25, "Portable Wood Ladders," 29 CFR §1910.26, "Portable Metal Ladders," 29 CFR §1910.27, "Fixed Ladders," and 29 CFR Part 1926, Subpart X, "Stairways and Ladders."

Only Type I Industrial Ladders, Step Ladders of 3 to 20 feet, or Extension Ladders of 10 to 48 feet shall be used.

Training & Inspection

Subcontractors will have a ladder training and inspections program as defined in 29 CFR Part 1926, Subpart X, or will attend the WIPP site approved ladder training

before persons are allowed to use or work from ladders or scaffolds. For additional information on WIPP Ladder Safety (see WP 12-IS.01-5, Industrial Safety Program – Hazardous Locations and Working Surfaces).

Ladders shall be inspected per 29 CFR §1926.1053, "Ladders."

Ladders shall be inspected by the user before each use and after any incident that could cause damage to the ladder.

Manufacturer's warnings, use, limitations, and labels shall be complete and legible on all ladders.

Ladders with defects will be removed from service and tagged as "Warning -Do not use" (or equivalent).

Setting up the Ladder

Ladders shall be set up in accordance with 29 CFR Part 1926, Subpart X.

Safe Use of Portable Ladders

Stepladders shall not be used for access to a higher level work platform.

In the absence of a stairway, ladders shall be provided at all personnel points of access where there is a break in elevation of 19 inches (48 cm) or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

Persons using ladders shall do so in accordance with 29 CFR Part 1926, Subpart X.

If work above six feet will occur, the JHA should address review and determination of the need of a personal fall arrest system.

The JHA shall evaluate work on ladders within 10 feet of exposed electrical equipment. Ladders will be made of non-conductive materials when working within 10 feet of exposed electrical equipment.

Employees shall use both hands for climbing and will face the ladder when going up and down. Tools will be carried in tool belts; other materials will be raised or lowered using a hand line.

Ladders will be positioned to allow employees to reach the work, and moved as the work progresses. Ladders will not be moved while personnel are on the ladder.

Ladders used in areas where they could be displaced by activities or traffic will be secured to prevent accidental displacement, or a barrier will be used to keep activities and traffic away. For example, doors and other accesses will be blocked open, locked, guarded, or barricaded, to prevent use.

Maintenance and Care

Ladders shall be maintained in accordance with 29 CFR Part 1926, Subpart X.

Repairs shall be inspected by a competent person (see def.) to ensure that repairs have been made in accordance with manufacturers' instructions, using only manufacturers' replacement parts.

22.0 SCAFFOLDS

22.1 Requirements

Scaffolding shall be constructed, accessed and used in conformance with the requirements of this document and 29 CFR Part 1926, Subpart L, "Scaffolds." NOTE: For situations when scaffolding identified in 29 CFR Part 1926, Subpart L, cannot be used, the scaffolding shall be designed by a registered professional engineer. Ladders or other makeshift devices will not be used to increase the working height of a scaffold.

The employer shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold (Scaffold Builder/Erector) trained per 29 CFR Part 1926, Subpart L.

A qualified scaffold competent person shall be designated as part of the JHA for the duration of the project, where scaffolding is required.

The competent person shall be responsible for the daily pre-use inspection of all scaffolding prior to allowing access to the scaffolding.

A fall protection competent person, in assistance with a scaffold competent person, shall determine the feasibility and safety of providing fall protection for employees erecting or dismantling scaffolds.

All scaffolding which is leased, rented, or owned by the subcontractor shall have the manufacturer's certifications onsite at the project. WTS IS&H personnel shall inspect the subcontractor scaffolding materials prior to any use onsite.

Additional information on scaffolding at the WIPP site is contained in WP 12-IS.01-5.

22.2 Preparation for Scaffold Operations

A JHA shall be used under the following circumstances:

- For erecting, moving, altering, or dismantling scaffolding
- When scaffolding deficiencies, identified on the scaffold tag, must be mitigated in order to be safe for employees use

Before scaffolding is designed or erected, the work area shall be analyzed to identify existing hazards (overhead lines, elevated temperatures, structural stability, soil

condition, etc.) that could affect personnel as they erect, alter, move, or dismantle, or work on scaffolding.

Hazards that are thus identified shall be mitigated, when possible, as follows:

- Power sources shall be locked out and tagged out, if appropriate
- Barricades and signs shall be used, as appropriate
- WTS IS&H shall be consulted, as necessary
- Scaffolding shall be selected as appropriate to reduce hazards identified during the analysis

Free standing scaffolds with a height-to-base ratio of more than 4:1 will be restrained from tipping through the use of guy lines or by other means.

Access to the scaffolding shall be by means of an approved ladder. Climbing on the frame members for access shall be prohibited.

Modifications or alterations to the scaffolding must be approved by the component person and WTS IS&H.

Workers shall be prohibited from riding on rolling scaffolding when they are being moved.

22.3 Scaffold Inspections

A scaffold competent person as identified in the JHA shall inspect scaffolding in accordance with the requirements of 29 CFR Part 1926, Subpart L. NOTE: Manually propelled mobile scaffolds do not need to be re-inspected after each movement.

When a scaffold is erected and determined safe for use, the scaffold competent person will sign a Scaffold Acceptance Tag indicating that the scaffold has been inspected for that particular day.

Scaffold acceptance tags shall be legible, shall list any deficiencies, shall list any special instructions or limitations, and shall be signed and dated daily prior to work on scaffold.

The completed scaffold acceptance tags shall be attached at all access points.

Scaffold acceptance tags shall be removed from scaffolding during alteration, movement (except manually propelled scaffolds), or dismantling. New tags shall be completed and attached that state "DO NOT USE," use of a scaffold tag holder stating not for use, or an equivalent.

Employees shall inspect scaffold components, as applicable, during erecting, and prior to use, (including prior to use on each shift) and if outdoors, after each snow, rain, and/or wind storm.

Check for structural integrity including nicks, indications that welding arc has been struck, rust, cracks in weld zones and tubing, and hazards that would prevent their use.

If defective components are found, danger tags shall be used to indicate the equipment is defective and must be repaired or disposed of.

Any unsafe conditions found during inspections must be corrected before use.

22.4 Erecting, Altering, Moving, or Dismantling Scaffolding

Scaffolding shall not obstruct aisles, exits, and exit access for a facility, unless an outage request is obtained. NOTE: Outage requests may be required in other situations, such as working on or near elevated power lines. If in doubt, the WTS POC should be contacted.

Structural members (I-beams, roof truss members) to be used in scaffolding shall be inspected and approved by a competent person; assistance from the WTS POC shall be obtained as necessary.

Appropriate signs and barricades shall be used when erecting, moving, altering, and dismantling a scaffold.

The barricaded area shall be large enough to encompass the entire work area and provide an adequate safety buffer to other employees.

22.5 Working from Erected Scaffolding

Scaffolding shall not be used until a scaffold acceptance tag has been attached (scaffolding without an acceptance tag is considered incomplete and under construction).

Scaffolding with an ACCEPTED tag indicating deficiencies shall not be used unless specific work practices and precautions are identified on a work control document.

Employees shall comply with all restrictions and precautions identified in work control documents and procedures.

Weather conditions must be evaluated by a scaffold competent person prior to use of the scaffold. These conditions include snow, ice, rain and wind which must be mitigated as determined by the scaffold competent person prior to use of the scaffold.

The following components shall not be climbed upon for accessing the scaffold platform or other elevated work area:

- Scaffold framing, unless it is an integral, prefabricated scaffold access frame
- Bracing members
- Guardrails

Employees shall not stand or sit on guardrails.

Scaffold framing, bracing, or guardrails shall not be used to secure rigging equipment (chain or wire rope hoists, block-and-tackle, etc.) for hoisting.

Scaffold components shall be stored as follows:

- Away from hazardous atmospheres
- In a manner that will not cause added stress and fatigue to the components
- In accordance with the manufacturer's instructions
- In a manner that does not create a hazard to personnel placing or removing the components from storage

23.0 AERIAL LIFTS AND ELEVATING PLATFORMS

23.1 Requirements

At the WIPP site, some maintenance and repair activities on flat roofs expose workers to fall hazards where there are no suitable anchorage points on the building structure. In these situations, it is permissible to use the anchorage point of an aerial platform as an anchorage point for a personal fall arrest system when the work conforms to the requirements in WP 12-IS.01-5. WTS IS&H will help determine this feasibility as part of the JHA review and approval process. For additional information on Aerial Lifts and Platforms at the WIPP site (see WP 12-IS.01-3, Equipment and Tools).

Training shall be in accordance with 29 CFR §1910.67 and 29 CFR §1926.453, "Aerial Lifts."

Each operator shall be instructed in the safe and proper operation of the aerial lift or elevating work platform using the manufacturers operating and maintenance manual.

The operator shall be trained either on the same model of aerial lift or elevating work platform or one having operating characteristics and controls consistent with the one to be used during actual work site operations.

Training shall be hands-on use to successfully demonstrate the trainee's proficiency to the satisfaction of the qualified person designated to administrate the training program. A record of the trainee's aerial lift and elevating work platform instruction shall be maintained.

Personnel shall observe all requirements from work control documentation and the JHA when using aerial lifts or elevated work platforms.

Aerial lifts and elevating work platforms shall meet the requirements of the manufacturer and the requirements of 29 CFR §1910.67 and 29 CFR §1926.453.

Aerial lifts and elevating work platforms shall be inspected each day, before use, using the manufacturer's recommendations.

The following requirements shall be observed when working with lifts and platforms:

- Vehicle-mounted boom platforms shall not be operated within 50 feet of overhead electrical lines.
- Fall protection equipment (harness and a self-locking/self-closing lanyard) shall be worn and shall be attached to the boom or basket when working from or traveling in an aerial lift. NOTE: The fall protection equipment is not required in scissor lifts or aerial lifts that telescope vertically and do not articulate, and that have manufacturer-designed fall protection systems such as guard rails, UNLESS such fall protection equipment is specifically required by the manufacturer.
- Workers shall not leave aerial lifts or elevated work platforms when in the elevated position, unless specifically indicated on the work control document and allowed per the JHA.

Aerial platforms will not be used outdoors during adverse weather conditions, when winds exceed manufacturer's operations and maintenance manual (O&MM) requirements, or in other adverse conditions that could affect the safety of personnel. If not addressed in the O&MM, the operator will limit the work when winds reach 20 miles per hour and suspend the work at 25 mph. The specific conditions shall be included in the JHA.

24.0 ACCESS TO THE UNDERGROUND FACILITY

Access to the underground (U/G) facility is limited to personnel with the appropriate level of required training according to MSHA, found in 30 CFR Part 48, "Training and Retraining of Miners." WIPP subcontractors who have a need to go U/G and are not U/G qualified shall be escorted by qualified personnel. If the subcontract personnel are "regularly exposed" to hazards in the U/G, or if they are going to go U/G more than five days per year total, they must attend hazard training in accordance with 30 CFR Part 48.

Access control for the U/G facility is administered by WTS U/G Operations (see WP 04-AD3013, Underground Access Control).

Subcontractors working in the U/G are required to wear clothing that covers the shoulders and midriff of the upper torso, long pants, and steel-toed shoes. They are provided with and instructed in the use of the additional U/G required PPE which consists of the following, at a minimum:

- Miner's hard hat
- Self-rescuer
- Individual electric lamp
- Brass tag
- Safety glasses (including side shields)
- Hearing protection if entering areas so designated

Personnel must be capable of physically accommodating the PPE, independently using the PPE, and independently seeking the nearest point of safety in the event of a hazardous condition. Subcontract employees will be prohibited U/G access unless they can demonstrate the capability of wearing and using the PPE properly.

25.0 COMPRESSED GASES

All use of compressed gas cylinders by subcontractors shall follow the requirements in accordance with 29 CFR 1910, Subpart H, "Hazardous Materials."

Storage, transportation, and use of compressed gas cylinders is highly regulated at the WIPP site. The WIPP DSA and TSRs require specific surveillance requirements that must be completed prior to/during compressed gas cylinder storage, transport, and use. The assigned WTS POC is responsible to coordinate compressed gas cylinder storage, transport, and use within the WIPP fenced areas and ensure that all subcontract employees fully understand the applicable requirements before starting any scope of work involving compressed gases. Applicable WIPP DSA and TSRs must be followed, with the most stringent requirement being met.

25.1 Purpose

This document provides requirements for the use, transportation, and storage of compressed gas, to ensure that hazards are controlled to minimize the risk to employees and waste handling and storage operations. This document implements requirements from codes and standards along with WTS requirements (see MW100073, Transport, Storage and Use of Compressed Gas Cylinders).

25.2 Applicability

This document applies to all subcontractors who use, transport, or store compressed gases or who use high-pressure compressed gas systems at the WIPP site, as specified in their contract with WTS. Additional requirements may be assigned to cover

the handling of fission-product gases, such as xenon or krypton, per the task specific JHA. Stricter requirements may be imposed by subcontractors upon their employees or sub-tier subcontractors. The requirements of this document and the applicable TSRs must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

25.3 Requirements

Personnel who operate, maintain, or modify compressed gas equipment, systems, and associated equipment shall be trained to operate those systems safely before assignment. Training shall be repeated as needed to maintain proficiency. Breathing air couplings shall be incompatible with outlets for nonrespirable plant air or other gas systems to prevent inadvertent servicing of air-line respirators with nonrespirable gases.

The following requirements shall be followed as stated in 49 CFR Part 171 and 49 CFR 173, Subpart G, "Gases; Preparation and Packaging."

Valve protection caps will be in place when compressed gas cylinders are transported, moved, or stored.

Cylinders valves will be closed when work is finished, and when cylinders are empty or moved.

Compressed cylinders will be secured (roped or chained) in an upright position at all times, unless cylinders are being moved. Acetylene cylinders shall always be in the upright position.

Gas regulators will be in proper working order and designed for the specific gas(es). Regulators will be removed before gas cylinders are relocated.

Cylinders will be marked or stenciled to identify contents.

Compressed breathing air will meet OSHA (29 CFR 1910 Part 134, "Respiratory Protection") and/or MSHA specifications for breathing air quality.

Cylinders will have current hydrostatic tests.

Compressed air for cleaning and drying operations will never exceed 30-PSIG (pounds per square inch gauge).

Compressed air will not be used to blow dust or dirt, etc., from personal attire.

Suitable pressure regulating devices shall be used where gas is admitted to systems having pressure rating limitations lower than maximum cylinder supply pressure.

Valve outlet connections shall comply with Compressed Gas Association (CGA) V-1, *American National, Canadian, and Compressed Gas Association Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections*.

Operating parameters and training requirements for specific compressed gas systems shall be developed and implemented, or the vendor may be requested to take the WTS Compressed Gas Cylinder Safety class.

There shall be no attempt to repair, alter, or otherwise tamper with cylinders, isolation valves, safety relief devices, or other components of a compressed gas system.

Subcontractor supervision shall conduct frequent surveillances to ensure compliance with this document, and cylinder areas under the control of the subcontractor shall be inspected monthly.

Valves, regulator connections, and other related piping connections shall not be forced or cross-threaded.

Established control measures and precautions shall be followed.

Compressed gas cylinders shall contain pressure relief devices.

Ventilation requirements for the discharged gas shall be evaluated and prudently controlled.

Compressed gas cylinders shall be inspected before handling or using them to ensure that the cylinders are not visibly damaged and the cylinder contents are clearly labeled on the external surface with either the chemical or trade name of the gas.

Compressed gas cylinders shall be inspected before handling or using them to ensure that markings, labels, decals, tags, and stencil marks attached by the supplier for identification of contents have not been removed or defaced.

The subcontractor shall contact a WTS POC if there is doubt as to the proper label for a compressed gas cylinder.

Compressed gas lines shall be marked as to their contents, or the contents shall be readily apparent by the proximity to their source.

At least 8 out of 12 inches of parallel sections of oxygen and fuel gas hoses shall be visible for line identification and inspection.

25.4 Receiving Areas

When compressed gas cylinders are received, they shall be inspected to ensure that the cylinders are properly marked and labeled and are not visibly damaged (cylinders delivered directly to the site of use will be inspected by the user before they are connected for service).

25.5 Connecting and Using Compressed Gases

Suitable pressure regulating devices shall be used in all cases where gas is admitted to systems having pressure rating limitations lower than the cylinder pressure.

Before a regulator is removed from a cylinder, the cylinder isolation valve shall be closed and regulator shall be relieved of gas pressure.

With the exception of ongoing processes or operations (for example, analytical instrumentation), regulators shall be removed from cylinders at the end of each work shift.

Only regulators that are approved and designed for the gas and cylinder in question shall be used.

White lead, oil, grease, or any other non-approved joint compound shall not be used for sealing oxygen system fittings.

Only solder or litharge and glycerin or other approved joint compounds shall be used for sealing oxygen system fittings.

Two-stage regulators for inert gases shall be equipped with two relief valves that protect the regulator diaphragms and gauges from excessive over-pressure.

Single-stage cylinder regulators (except acetylene regulators) shall be equipped with a single relief device that shall be set to relieve at not over the highest graduation on the low-side gauge.

Gas regulators used for corrosive gases, such as chlorine and fluorine, shall only be disassembled and inspected in accordance with vendor recommendations by a factory-trained person qualified to perform this type of work.

Compressed gas systems shall be protected by reverse flow or check valves if they could be contaminated by feedback or process materials; check valves and/or traps shall be checked and maintained on a regular schedule to ensure proper ventilation.

Flash-back arresters shall be placed at regulators and used with oxygen/fuel gas systems.

Any equipment (cylinder, regulator, hose or other associated hardware that defines a pressure boundary) that shows excessive corrosion, pitting, denting, burns, or other irregularities shall be tagged out-of-service, removed from service, and if subcontractor owned they must be removed from the WIPP site.

Any foreign material shall be cleared from the valve port before a regulator is installed on a compressed gas system. Before a regulator is installed, the valve shall be slowly opened to blow any foreign material out of the port. A person shall not be facing the port during this operation.

Relief valves shall be safely vented on regulators for use with flammable, toxic, or radioactive gases.

Explosions or spontaneous fire may occur if flammable gases or organic materials come into contact with oxygen. Gas/material incompatibilities can result in catastrophic failures. Oxygen will dramatically increase the flammability of ordinary combustibles.

Regulators, manifolds, and their related components shall not be interchanged from one type of gas to another without a qualified person evaluating the change in application.

Connections shall be kept tight to prevent leakage.

Leak detection methods shall not generate additional hazards.

If a cylinder leak cannot be remedied by simply tightening a valve gland or packing nut, then the valve shall be closed, and the equipment shall be tagged stating that the cylinder is unserviceable.

Leaking compressed gas systems shall be reported to supervision and safety personnel for corrective action as soon as they are discovered.

If a situation appears serious because of escaping gases, contact the CMR, warn others in the immediate area to evacuate, and the CMR will initiate emergency procedures.

Gases may present numerous hazards, including asphyxiation, flammability, corrosivity, etc.

Cylinder valves on empty cylinders shall be kept closed to prevent internal contamination of the cylinder; valve protection caps shall be installed.

Pressure shall never be left on a hose that has been placed in storage.

Removable keys or handles shall be kept on valve spindles or stems while cylinders are in service.

Cylinder pressure shall not be drawn below 25 psig, to prevent siphoning impurities into the cylinder.

Empty cylinders shall be identified using a tag and shall be removed from the work area.

Cylinder isolation valves shall be opened slowly, with the valve opening away from the body and other persons.

Wrenches or tools that are not provided or approved by the gas manufacturer shall not be used for opening cylinders.

Oxygen shall not be used to purge lines, in pneumatic tools, for dusting clothing, or as a substitute for compressed air.

Oxygen cylinders shall not be handled with greasy or oily hands or gloves.

Cylinders of oxygen, acetylene, or other fuel gases shall not be placed within a confined space.

Gas cylinders shall not be taken into confined spaces without proper evaluation and controls being in place.

25.6 Transportation and Handling

Please refer to Section 25.0, Compressed Gases, for WIPP DSA/TSRs, prior to transporting and/or handling compressed gas cylinders at the WIPP.

The following requirements shall be followed in accordance with 49 CFR Part 177, "Carriage by Public Highway" and 49 CFR 178, "Specifications for Packagings."

Compressed gas cylinders shall be transported in an upright position and shall be securely restrained at about two-thirds their height (or as necessary to prevent cylinder from falling), with the protective caps in place.

Valves shall be closed, regulators shall be removed, and valve-protection caps shall be installed (when provided) before cylinders are moved, unless the cylinders are firmly secured on a special carrier intended for this purpose and the valves are protected.

When cylinders are moved mechanically by crane or hoist, they shall be secured with chain or rope tie-downs to a cradle, boat, platform, or specifically designed lifting device.

Magnets or choker slings shall not be used to hoist or transport individual cylinders.

Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed.

Bars shall not be used to pry valve protection caps loose. Cylinders shall be handled carefully.

Cylinders shall not be lifted vertically by the cap, dropped, or permitted to strike violently against each other or against other surfaces.

Cylinders shall not be used as rollers for moving materials or for supporting other items.

A two-wheel or specially designed cylinder cart with a chain tie-down shall be used to move a cylinder within a building, where practical. Oxygen cylinders shall never be stored near flammable or combustible materials such as oil, grease, reserve acetylene supplies, or other fuel gases.

A suitable cylinder truck, chain, or other steadying device shall be used to keep cylinders from being knocked over while in use.

25.7 Storage Locations

Please refer to Section 25.0, Compressed Gases, for WIPP DSA/TSRs, prior to storing compressed gas cylinders at the WIPP.

Compressed gas cylinders shall be stored in assigned places that meet the following criteria:

- Cylinders will not be knocked over or damaged.
- The area is dry and well ventilated (for inside storage only).
- Cylinders will not be exposed to continuous dampness.
- Cylinders are not near sources of intense heat such as furnaces, steam lines, or radiators.
- Cylinders will be shaded from direct sunlight and not stored at temperatures above 125°F.
- Cylinders must be stored in an area free from grass, weeds or any combustible materials.
- Cylinders containing flammable or combustible materials shall be separated from oxidizing agents by at least 20 feet or a noncombustible barrier at least 5 feet high with a fire resistance rating of at least 30 minutes. Fuel gas and oxidizer gas shall be stored in appropriate locations.

For storage in subsurface locations, a documented safety review shall be obtained before cylinders are stored.

Compressed gas storage areas shall be prominently posted with the names of the gases to be stored and a "No Smoking or Open Flames" sign.

The following precautions shall be followed when storing cylinders:

- Nested cylinders shall be held together using a chain or other device to prevent falling or tipping.
- All nested cylinders shall be wall supported. Cylinders shall be placed so they cannot become part of an electric circuit. Cylinders shall not be stored in exit pathways.
- Cylinders shall be stored in the upright position.

- Cylinders shall be securely restrained to a firm structure, at about two-thirds their height. A properly sized cylinder stand shall be used to support a cylinder where a tie-down bracket cannot be attached.
- Cylinders shall be kept far enough away from hot work so that sparks, hot slag, or flames will not reach them (if this is not possible, fire-resistant shields shall be provided for the cylinders).

When cylinders are used in conjunction with electric welding, precautions shall be taken against accidentally grounding the cylinders or allowing them to be burned by electric welding arc.

Boxes used to store gas hose shall be ventilated, with the exception of hoses that have never been used.

Welding cylinders are to be securely fastened to read-use racks or carts. The welding gauges are to be removed and the caps replaced, when not in use.

Empty cylinders are to be marked by some unique method and then stored separately from full cylinders.

25.8 Refilling Cylinders

Vendor-supplied compressed gas cylinders shall be refilled by the vendor only.

25.9 Fuel Gas and Oxygen Manifolds

Fuel gas and oxygen manifolds shall bear the name of the substance they contain in letters at least 1-inch high, either painted on the manifold or on a sign permanently attached to it.

Rooms or enclosures that house manifolds serving compressed gas systems shall be kept locked, restricted for entry of unauthorized personnel, and posted with signs alerting employees of the danger.

Fuel gas and oxygen manifolds shall be placed in safe, well ventilated, and accessible locations.

Manifold and header connections shall be capped when equipment is not attached. Manifold hose connections between fuel gas and oxygen manifolds and supply header connections shall not be interchangeable. NOTE: All manifold design and use needs to go through a safety review to ensure compliance with applicable standards. Some gases may carry solvents with them (for example, acetone in acetylene) or corrosive contaminants (for example, water vapor in chlorine or hydrogen chloride).

Manifold systems shall be designed and manufactured of materials suitable for the particular gas, potential contaminants, and service for which they are intended and in compliance with OSHA, ANSI and CGA standards, and National Fire Protection

Association (NFPA) Standards 50, Bulk Oxygen Systems as Consumer Sites, Section 24; NFPA 51, Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Process; NFPA 51B, Fire Prevention in Use of Cutting and Welding Processes; and NFPA 55, Storage, Use, and Handling of Compressed and Liquefied Gases.

All flammable gas manifolds shall be electrically grounded.

Smoking shall be prohibited, and there shall be no source of potential ignition in areas where flammable compressed gas cylinders are connected to manifolds.

26.0 DEMOLITION

A pre-demolition engineering survey shall be conducted to determine the condition of the framing, floors, walls, and possibility of unplanned collapse of the structure.

All utilities that may be impacted by the demolition shall be protected or relocated.

Barricades along with warning signs shall be installed for areas into which materials are dropped through holes in floors without the use of chutes. These barricades shall be a minimum of 42 inches in height and installed at least 6 feet back from the projected edge of the openings above.

Subcontractor shall remove all debris and materials from floor arches and adjacent areas for a distance of 20 feet before beginning demolition.

27.0 LOCKOUTS AND TAGOUTS

27.1 Requirements

All subcontractors who perform work at the WIPP shall follow and require their employees to follow WTS management requirements when working with or around sources of hazardous energy for systems owned or controlled by WTS. The isolation of energy sources shall be conducted using WTS lockout/tag out program (see WP 04-AD3011, Equipment Lockout/Tag out) for these systems.

On all construction subcontracts the isolation of hazardous energy sources shall be documented in accordance with the work control package.

Subcontractors must be able to demonstrate their employees have been trained to applicable portions of 29 CFR §1910.269, "Electric Power Generation, Transmission and Distribution," or 29 CFR Part 1926, Subpart V, "Power Transmission and Distribution."

Subcontractors who perform work on hazardous energy sources, for systems they own and control, and which are independent of the subcontractor's systems must meet the following requirements:

- The Lockout and Tag out procedure and training must meet 29 CFR §1910.147, "The Control of Hazardous Energy (Lockout/Tagout)," and 29 CFR §1929.417, "Lockout and Tagging of Circuits."
- Subcontractors are expected to use the WTS lockout/tag out procedure. For the rare occasion when the subcontractor plans to use their own procedure, the subcontractors shall provide a copy of their Lockout and Tag out procedure for review and approval before starting work.

28.0 TEMPORARY FACILITIES

28.1 Requirements

This document provides requirements for the locating, constructing, setting up, and using of temporary facilities (see def.), in order to ensure the safety of workers, visitors, property, and the environment. This document implements requirements from 10 CFR Part 851, 29 CFR Part 1910, "Occupational Safety and Health Standards," 29 CFR Part 1926, and the NFPA codes and standards along with WTS requirements. Any applicable regulatory or WTS requirements must be followed, with the most stringent requirement being met.

28.2 Location of Temporary Facilities

Subcontractors shall work with the WTS POC to ensure that temporary facilities are located appropriately and comply with the following requirements:

- Facility locations shall be evaluated and selected in compliance with the requirements related to location listed in DOE-STD-1088-95, Fire Protection for Relocatable Structures.
- Exposures presented by structures such as exterior canopies and connecting walkways shall be considered when determining separation distances and protection features.
- Tents and other fabric-type structures shall comply with the requirements in NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.
- Temporary facilities shall not be placed inside of another building or structure without sprinklers, unless a fire hazard analysis demonstrates that there is no significant increase of fire risk to the facility, and they shall be constructed of non-combustible material or of material having a fire resistance of not less than one hour.

- Temporary facilities shall not be located where they impede or hinder personnel exit or entrance into, or within other facilities or structures.
- Temporary facility locations shall meet the following criteria:
 - The locations shall permit emergency vehicles to operate within 100 feet of the facilities.
 - The facilities shall not block fire-fighting equipment.
 - The facilities shall not impede or hinder the access of emergency response vehicles to other facilities or structures.
 - The space between the structure and the road shall be free of natural obstructions that would prevent or severely restrict access by emergency responders.
 - Security barriers shall be designed to allow emergency access.

28.3 Construction Standards and Materials

All temporary weather protection enclosures shall be provided with adequate light and ventilation for personnel safety.

Temporary facilities, with the exception of semi-trailers and cargo containers, shall be constructed in accordance with the International Building Code and NFPA Codes and Standards.

The following standards shall be met for construction of any temporary facility:

- Tie-down protection shall be utilized as required by national codes or standards.
- Open under-floor areas shall have skirting to prevent accumulation of combustibles and debris beneath the structures.
- Service conductor clearances and disconnects shall comply with NFPA 70, National Electrical Code (NEC).
- Service conductors shall be physically protected from accidental damage per NEC requirements.
- Building materials shall follow the requirements listed in Underwriters Laboratory Building Materials Directory.

The electric panel in a temporary facility shall be clearly marked to show the identification of the source of power feeding the panel.

All exterior receptacles shall use weatherproof covers that protect cords that are attached to the receptacle.

Facilities that will be occupied shall be tied down before occupancy begins.

Facilities that will be in one location for a period greater than 30 consecutive days and that will be used for storage only shall be tied down, with proper access maintained.

All electrical wiring shall be installed in accordance with the NEC.

Flammable and combustible materials shall be held to a minimum and stored in an approved flammable storage cabinet.

Applicable safety and fire protection requirements from DOE-STD-1088-95 and NFPA 101, *Code for Safety to Life from Fire in Buildings and Structures*, shall be met for all temporary facilities.

All portable space heating devices shall be situated so they have clearance from combustible material and equipment.

Permanent space heating devices shall be installed in accordance with their listing, including clearance from combustible material, equipment or the structure it is mounted to.

28.4 Inspection Requirements

After a temporary facility is located, tied down and connected to Site utilities, it shall be inspected by the required WTS personnel to ensure the facility meets all requirements prior to use. NOTE: Any deficiencies identified shall be corrected before the Subcontractor occupies the temporary facility.

29.0 TEMPORARY FACILITIES

29.1 Requirements

The following requirements shall be followed in accordance with 29 CFR 1926, Subpart Q, "Concrete and Masonry Construction," ANSI A10.9A-1989, *Construction and Demolition Operations – Concrete Masonry Work*, ANSI A10.9-1983, *Safety Requirements for Concrete and Masonry Work*, and STD-116, *Architectural-Engineering Standards, Appendix K*.

Formwork

Formwork shall be in accordance with 29 CFR §1926.701, "General Requirements" and 29 CFR §1926.703, "Requirements for Cast-in-Place Concrete."

Manufactured forms shall be assembled and used following the manufacturer's recommendations.

Lumber, concrete, form hardware, and other materials shall not be permitted to accumulate on whalers, scaffolds, walkways, and form decks.

Signs and barricades shall be in place to protect others at lower levels.

A qualified person shall specify the strength of the partially cured concrete and/or reshoring necessary to carry proposed construction loads. This information may be contained in the project drawings or specifications.

Concrete Placement

Concrete placement shall be in accordance with 29 CFR §1926.702, "Requirements for Equipment and Tools."

Proper access shall be provided to walkways, scaffolding, and any point of concrete or masonry placement.

Concrete truck drivers and equipment operators shall be briefed about area/site specific hazards.

Concrete trucks and other mobile equipment shall EITHER be equipped with automatic audible backup alarms, OR have a flagman or a qualified spotter to control backing operations. NOTE: In congested or noisy areas, a flagman may be required to control vehicle operations regardless of whether the vehicle is equipped with an audible backup alarm.

When discharging concrete on a slope the driver shall remain in the cab and control the vehicle's movement.

Concrete shall not be discharged on any type of unstable ground or unstable incline.

If the point of placement is not readily visible to the crane operator, then a qualified flagman using a uniform hand signal system shall be positioned in clear view of the operator and the point of placement. NOTE: If necessary, the qualified flagman may use a telephone or two-way radio communication.

Pumping systems shall comply with the manufacturer's recommendations.

Manufacturer's specifications shall be followed when air pressure and a clean-out plug are used to clean the transfer lines to prevent the clean-out plug from becoming airborne.

Stable footing shall be provided for employees placing concrete through a pneumatic hose.

Equipment and Handles

Equipment and handles shall be in accordance with 29 CFR §1926.702.

Precast Concrete

Precast concrete shall be in accordance with 29 CFR §1926.704, Requirements for Precast Concrete."

Precast concrete shall be handled and erected under the supervision of a qualified person.

If precast concrete members must be stored, they shall be stored in such a fashion that:

- They are supported to prevent tipping.
- The base is level and stable to prevent differential settlement.
- Lifting attachments are undamaged and accessible.

Employees shall be trained in the proper methods of handling and erecting precast concrete products.

Bracing Precast Concrete

Bracing for precast concrete shall be in accordance with 29 CFR §1926.704. Temporary supports or bracing shall be designed by, or their use shall be supervised by, a person qualified in accordance with ANSI A58.1-1982, *American National Standard Minimum Design Loads for Buildings and Other Structures*.

Standard Minimum Design Loads for Buildings and Other Structures.

Safeguards for Pre-cast Concrete

Safeguards for precast concrete shall be in accordance with 29 CFR §1926.704.

Barricades, warning signals, signs, or other methods shall be provided as needed to safeguard traffic and people in the area of all handling and erection operations.

Lift-Slab Construction

Lift-slab construction shall be in accordance with 29 CFR §1926.705, "Requirements for Lift-Slab Construction Operations."

Only essential employees shall position or move lift-slab equipment permitted in the area of jacking operations.

Patching, Finishing, and Curing

Safe access shall be provided while patching, finishing, or curing work is being done at elevations beyond the reach of workmen.

Winter Protection/Heating

Adequate fire protection shall be provided for heating equipment used for concrete curing.

Temporary winter protection enclosures shall have adequate light and ventilation for the safety of personnel in these areas.

Temporary heating equipment, including storage containers, valves, piping, and fittings, shall be installed, tested, and operated only with the concurrence of a qualified person.

Cutting and Sandblasting

All abrasive blasting will meet the requirements of 29 CFR §1910.94(a), "Abrasive."

All cutting and sandblasting equipment shall be operated in compliance with manufacturer's specifications.

Cutting and sandblasting equipment shall be inspected at regular intervals and shall be maintained in safe operating condition per manufacturer's specifications.

Storing Cement

Bagged portland cement, masonry cement, and lime shall be stacked in piles or on pallets in a stable position.

Pallets and empty bags shall be disposed of promptly to eliminate fire and tripping hazards.

Returnable pallets shall be stored in an orderly manner until ready for shipment.

Masonry Construction

Masonry construction shall be performed under the supervision of a qualified person.

Masonry materials placed on a scaffold shall not exceed the design capacity of the scaffold.

Masonry saws shall be guarded with a semicircular enclosure over the blade.

Bricks and blocks shall be stored in a safe manner, on a firm and level surface. When removing bricks or blocks, stacks shall be kept level and proper step back shall be maintained.

Packages of bricks or blocks shall be lifted as follows:

- Banded packages of bricks or blocks shall not be lifted by crane or lift truck forks inserted in formed voids in the package unless the voids are spanned with a suitable support and the package is complete and the bands are tight.
- Packages that are lifted by forks placed in voids in blocks in the bottom layer shall be neatly cubed and shall contain no visible broken blocks.
- A pallet or other similar device shall be used as needed to lift or move packages of bricks or blocks.

Wall Erection/Limited Access Zone

Wall erection/limited access zones shall be in accordance with 29 CFR §1926.706, "Requirements for Masonry Construction."

The limited access zone shall be established prior to the start of construction of the wall.

The limited access zone shall be equal to the height of the wall to be constructed plus four feet, and shall run the entire length of the wall.

The limited access zone shall remain in place until the wall is adequately supported to prevent overturning and to prevent collapse unless the height of the wall is over eight feet, in which case, the limited access zone shall remain in place.

All masonry walls over eight feet in height shall be adequately braced to prevent overturning and to prevent collapse unless the wall is adequately supported so that it will not overturn or collapse. The bracing shall remain in place until permanent supporting elements of the structure are in place.

Reinforcing Steel

All protruding reinforcing steel shall be in accordance with 29 CFR §1926.701(b), "Reinforcing Steel." Reinforcing steel for walls, piers, columns, or similar vertical structures shall be guyed and supported to prevent collapse.

The following uses of reinforcing steel are prohibited:

- Using reinforced steel to attach guy wires at anchor points
- Using reinforced steel as hooks or stirrups for scaffolding, or any other makeshift structural function

30.0 STEEL ERECTION

30.1 Requirements

This document sets forth requirements to protect employees from the hazards associated with steel erection activities. Steel erection activities include hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing, and rigging structural steel, steel joists, and metal buildings; installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron, and similar materials; and moving point-to-point while performing these activities. These requirements shall be followed in accordance with 29 CFR Part 1926, Subpart R, "Steel Erection."

Administrative Activities

All levels of supervision shall understand their roles in implementing safety requirements for steel erection.

Qualified persons and competent persons shall be designated for steel erection work.

A Steel Erection Plan shall be prepared by a qualified person provided to WTS point of contact, and approved by the WTS.

Site Layout, Site-specific Erection Plan, and Construction Sequence

Steel erection site layouts, site-specific erection plans and construction sequences shall be done in accordance with 29 CFR §1926.752, "Site Layout, Site-Specific, Erection Plan and Construction Sequence."

Precautions

Subcontractor personnel will not be allowed to ride loads, or the crane headache ball.

Personnel lifts shall be used where feasible instead of climbing the steel.

All projection or protruding reinforcing rods that create tripping, or falling hazards shall be bent or covered to prevent hazard. Rebar caps, which are significant enough to prevent an impalement hazard shall be used on all exposed ends of rebar or other impalement hazards.

Working areas shall be kept in orderly condition with the necessary equipment and materials safely arranged.

The subcontractor shall assure that all steel is securely bolted before the load line is unhooked. Sing bolt connections are not to be used.

Steel trusses shall be securely tied or cross-braced until permanent braces are in place.

Loads shall be checked to assure that there are no sharp edges that will cut lifting slings. Softeners shall be used where applicable.

Permanent stairways will be installed as soon as working conditions permit.

Hoisting and Rigging

All hoisting and rigging shall be performed in accordance with 29 CFR §1926.753, "Hoisting and Rigging," in addition to the requirements from the Section for hoisting & rigging.

Structural Steel Assembly

Structural steel assembly shall be performed in accordance with 29 CFR §1926.754, "Structural Steel Assembly."

Column Anchorage

Column anchorage shall be performed in accordance with 29 CFR §1926.755, "Column Anchorage."

Beams and Columns

Beams and columns shall be constructed in accordance with 29 CFR §1926.756, "Beams and Columns."

Open Web Steel Joists

Open web steel joists shall be constructed in accordance with 29 CFR §1926.757, "Open Web Steel Joists."

Systems-Engineered Metal Buildings

Systems-engineered metal buildings shall be constructed in accordance with 29 CFR §1926.758, "Systems-Engineered Metal Buildings."

Falling Object Protection

Protection from falling objects shall be in accordance with 29 CFR §1926.502 and 29 CFR §1926.759, "Falling Object Protection."

Fall Protection

Fall protection shall be performed in accordance with Section 20.0, Fall Protection.

Training

Training shall be in accordance with 29 CFR §1926.761, "Training."

31.0 ELECTRICAL SAFETY CONTROLS**31.1 Requirements**

In addition to the requirements stated below, the requirements of NEC Chapter 3, *General Wiring Methods*, shall be followed. Subcontractor employees performing electrical work will have current cardiopulmonary resuscitation (CPR) certification and be trained in methods of victim release and other required NFPA 70E training.

Safe Work Practices, electrical pre-job briefing, and other requirements in WP 12-IS.03, Electrical Safety Program Manual, will be met.

Subcontractor employees must satisfactorily complete the WIPP Lockout/Tag out requirements before performing work on a system that has been locked out. Inspection and testing of extension cords and tools will be conducted as defined on 29 CFR §1926.404, "Wiring Design and Protection." Subcontractor shall provide ground fault circuit interrupters (GFCI) for all temporary power. In addition GFCI protection will be provided for circuits supplying power as follows:

- Personnel using hand-held electrical devices and portable electrical equipment that operate on a 15- or 20-ampere, 120V-rated, single-phase circuit will be protected from ground fault risk by use of a GFCI.
- All GFCI devices in use will be trip tested each day before use. If the GFCI device fails the trip test, it will be removed from service and tagged to indicate the defect, and removed from service.

Functional testing of the GFCI will include:

- Connecting the GFCI cord into the wall receptacle and plugging the electrical tool, extension cord, or electrical equipment into the GFCI.
- Retesting the GFCI trip function by depressing the trip button after connecting the electrical tool or equipment to the GFCI, but before performing work.
- Attempting to operate the electrical tool or equipment (the tool should not operate at this time).
- Pressing the reset button to re-establish electrical power (the tool or equipment should now be energized).

These simple steps will confirm that the GFCI is functioning and that the GFCI will interrupt any harmful electrical currents before they can become a hazard to the employee.

When portable electric devices are used under wet conditions, the tool and the worker will be kept as dry as practicable. The hands will be insulated from the device with electrical gloves tested and rated for the voltage expected.

GFCI devices that control monitoring equipment in continuous service can be tested at the end of the duty cycle.

In accordance with the NEC, ground-fault protection shall not apply to outlets used to supply equipment that would create a greater hazard if power was interrupted or having a design that is not compatible with GFCI protection (e.g., emergency and lift essential equipment).

Wire and cable being removed or installed shall not be left hanging or lying on the floor or ground when work is completed or at the end of a workday. If the work is incomplete, the wire and cable shall be neatly coiled and laid or hung out of walkways to avoid safety hazards and to prevent damage to the cable itself.

31.2 Portable Electric Tools, Appliances, Equipment, and Extension Cords

The following general requirements apply to the use of all portable electric tools, appliances, extensions cords, and portable electrical equipment and extension cords.

These items shall be NRTL listed and GFCI protected, with the GFCI exception of portable air monitoring equipment and other equipment where nuisance tripping can create a hazard. WTS IS&H will assist in performing an assessment to determine GFCI exceptions for critical equipment.

The maximum combined length of cord(s) with conductors 14 AWG (American wire gauge) or larger will not exceed 100 feet.

Placements that will expose power supply cords or receptacles to sources of damage such as pinch points or crushing (as in doors and windows); mechanical loading, foot or vehicular traffic; moisture, solvents, or chemicals, shall be avoided.

Cord placements that will create hazards to nearby workers, such as tripping hazards, shall be avoided.

Multiple cords will not be used to create a needed length. Only a single extension cord of the correct length will be used. Extension cords will be round, hard-service, three-wire 12 AWG or larger, the conductor will be of sufficient size for the capacity of the equipment being energized.

The cords will not be fastened with staples or extend access an aisle or walkway.

Worn or frayed cords will not be used.

Vehicles are not permitted to run over extension cords or power conductors.

Bulbs on temporary lights will be guarded to prevent accidental contact. Temporary lights will not be suspended by their electrical cords unless designed for this use.

Receptacles for attachment plugs will be of the approval type. Where different voltages, frequencies, or currents are supplied, receptacles will be designed so that attachment plugs are not interchangeable.

No tool shall be lifted, carried, or suspended by its cord.

One power strip shall not be connected to another power strip.

All extension cords, plugs and receptacles, or other equipment connected by cord and plug, will be visually inspected, by the user, before each shift's use. The following items will be included in the inspection of each device, as appropriate:

- Insulation or jacket must be present and in good condition.
- Covers, insulation, guards, and other shields covering conductive parts, must not be removable without the use of tools. If this is not the case the item is not effectively insulated.
- Splices are not allowed on extension cords.

Any device that is found to be defective during the pre-use inspection will be removed from service tagged to indicate the defect, and removed from service.

Questions regarding the appropriate conditions of use for a specific item should be directed to WTS IS&H.

31.3 Electrical Work Practices

Energized electrical circuits operating at or above 50V to ground shall be de-energized and isolated under the WIPP Lockout/Tag out program before any employee works on or near the circuit.

Electrical Work will be performed in accordance with WP 12-IS.03.

32.0 EXCAVATION AND TRENCH CONTROLS

Before any excavation work begins, the appropriate permits will be obtained.

All excavations and trenching operations will be in compliance with the requirements contained in 29 CFR Part 1926, Subpart P, "Excavations," and as otherwise specified in this section and in accordance with the approved JHA.

If the excavation is deeper than 4 feet, an excavation competent person shall be onsite. This person is to be identified ahead as part of the JHA. This individual must have formal documented training as a competent person. The competent person shall be responsible for conducting and documenting the daily inspections of the excavations, adjacent areas, and protective systems or sloping and benches prior to each shift. This individual shall also inspect these areas after each rain storm or other potentially hazard-producing event.

Prior to opening an excavation, the subcontractor will obtain from WTS controlled drawings to locate, identify, and mark the location of all buried utilities crossing the excavation. A radio detection meter or equivalent will be used to identify the location of U/G utilities not identified on the drawings. Surface marks showing the location of buried cables/utilities will extend at least two feet on each side of the excavation and will be sufficiently durable to be visible during the excavation.

All buried electrical utilities will be treated as energized until exposed and tested.

Excavation will stop one foot from the approximate location of each known cable and active utility, and then proceed only per the following conditions:

- Nonconductive tools such as fiberglass-handled shovels and appropriate PPE (e.g., electrical insulating gloves) will be used by personnel performing excavations within one foot of cables.
- Nonconductive tools and electrical-insulated PPE will be appropriate for the expected voltage in accordance with 29 CFR §1926.416, "General Requirements" and 29 CFR §1926.651, "Specific Excavation Requirements."
- In accordance with 29 CFR §1926.416, personnel digging by shovel within one foot of cables will be instructed to use only their hands on the shovel, not feet or other unprotected parts of the body, to drive the shovel into the ground.

- All exposed utilities will be protected, removed, or supported as necessary to safeguard employees in accordance with 29 CFR §1926.651 and WP 12-IS.01-5.

An inspection of the excavation and adjacent areas will be conducted by WTS IS&H prior to the start of work, and as needed throughout the shift, to detect unsafe conditions or situations. Inspections, conducted by the subcontractor in accordance with 29 CFR §1926.65, "Hazardous Waste Operations and Emergency Response," will be repeated following severe weather or other events that could increase the hazard to employees working in an excavation.

Employees working at or near the edge of excavations six feet or more in depth, or which contain dangerous or energized equipment shall be protected from fall hazards by fences, barriers, covers, or another approved method of fall protection in accordance with 29 CFR §1926.501 and 29 CFR §1926.651, and the approved JHA.

Ladders, stairs, and other means for accessing excavations four feet or more in depth will be provided in accordance with 29 CFR §1926.651 and 29 CFR Part 1926, Subpart X.

Exposed holes and trenches shall be marked with barriers and warning signs limiting entry. All soil at WIPP is classified as Type C. All excavations must meet the Type C sloping requirement of 1 ½ to 1, or approved engineered shoring when trench is deeper than 4'11."

33.0 FLOOR AND/OR WALL OPENING CONTROLS

Floor openings will be guarded by substantial barriers, railings, and/or covering materials strong enough to sustain twice the maximum anticipated load of pedestrian or vehicular traffic. Floor hole covers will have sign reading "WARNING-FLOOR HOLE." The cover will secure and will extend adequately beyond the edge of the hole.

Floor areas elevated more than 4 feet must be provide with standards guardrails. Toe boards will also be provided when there is a possibility of falling objects striking personnel below.

34.0 TOOLS CONTROLS

34.1 Hand Tools

All hand tools shall be inspected prior to use or start-up.

Hand and power tools will be kept in safe operating condition.

Mushroom heads on cold chisels, star drills, etc., shall not be used.

Tools shall not be left in or on passageways, access ways, walkways, ramps, platforms, stairways, or scaffolds where they can create a tripping hazard.

Damaged tools will be removed from service and tagged with a "CAUTION: DEFECTIVE – DO NOT USE" tag.

Non-sparking tools will be used in areas where flammable materials are handled or where sparks could create an explosion.

Cheaters shall not be used with any type of wrench or socket.

See WP 12-IS.01-3 for additional information at the WIPP.

34.2 Power Actuated and Air Actuated Tools Controls

The following controls shall be implemented in accordance with 29 CFR 1926, Subpart I, "Tools-Hand and Power" and 29 CFR 1910, Subpart P, "Hand and Portable Powered Tools and Other Hand-Held Equipment."

Subcontractor employees will have a valid qualification card in their possession when operating a powder-actuated tool. All manufactures' instructions concerning service, inspection, and operation will be available and followed.

Tools and powder loads will be stored in a safe place when not in use.

Post-appropriate warning signs for ear, face, or eye protection.

A loaded powder-actuated tool will never be left unattended.

Misfired cartridges will be segregated from fired cartridges and disposed of per manufacture's recommendations. The subcontractor is responsible for the transportation and disposal of the misfired cartridges.

Fired cartridges will be disposed of as hazardous waste and not allowed to accumulate on the floor or in the work area.

Tethers (whip-checks) will be used on compressed air-line, and coupling with an inside diameter greater than ½ inch.

Compressed air lines will be free of defects such as cracks, kinks, and frays.

35.0 STABILITY CONTROLS

Two employees are required to carry materials that are bulky, heavy, awkward, or longer than 10 feet. When working on heights, secure tools and equipment. Secure or tie down all light and large-surface-area material that might be moved by high wind.

36.0 HEAVY EQUIPMENT CONTROLS

36.1 Heavy Equipment Operations

Heavy equipment is expected to meet the requirements of motor vehicle safety per Section 19.0.

Only qualified subcontractor operators shall be allowed to operate equipment.

Operators shall be required to wear seat belts at all times if the equipment is equipped with a seat belt.

Except where allowed by the manufacturer, personnel shall be prohibited from riding in or on the equipment unless the equipment has additional seating with the required seat belt.

Operators shall maintain three point contact whenever mounting or dismounting a piece of equipment.

Subcontractor operators shall be in control of their equipment and work area at all times.

Subcontractor personal will not be permitted to use hoists or power equipment belonging to WIPP unless approved by the WTS representative and obtain site operator qualifications.

The subcontractor equipment shall be operated in a safe manner and within the constraints of the manufacturer's operator manual or handbook.

Subcontractor shall stop work whenever unauthorized ground personnel or equipment enter their work area, and only resume work when the area has been cleared.

Subcontractor ground personnel shall be required to wear high-visibility protective vests when in work areas with any operating equipment.

Subcontractor ground personnel shall stay outside of the swing zone or work area of any of the operating equipment.

Subcontractor ground personnel shall only proceed forward within the work area after they have attracted the attention of the equipment operator and he has idled the equipment by lowering down all hydraulic equipment (i.e., buckets, outriggers, etc.) engaging tools, and set the brakes. The operator shall signal the ground personnel to approach.

Subcontractor shall maintain copies of the operator's manuals at the site for each piece of equipment that is being used.

Subcontractor shall assure that all operators have read or been trained on the operator's manual and know how to operate the equipment within the parameters of the manual.

All equipment to be used by the subcontractor shall be provided with roll-over protection systems, when conditions or regulations mandate.

All equipment, to be used onsite by subcontractors, shall have windshields and windows that have intact glass free from cracks and are not broken.

Backup alarms shall be functional on all trucks and equipment.

All extensions such as buckets, blades, forks, etc. are to be grounded when not in use. Brakes are to be set and wheel chocks are to be used for all rubber tire equipment. All equipment that is to be used by the subcontractor shall have the appropriate size fire extinguisher mounted on all vehicles and equipment or an automatic fire suppression system. All fire extinguishers mounted on equipment and vehicles shall be inspected on a monthly basis and serviced on an annual basis. These records of the monthly and annual inspection shall be maintained in the project office by the subcontractor and will be made available for review by WTS personnel.

All haulage vehicles, whose payload is loaded by means of cranes, power shovels, loaders, or similar equipment has a cable shield, and/or canopy adequate to protect the operator from shifting or falling material. If protection is not available for the operator, the operator must leave the vehicle and wait in a designated safe location until it is loaded.

All subcontractor equipment and vehicles shall be in a safe and good working order prior to entering the construction or work zone. The equipment shall also be inspected for any signs of leaks or significant stain. If leaks or significant stains are noted equipment or vehicles will not be allowed onsite.

Subcontractor personal will not be permitted to use hoists or power equipment belonging to WIPP unless approved by the WTS representative and obtain site operator qualifications.

Each crane operator will have a current New Mexico State Hoisting Operators License or equivalent.

A competent person must be identified as part of the JHA to supervise erecting, moving, and dismantling of any crane.

No subcontractor personnel shall work under suspended loads or portion of the booms, when the booms are being assembled or dismantled.

All cranes shall have the operator's manual inside the cab of the crane.

Prior to using any cranes the qualified/competent person shall conduct an inspection of the crane. This inspection shall be completed on a daily basis and documented. The documentation shall be made available to WTS IS&H staff at their request.

All cranes used onsite shall have a current annual inspection be either a manufacturer's representative or by a qualified third party. Copies of these annual inspections shall be made available for review.

Prior to working onsite all cranes shall be load tested in accordance with 29 CFR Part 1926, Subpart N requirements.

Heavy equipment operators and riggers will be trained in accordance with the training section.

Subcontractor shall assure that the signal person is qualified to perform the required signal during crane operation.

The equipment operation manual shall be followed at all times. Inspection and training guidelines and requirements for wheel mounted cranes, forklifts trucks, aerial work platforms (e.g., scissor lift), and other heavy equipment will be inspected and approved by WIPP IS&H. These requirements must be met prior to working on site.

All forklift operations and attachment use at WIPP must comply with regulatory and manufacturer's requirements listed in the references, as well as site-specific policies, and the approved JHA.

36.2 Hoisting and Rigging

Subcontractor shall assure that only qualified personnel are allowed to perform rigging tasks.

Subcontractor competent person shall be identified in the JHA to inspect rigging prior to any lift activities. WTS IS&H may independently validate the inspection.

When conducting a lift a tag line shall be used.

37.0 CHEMICAL/SOLVENTS AND PAINTS CONTROLS

37.1 Requirements

Containers of chemicals must be labeled to identify the hazards and contents. Labels must identify manufacturer, product name, and appropriate hazard warnings.

Chemicals containing cyanide, phenols, mercury, cadmium, chromates, lead, or rare earths will not be used except with the written permission from IS&H.

MSDS will be submitted for approval to the WTS IS&H for all chemicals. Hazardous materials **MUST** be approved before being brought on site. MSDSs will be maintained

by the subcontractor after review and approval by WTS IS&H (see 12-IH.02, Industrial Hygiene Program).

PPE required on the MSDS must be referenced in the subcontractors JHA and work instructions.

Incompatible chemicals are not to be stored together.

Adequate ventilation must be maintained at all times when paints or solvents are used. Flammables and solvents will not be stored or used near welding operations.

Flammable solvents and materials must be used with extreme caution when possible sources of ignition are present.

Flammable liquids in secondary containment must be dispensed from safety cans with flash arresters. The safety can shall have a Factory Mutual or Underwriters' Laboratories approval. These containers must be clearly identified as to their contents and with hazard warning labels.

It is WTS Policy not to use known or suspected carcinogens.

37.2 Release Controls for Pollutants

The subcontractor is prohibited from discharging any hazardous substance into onsite drains (sanitary or storm) without specific, prior approval.

38.0 CONFINED SPACE ENTRY CONTROLS

The subcontractors shall follow the requirements of 29 CFR 1910.146, "Permit-Required Confined Spaces" and 29 CFR 1926.21, "Safety and Training."

Confined space entry may include storage tanks, bins, sewers, in-ground vaults, vessels, tunnels, manholes, pits, etc. These enclosures, because of inadequate ventilation and/or the introduction of hazardous gasses and vapors, may present conditions that could produce asphyxiation or injury.

Each subcontractor employee working in a permit-required confined space must successfully complete the WIPP site confined space training programs (see WP 12-IH.02-2, WIPP Industrial Hygiene Program - Confined Spaces).

Before entering any confined space, the subcontractor must obtain authorization from IS&H.

39.0 HEARING CONSERVATION CONTROLS

Subcontractors working at the site are required to meet 29 CFR 1910.95 and 29 CFR 1926.52, Occupational Noise Exposure. In addition, subcontractors will comply

with American Conference of Governmental Industrial Hygienists (ACGIH) noise exposure limits.

Locations where noise may be excessive at the site are placarded with caution signs designating the nature of the hazard and necessary controls. If a noise exposure is in question, IS&H can be contacted for assistance.

Subcontractor personnel who are exposed to noise levels at or above 85 dBA for 8 hours shall be enrolled in a hearing conservation program. The hearing conservation program shall include baseline and annual audiograms, written program, as well as hearing protection devices.

All subcontractor personnel required to wear hearing protection devices shall be trained in the proper method of using of the hearing protection devices and aware of the level of protection provided.

See WP 12-IH.02-5, Hearing Conservation, for additional information.

40.0 MATERIAL HANDLING, STORAGE, AND DISPOSAL CONTROLS

Subcontractor shall be required to adhere to the following, in accordance with 29 CFR 1910, Subpart N.

40.1 Mechanical Handling

The weight and center of gravity of the object will be determined before handling. Capacity of the handling device (i.e., crane, fork lift, chain fall, etc.) will not be exceeded. Rigging from the forks without an approved attachment is prohibited.

40.2 Open Yard Storage

Combustible Materials

Combustible materials shall be stacked securely, and stacks or piles shall not exceed 16 feet in height. No combustible material shall be stored within 10 feet of a building or structure.

Access

Driveways between and around combustible storage piles shall be at least 15 feet wide and shall be maintained free from accumulations of material or rubbish. Driveways in open-yard, combustible material storage areas shall be planned with a maximum grid system unit of 50 by 150 feet.

Power Lines

Materials shall not be stored under overhead power lines without prior approval of the WTS Representative.

Sling Hoisting

Bagged material, lumber, bricks, masonry blocks, and similar unsecured-type materials shall not be hoisted by slings unless secured against falling by straps, sideboards, nets, or other suitable devices that fully secure the load. JHAs for hoisting shall include mitigating controls for the stored energy in the sling.

Taglines

Taglines shall be used for controlling loads when hoisting materials. Exceptions to this requirement can be granted by the IS&H when it is shown by the subcontractor that use of taglines creates undue hazards.

40.3 Indoor Storage

General

Materials shall be stored in a planned and orderly manner, so as not to endanger the safety of employees, as stated in 29 CFR Part 1926, Subpart H, "Materials Handling, Storage, Use and Disposal." Stacks, tiers, and piles shall be stable and stacked to facilitate safe handling and loading. Storage of hazardous materials shall be in accordance with the requirements contained in the MSDS.

Access

Materials shall not be placed or stored so as to interfere with access ways, doorways, or hoist ways. Accumulations of scrap or materials shall not be permitted to obstruct access to fire extinguishers, emergency equipment, electrical panels, fire panels, sprinkler heads, exits, etc. Aisle width shall be adequate to accommodate the fire emergency equipment.

Buildings Under Construction

Materials stored inside buildings under construction shall not be placed within 6 feet of any hoist way or inside floor openings, or within 10 feet of an exterior wall which does not extend above the top of the material stored.

Lumber

- *Stability* – Lumber shall be stacked on level and solidly supported sills in a manner that the stacks are stable and self-supporting.
- *Height* – Lumber piles shall not exceed 6 feet in height.

Bricks & Masonry Blocks

- *Stability* – Brick and masonry blocks shall be stacked on level and solid surfaces.
- *Brick* – Brick stacks shall not exceed 7 feet in height. When a loose brick stack reaches a height of 4 feet, it shall be stepped back at least 2 inches in every foot of height above the 4 foot level. Unitized brick shall not be stacked more than three units in height.

- *Masonry Blocks* – Masonry blocks stacked higher than 6 feet shall be stepped back on-half block per tier above the 6-foot level.

Cement and Lime

- *Bulk Cement and Lime* – Workmen handling bulk cement or lime shall wear protective gloves, clothing, respirators, and goggles. They shall be provided with washing facilities, hand cream, petroleum jelly, or similar preparations for protection from dermatitis. Subcontractor shall provide and follow all MSDSs for work involving bulk cement and lime.
- *Stacking* – Unless laterally supported, sacked cement and lime shall not be stacked over 10 bags high without stepping back the layers and cross-keying the bags. Bags shall be removed uniformly from the top of the stacks to avoid tipping of the stacks.
- *Lime* – Unstacked lime shall be stored in a dry area, and due to fire hazard, shall be separated from other materials.

Reinforcing, Sheet, and Structural Steel

- *Stacking* – Steel shall be safely stacked to prevent sliding, rolling, spreading, or falling.

Pipe, Conduit, and Cylindrical Material

- *Stacking* – Pipe, conduit bar stock, and other cylindrical materials, unless placed in racks, shall be stacked on a firm, level surface and shall be blocked to prevent spreading, rolling, or falling; either a pyramided or battened stack shall be used. Battened stacks shall be stepped back at least one unit per tier and securely chocked on both sides of the stack.
- *Removal* – Removal of pipe or conduit from a stack shall be done from the ends of the pipe or conduit.
- *Unloading* – Unloading from a carrier shall be done in such a manner that no person shall be exposed to the unsecured load.

Sand, Gravel, and Crushed Stone

- *Stockpiles* – Stockpiles shall be located so as to provide safe access for withdrawing material. Overhanging of material or vertical faces shall not be permitted.

Bins and Partitions

- *Material* – Material stored against walls or partitions shall not be stored in an amount which will endanger the stability of the wall or partition.

41.0 FIELDWORK CONTROLS

Personnel performing field work shall carry at least the following equipment:

- Two-way communications (mobile phone or WIPP radio)
- Fire extinguisher and shovel
- First aid supplies
- Potable drinking water

NOTE: A single set of the equipment listed above will be sufficient for a team that will be working in close proximity to each other at all times.

Before workers begin working in the field, the workers shall contact the CMR to have their location logged into the CMR log, and the fieldwork point of contact.

A field work point of contact shall be identified in the JHA who can communicate with the fieldworkers at all times while workers are in the field. NOTE: The field work point of contact for communication purposes is not necessarily, and usually will not be, the WIPP STR designated for the subcontract.

The fieldwork point of contact shall ensure that the CMR was notified, and shall notify the FSM and security of the work locations and subsequent location changes during the day.

The WIPP Facility Shift Manager shall be informed of current points of contact and the means of communication with fieldworkers.

Communications capability shall be maintained between field workers and points of contact at all times while workers are in the field.

Workers in the field shall report any unusual or emergency conditions to the CMR and to the WTS point of contact.

Workers in the field shall follow emergency directions from authorized emergency personnel (such as the field work point of contact, FSM, the WIPP Emergency Response Organization, the CMR, or security).

A current file of fieldwork points of contact and requests for exemptions shall be maintained.

42.0 MAJOR EQUIPMENT ACCESS AND INSPECTION CONTROLS

Subcontractors bringing major equipment to the WIPP site shall notify the STR of the time and location of equipment arrival at the jobsite for WIPP inspection for each piece of equipment coming onsite.

43.0 WIPP SITE EQUIPMENT USE CONTROLS

All equipment, (e.g., vehicles, machinery and/or hand tools) used by the subcontractor to perform work at the WIPP must be in good working condition for the purpose intended and meet all applicable codes and standards. Such equipment must be used and maintained only as intended by the manufacturer and in accordance with the manufacturer's instructions and limitations. The equipment must be free of defects and suitable for safe performance of the work. WTS reserves the right, in its sole discretion, to conduct cursory inspections of subcontractor equipment prior to use. Equipment found to be unsatisfactory by the WTS shall be promptly repaired or removed from the premises and replaced with satisfactory items at no cost to WTS. WTS inspections, whether or not any equipment is found to be unsatisfactory or whether or not any defects are found by such inspections, do not relieve the subcontractor of any responsibility or liability for performing the work in a safe manner. Applicable equipment must be NRTL listed or approved per WP 12-IS0301, NRTL Process.

44.0 CONTROL OF THERMAL ENVIRONMENTS

The subcontractor will follow the ACGIH threshold limit value (TLV) for control of employees exposure to thermal environments (heat or cold). WIPP IS&H continuously assesses thermal conditions and the FSM will have the latest information available for you on work/rest schedule in place based on the current thermal environment.

45.0 WORK AROUND WATER

Work around water at the WIPP will typically be associated with manmade impoundments, such as the sewage lagoon and storm water evaporation ponds or berms surrounding storm water collection areas.

When personnel perform work in or around water a personal flotation device will be required under the following conditions:

- Water depth unknown
- Water depth greater than 18 inches
- Significant current (greater than walking speed)
- Soft or unstable bottom
- Use of equipment, clothing, or PPE that may hinder self-rescue
- Working in boats
- When personnel are working on the side slope of a lined pond meeting either of the first two bullets above without a means of egress (e.g., a rope ladder, textured liner, geonet), a safety harness and lifeline are required.

When personnel are working on the side slope of an unlined pond or berm with greater than a slope of 1:3, a personal flotation device must be worn or a safety harness and lifeline must be used.

46.0 SECURITY CONTROLS

46.1 Purpose

Safeguards and Security (S&S) requirements are established and maintained for subcontractors working at the WIPP. These S&S requirements ensure that appropriate measures are in place to provide protection and accountability for personnel. S&S is also required to protect U.S. Government and WIPP owned classified and sensitive information, nuclear materials, and computer systems from theft, diversion, sabotage, espionage, or other hostile acts.

46.2 Requirements

NOTE: WTS is not responsible for delays that occur as a result of a subcontractor employee's failure to comply with the security requirements detailed herein.

The subcontractor shall be responsible for "flowing-down" to all lower-tier subcontractors, unions, and vendors all pertinent security requirements.

All personnel granted access to WIPP and WIPP support facilities in Carlsbad shall comply with all DOE and contractor security regulations and requirements.

The subcontractor shall report all abnormal or suspicious activities to the WTS POC, or FSM, if the WTS POC is not available.

46.3 WIPP Access Control and Badging

Each subcontractor employee requesting access to WIPP controlled areas shall:

- Be 18 years or older
- Be a U.S. citizen or require prior approval that is in accordance with the DOE requirements for access to the WIPP site
- Receive an initial security briefing before receiving an WIPP security badge
- Report to and obtain a badge from the security office located at an access control point

In order to have unescorted access to WIPP, subcontractor employees shall have successfully completed suitability for employment check. NOTE: Either WTS or the subcontractor may conduct the suitability for employment check. Those personnel who do not pass the suitability check will be denied access to WTS-controlled WIPP related facilities.

Personnel investigations may include, but is not limited to the following:

- Credit check
- Verification of a high school education, or a degree or diploma from an institution of higher learning within the last five years
- Contacts with listed personal references
- Contacts with listed employers for the past three years
- Local law enforcement checks
- Confirmation of any military experience

The employee's job qualifications and suitability shall be established before:

- The employee reports to WIPP site
- The employee is issued a security badge
- A request is made to DOE for a security clearance

The results of the pre-employment/suitability personnel investigation shall be made available to the WTS for eligibility verification for issue of an uncleared picture badge.

If the WTS conducts the suitability check, the subcontractor employee shall obtain an appropriate badge before beginning work at WIPP.

Subcontractor drivers making deliveries shall be 18 years or older and possess a valid driver's license or picture identification.

All subcontractors who are not U.S. citizens shall be identified and processed in accordance with DOE requirements.

46.4 WIPP Access Control Points and Procedures

NOTE: Additional construction site security access requirements, if any, will be designated in the subcontract Special Conditions. Specific controls for governing personnel access are established at WIPP. Officially designated WIPP access control points have been designated.

When obtaining access to WIPP site facilities, subcontractor personnel shall use ONLY the primary entrance to WIPP site facilities through the west Gate House at the main vehicle entrance.

NOTE: Any subcontractor employee who does not have a valid WIPP security badge will be directed to building 458 (Guard and Security Building) or Skeen Whitlock Building (SWB) for issuance of a badge. If the individual is working for a valid subcontractor and has forgotten his/her badge, the individual will be directed to building 458 (Guard and Security Building) or SWB and issued a temporary "forgotten" badge.

All vehicles used for subcontractor purposes shall be clearly marked with the subcontractor's company name in one-inch-high letters (minimum) on each side of the vehicle.

All hand-carried articles shall be tagged with the subcontractor employee's name, company, and phone number.

Upon arrival at WIPP, subcontractor personnel shall submit all vehicles and hand-carried articles for warrantless search and inspection. At WIPP controlled facilities in Carlsbad, hand-carried articles are also subject to warrantless search and inspection.

During vehicle searches, all occupants shall exit from the vehicle and open all receptacles such as:

- Glove box
- Hood
- Trunk
- Toolboxes
- Briefcases
- Lunch boxes

The occupants shall step away from the vehicle until the search and inspection is completed.

The occupants shall NOT proceed until completion of the search and inspection.

46.5 Security Clearance

NOTE: The subcontract Special Conditions will identify whether or not subcontractor employees require a security clearance. Uncleared subcontractor employees will be allowed unescorted access to property protection areas, providing they have a WIPP picture badge. In order to obtain a security clearance, the program requesting the subcontractor is required to justify the need for a clearance.

When an access authorization (clearance) has been granted by the DOE, the subcontractor shall receive a comprehensive security briefing before receiving an "L" or "Q" security badge.

As long as a clearance is active, the subcontractor shall complete a security refresher briefing approximately every 12 months.

Each subcontractor employee who will act as an escort for other subcontractor personnel shall attend escort training presented by WTS.

NOTE: The subcontract Special Conditions will identify under what circumstances, if any, escort requirements may be involved. Subcontractors shall NOT escort non-U.S. Citizens.

46.6 Control and Surrender of Badges

The subcontractor shall ensure that requests for badge transfers are properly executed during the course of work on the subcontract and that all badges are surrendered upon completion of work on the subcontract.

Within 24 hours of permanently transferring a subcontractor employee to another subcontract with the same subcontractor, the subcontractor shall notify the contractor security section of the transfer and provide the new subcontract number and the duration of work under the new subcontract.

When a subcontractor employee completes the subcontract work, the subcontractor shall comply with all exit requirements.

The subcontractor employee shall surrender his/her badge. NOTE: The badge may be surrendered at the WTS security office post.

A subcontractor employee holding a security clearance shall sign a *Security Termination Statement*, DOE Form F5631.29 the day of the employee's termination.

Subcontractor employees not currently working at WIPP or not assigned to a current subcontract shall immediately surrender their security badges to contractor security.

Upon notification of termination "for cause," the employee shall be escorted by the subcontractor until the employee departs from WIPP site or SWB facility and surrenders their badge at a security post.

At the conclusion of the project and prior to requesting final payment, the subcontractor shall notify the STR that all security badges have been returned. NOTE: If all security badges have been surrendered, Security will issue a release form to the STR. This release form will be attached to the final payment request. The payment will then be processed. If all badges are not accounted for, the subcontractor will be issued a list of outstanding badges from the STR. Once all issues are resolved, a release form will be issued to the subcontractor and attached to the final payment request.

46.7 Illegal Drugs and Controlled Substances

NOTE: Through the Drug Free Work Place program, employees may be screened based on reasonable suspicion, accident, or incident. WTS reserves the right to require a urine drug screen or a blood alcohol screen based on reasonable suspicion of illegal

substance use, abuse of legal substances, or involvement in an accident or incident resulting in personal injury, death, or property damage.

WTS has implemented a Subcontractor Work Place Substance Abuse Program and a Worker Safety and Health Program. The purpose of these DOE authorized programs is to ensure the safety, health, welfare and productivity of our employees, subcontractors, sub-tier subcontractor employees and the public.

In order to accomplish this goal, WTS has implemented the Workplace Substance Abuse Program and flows down the requirements of the program through the WTS Subcontract General Provisions Clauses.

These rules govern the conduct of any entity including affiliated entities, such as a parent corporations, under subcontract with the DOE, or a subcontractor at any tier, that has responsibilities for performing work at a covered DOE site in furtherance of a DOE mission.

As such, this requires subcontractors to flow down the requirements of the Workplace Substance Abuse Program and the requirements of the Worker Safety and Health Program to your sub-tier subcontractors.

To ensure compliance with the requirements noted above, WTS requires:

- All sub-tier subcontractor personnel to submit to and pass a drug and alcohol screen prior to arriving at the WIPP site.
- Subcontractors shall report the results of the screen on its letterhead with the names of the sub-tier employees, date of screen and that they passed the screen prior to them arriving at the WIPP site.
- The report shall be submitted to the WTS Occupational Health Department, through the STR for review and approval prior to the sub-tier subcontractor employee(s) arriving at the WIPP site and must be approved prior to any sub-tier subcontractor employee(s) entering the WIPP site.
- Subcontractors must provide evidence (copies of sub-tier subcontracts) demonstrating the flow down of the Workplace Substance Abuse Program and the requirements of the Worker Safety and Health Program prior to commencement of work at the WIPP site to the WTS subcontract administrator.

Situations may occasionally arise that cause a sub-tier subcontractor employee to not be available in time to submit to a pre-work screen. In that case, WTS can, at its discretion, screen the employee on site at no cost to the subcontractor.

WTS reserves the right to review the subcontractor's Workplace Substance Abuse Program at any time and may do so on an unannounced basis. Any personnel under the subcontractor (including lower tier contractors and vendors) who become aware of or have knowledge of the illegal use or possession of drugs or controlled substances by

any individual shall immediately report that information to their supervisor, superintendent, or manager.

The subcontractor shall immediately report information of illegal use or possession of drugs or controlled substances to the WTS POC.

If the implicated individual(s) cannot immediately and clearly establish that the drug or controlled substance in question was legally obtained or used, the subcontractor's supervisor, superintendent, or manager shall escort the individual(s) to the WTS security office. NOTE: Proof of legal purchase may consist of written evidence that the controlled substance was prescribed or administered by a licensed physician or was legally purchased over the counter. When the implicated individual(s) arrive at the security office, their security badge(s) will be confiscated and the individual(s) will be informed of what further action may be taken by WTS.

46.8 Sensitive Unclassified Information

The subcontractor shall comply with the sensitive unclassified information guidelines of the Atomic Energy Act of 1954, Section 148, as amended. NOTE: The subcontract Special Conditions will identify whether or not the subcontract contains documents designated as sensitive unclassified information. Drawings and documents that have been designated and stamped as sensitive unclassified information are subject to the provisions of the Atomic Energy Act of 1954, Section 148, as amended. Any person who makes unauthorized disclosure of this information is subject to both criminal and civil penalties.

Sensitive unclassified information shall be protected against unauthorized disclosure.

Each person who receives, acquires, or produces sensitive unclassified information shall take reasonable and prudent steps to ensure that it is protected from unauthorized disclosure.

Only U.S. citizens who have an established need-to-know in the performance of official duties shall be allowed access to sensitive information.

Access by non-U.S. citizens shall only be permitted when it is in conjunction with established cooperative agreements, treaties, mutual defense acts, or DOE contracts.

To prevent unauthorized access, removal, or copying of sensitive unclassified information, such information shall remain under the control of the responsible person.

When sensitive unclassified information is outside of an access-controlled facility, the information shall be stored in a locked desk, file cabinet, or office.

Storage inside access controlled facilities should be out of sight, such as in a desk, file cabinet, or credenza.

46.9 External Transmission or Reproduction of Documents and Information

Documents that are identified as possibly containing sensitive unclassified information shall only be transmitted outside an authorized place of use or storage by the WIPP mail service, U.S. mail, or an individual with authorized access.

Documents shall be packaged to preclude disclosure of the presence of sensitive unclassified information.

Packages to be mailed shall be marked with both a recipient address and return address.

Sensitive unclassified information shall only be discussed or transmitted over unprotected telephone or telecommunication circuits, or processed or produced on an automatic data processing system if it complies with the guidelines of the Office of Management and Budget (OMB) Circular A-71 for the protection of sensitive unclassified information.

Sensitive unclassified information shall be reproduced only when necessary to carry out official duties.

Reproduced sensitive unclassified information shall be properly marked.

Requests for release of sensitive unclassified information to sources without a need-to-know shall be referred to the security office.

When sensitive unclassified information is no longer needed or the subcontract work is completed and accepted, the subcontractor shall properly dispose of the information.
NOTE: Subcontractor failure to comply with disposal requirements will result in the WTS withholding final payment until such time as the subcontractor complies.

For offsite disposal, the subcontractor shall verify in writing to the Security Analyst that all subcontractor documents and other materials that contained sensitive unclassified information have been disposed of by methods that ensure complete destruction or otherwise preclude retrieval.

For onsite disposal, the subcontractor shall submit all subcontractor documents and other materials containing sensitive unclassified information to the Security Analyst (SA) for disposal.

47.0 OCCUPATIONAL MEDICAL CONTROLS

The occupational medical controls are described and implemented through compliance with WP 15-GM.02 in accordance with 10 CFR Part 851 and WP 15-HS.02, Occupational Health Program. Management of subcontractors in accordance with these requirements is done on a case by case basis as coordinated with WTS Occupational Health Services and may include direct participation by subcontractors in the WTS occupational medicine program, or requirements for their company to meet specific occupational medical requirements in 10 CFR Part 851 as part of their contract with WTS. These controls are applicable to subcontractors that are working more than 30 days in a 12 month period or are required to be enrolled in a medical or exposure monitoring program.

48.0 TRAINING CONTROLS

Subcontract employees are responsible for completing all assigned pertinent training. Employees will meet the established criteria for achieving and maintaining qualification. Subcontract personnel will meet the qualification requirements for the job function to be performed prior to active involvement in facility activities.

Subcontract personnel, including those who perform specialized activities, will meet the qualification requirements for the job function to be performed and will not be considered adequately qualified without proper documentation. Documentation will include at least one of the following:

- Satisfactory result of an audit of subcontractor records that relate to qualification of subcontractor personnel.
- Previous verification (within two years) of the ability of the subcontractor employee to perform assigned tasks safely and efficiently.
- Successful completion by the subcontractor employee of those segments of the WIPP qualification program which are considered pertinent to the accomplishment of the task to be performed.

Subcontractors shall comply with all of the learning requirements set forth in the contract special conditions.

All subcontractor/supplier personnel shall receive an initial site orientation at the site in which the work is taking place or General Employee Training (GET) at the WIPP site prior to performing any on-site or town work.

Subcontractor/supplier shall conduct and document project specific training in responsibilities and authority, general criteria, including applicable codes and standards, regulatory commitments, company procedures, and quality assurance program requirements for performing their assigned tasks. These requirements originate from, but are not limited to:

- Design output documents to include but not limited to, engineering drawings and technical specifications.
- Work planning documents to include but not limited to, quality assurance/control plans, job safety analyses, health and safety plans, and radiation control plans.
- Work controlling documents to include but not limited to, procedures, manuals, instructions, and work packages.
- Installation and application instructions to include but not limited to, manufacturer's recommendations or instructions.
- Contract or purchase order documents to include but not limited to, Special Conditions, General Provisions, and Requirements for Identifying Suspect/Counterfeit Items contractually applicable procedures.

48.2 Training Documentation Requirements

Documentation of Training Conducted by WTS

Documentation of all completed training conducted by the WTS shall be maintained in the WTS training records system.

WTS will provide completed training information for subcontractor personnel only from the WTS training records system to the subcontractor/supplier.

Training documentation provided to the subcontractor/supplier shall be in hard copy.

Documentation of training provided by the subcontractor/supplier or lower tier subcontractor/supplier

Original subcontractor/supplier training documentation shall be completed, maintained, and provide to WTS for review before the performance of the contract or purchase order.

Training provided by sources other than WTS

The subcontractor shall maintain relevant training documentation throughout the period of performance of subcontract work.

Copies of training documentation shall be provided to the WTS POC.

Additional Options for Objective Evidence

Subcontractor conducted training documentation

Certificate, roster, or card of course completion education, and training institutions documentation, as required by the subcontract. Examples listed as follows:

- Degree or diploma
- Vocational school certificate of completion
- Technical school certificate of completion
- Specialty school certificate of completion
- Trade school certificate of completion
- Industrial training program certificate of completion
- Documentation of completion of apprenticeship program(s) Government and subject matter program documentation
- Local, State or Federal license
- National consensus standards program completion record
- Government agency topical training endorsement Non-traditional documentation

NOTE: The use of non-traditional documentation should be limited to those persons without other formal means to demonstrate compliance. The acceptance of this documentation is subject to WTS review and acceptance.

49.0 RADIOLOGICAL CONTROL

49.1 Purpose

This document provides legal, regulatory and procedural requirements for subcontractors to follow when working in radiological controlled areas. Any applicable regulatory or WIPP requirements must be followed, with the most stringent requirement being met.

49.2 Applicability

This document contains the hierarchy of site procedures that apply to all subcontracts working at the WIPP site radiological controlled areas, as specified in their contract with WTS.

49.3 Requirements

10 CFR Part 835 is the primary legal document controlling the work at DOE sites, which is performed in radiological areas.

49.4 WIPP Radiological Control

The WP 12-5, WIPP Radiation Safety Manual, is the site-wide manual containing all of the DOE legal and regulatory requirements for work in radiological areas at the WIPP facilities.

50.0 ADDITIONAL RECORD KEEPING

A copy of the records of any personnel exposure to concentrations of toxic chemicals or other materials shall be retained and submitted to the POC. This includes the following:

- Correspondence prepared in the normal course of business concerning or documenting exposure.
- Standards, operating guides, and procedures (including revisions and background records).
- Operating plans concerning the above.
- Records and investigations establishing the extent of employee exposure to toxic chemicals and materials.
- Industrial hygiene log sheets recording surveys for industrial hazards.

The subcontractor shall ensure the recording and reporting of occupational injuries for each subcontract.

Monthly Safety Reports

Safety Meeting Reports shall be maintained at subcontractor's job site for review.

51.0 DEFINITIONS

- Acceptance (final) – The documented determination by the receiving organization that performance, results, or other characteristics of an item, process, or service is suitable for the intended purpose.
- Acceptance Criteria – Specified limits placed on the performance, results, or other characteristics of an item, process, or service defined in codes, standards, or other requirement documents.
- Assessment – A review, evaluation, inspection, test, check, surveillance, or audit, to determine and document whether items, processes, systems, or services meet specified requirements and perform effectively.

- Calibration – The set of operations which establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system and the corresponding standard or known values derived from the standard.
- Calibration Status Indicator – The use of labels and seals on measurement standards and material and testing equipment to ensure calibration status is clearly evident and to help guarantee the validity of data collection.
- Caution – Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.
- Clarification – A written response that provides direction regarding information or requirements that already exist in approved design or project documents. A clarification does not add, change, or delete technical requirements, design configuration, or work scope.
- Central Monitoring Room (CMR) – The central source of information pertaining to the site in the event of an emergency. This room is located on the second floor of the Support Building and is manned 24 hours a day 7 days a week.
- Close Proximity – The immediate area around an activity or incident within which an individual could be affected by the incident or activity.
- Competent Person – A person identified by the subcontractor who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them.
- Conditional Release – A controlled, documented, and approved release of a nonconforming item for limited use (pending nonconformance disposition) to permit continuation of construction, installation, maintenance, or modification where schedule delay has been determined to be a critical impact to the facility or project.
- Confined space – A space that (a) is large enough and so configured that an employee can bodily enter and perform assigned work; and (b) has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits that may have limited entry); and (c) is not designed for continuous employee occupancy. Confined spaces include both permit-required confined spaces and non-permit confined spaces.
- Contract – A binding agreement between two or more persons or parties, legally enforceable, and a business arrangement for the supply of goods or services at a mutually agreeable price.

- WTS Point of Contact (POC) – Individual identified in the contract documents as the duly authorized representative for overseeing subcontractor work activities (same as Contractor Field Representative).
- Controlled Articles – Includes, but is not limited to, government- or company-owned cameras, video/audio recording devices, transmitting devices, or other government property transported on or off the WIPP site or off site locations controlled under the WTS contract with the Department of Energy.
- Controlled documents – A document that is released within a system that imposes controls on the document’s development, revision, and distribution.
- Controlled Substances – Includes, but is not limited to, the following five basic categories:
 - Central Nervous System (CNS) – Stimulants, consist of three basic categories: Amphetamines, Methamphetamine, and Cocaine.
 - CNS – Depressants, consist of three basis categories: Barbiturates, Methaqualone, and Tranquilizers.
 - Narcotics/Opiates – Are also CNS depressants with the added characteristic of being a powerful analgesic or painkiller. Examples include Codeine, Demerol, Dialaudid, Methadone, Morphine, Opium, Percodan, and Heroin.
 - Hallucinogens – Consist of four major types: LSD (Lysergic acid diethylamide), Psilocybin, Mescaline (Peyote), and PCP (Phencyclidine hydrochloride).
 - Cannabis – Consists of Marijuana, Hashish, and Hashish Oil.
- Corrective action – Measures taken to rectify conditions adverse to quality and, where necessary, to preclude repetition.
- Competent Person – Individual who has been determined by the Cognizant Manager to have the necessary knowledge and experience to provide direction and perform in an oversight position to assess work hazards and mitigations while on the job site. Performs observations as necessary, provides job site safety briefing as necessary, and post job reviews. This individual may be a WTS employee or their subcontractors.
- Danger - Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
- Design Change – Any revision or alternation of the technical requirements defined by approved and issued design output documents and approved and

issued changes thereto. For example; a change in raw material, color, dimension, shape, or a part could be added or deleted from an assembly.

- Disposition – A statement of the action(s) to be taken to deal with a nonconforming condition. Nonconformance Report (NCR) disposition categories include:
 - Rework – the action taken to correct nonconformances to meet original specified requirements.
 - Use-As-Is – the action taken when the nonconformance will not adversely affect engineering functional requirements, including performance, maintainability, fit, or safety.
 - Repair – the action taken to correct nonconformances to safe and reliable function although the item does not conform to original specified requirements.
 - Reject – the item is unsuitable for the intended use and is economically impractical or physically incapable of being reworked or repaired.
- Entry – The action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.
- Excavation – Any man made cut, cavity, trench, or depression in an earth surface bearing any depth that produces unsupported earth conditions by reasons of earth removal, where danger exists to personnel.
- Escort – An individual who has assumed the responsibility of the individual being escorted.
- Exclusion Area – A one square mile area directly surrounding the Property Protection Area with restricted access and activities.
- Facility Shift Manager (FSM) – The individual responsible for the overall coordination and approval of activities associated with the site. There is a FSM on duty 24 hours a day, 7 days a week.
- Field Work – Work performed in areas outside of individual WIPP facility boundaries, but within the WIPP site boundary. Examples of fieldwork include, but are not limited to, well-drilling, geological surveys, cultural resources studies, Environmental Monitoring, and off-road tours.
- Formal Training – A documented systematic process provided to personnel so that they achieve proficiency, maintain proficiency, and adapt to changes in

technology, methods, processes, or responsibilities as necessary to perform assigned tasks.

- General Employee Training (GET) – WIPP site specific training to the minimum safety requirements for unescorted site access.
- Graded Approach – A process by which the level of analysis, documentation, and actions necessary to comply with a requirement are commensurate with:
 - Relative importance to safety, safeguards, and security
 - Magnitude of any hazard involved
 - Life-cycle stage of the facility
 - Programmatic mission of a facility
 - Particular characteristics of the facility or item
 - Relative importance to radiological and non-radiological hazards
 - Other relevant factors
- Hazard Evaluation – An assessment documenting the potential dangers and unhealthy exposures associated with each activity and the means that will eliminate, mitigate or administratively control such hazards.
- Hazardous agent – Chemical agents (such as toxins, corrosives, irritants, sensitizers, carcinogens, teratogens, mutagens, cutaneous hazards, eye hazards, combustible liquids, compressed gases, explosives, flammables, organic peroxides, oxidizers, pyrophorics, unstable/reactive chemicals, and water reactive chemicals), physical agents (such as noise, vibrations, temperature extremes, or non-ionizing radiations), biological agents (such as hantavirus or bloodborne pathogens), and ergonomic factors (such as work station design and lifting) that, in the professional opinion of a qualified person, have the reasonable potential to cause injury or illness to employees. Individual components of chemical mixtures are considered hazardous agents when they are present in concentrations of $\leq 1.0\%$ (or $\geq 0.1\%$ of a carcinogen), unless evidence suggests the components present in concentrations of $< 1.0\%$ (or $> 0.1\%$ if a carcinogen) could be released in concentrations that would exceed the OSHA Permissible Exposure Limits (PELs)/ACGIH TLV action levels. Physical agents are considered hazardous agents when, under a worst-case scenario, the workplace levels can potentially equal or exceed the OSHA PEL/ACGIH TLV action levels. There are no threshold limit values for biological agents.
- Hazardous chemical – A chemical or product is considered to be hazardous if it:
 - A. Listed in 29 CFR Part 1910, Subpart Z, "Toxic and Hazardous Substances."
 - B. Appears on the annual National Toxicology Program listing.
 - C. Categorized by the International Agency for Research on Cancer as Groups I and II.

- D. Regulated as a carcinogen by OSHA.
- E. TLV established by the ACGIH in the latest edition of their annual list.
- F. Designated a hazardous chemical by the cognizant industrial hygienist; if he/she determines that potential exposure to the chemical warrants the use of engineering controls, administrative procedures, or personal protective equipment.
- Heavy industrial equipment – Self-propelled equipment designed to operate within off-highway job sites, as well as any attachments, trailers, implements, or loads. Such equipment also includes the following:
 - Backhoes and loaders (rubber tired or track)
 - Bulldozers (rubber-tired or track)
 - Dump trucks, flat beds, end-dumps, and other equipment for hauling
 - Forklift trucks
 - Industrial or agricultural tractors (rubber-tired or track)
 - Motor graders
 - Off-highway trucks of greater than 1-ton capacity
 - Mobile cranes and hoists
 - Oversize trailers
 - Self-propelled scrapers (rubber tired or track)
 - Other similar equipment used in construction work
- Higher than normal risk employee – A person whose work may involve exposed, energized electrical parts operating at 50 volts or more to ground. Jobs that fall into this category include, but are not limited to: craft supervisors; industrial machine operators; material handling equipment operators and riggers; mechanics, welders, painters, laborers, and custodial workers; process operators; truck drivers; planners and inspectors; telecommunication workers; and battery workers.
- Independent (inspection, test and nondestructive examination) – Performed by qualified personnel other than those who performed or directly supervised the work.
- In process – The time that an item is being controlled under a normal work process (e.g., maintenance, construction, modification, testing, and inspection) and the process has not yet been completed.
- Inspection – An examination or measurement to verify whether an item or activity conforms to specified requirements.
- Interactive Briefing – Briefing leader engages the attendees through questions and responses to ensure personnel understand the work scope, the hazards, and the mitigation controls.

- Land Withdrawal Area (16 sections) – A sixteen section land Federal land area under the jurisdiction of the DOE and open to the general public for use.
- Manual Work (hands on) – Work that is normally performed outside an office environment, generally in the field or during maintenance activities in or near facilities. Such work typically involves the use of hand and/or power tools, or operation of equipment in the field.
- Measuring and test equipment (M&TE) – Devices or systems used to calibrate, measure, gage, test, or inspect in order to control or acquire data to verify conformance to specified requirements. NOTE: The term M&TE includes measuring equipment used for process monitoring, data collection, testing, inspection, and calibration of other instruments. Measuring and test equipment is taken to encompass measuring instruments and measurement standards. A reference material is considered to be another type of measurement standard. The term M&TE does not include safety and health instrumentation and equipment used to monitor working environments for employee safety and health, i.e., noise dosimeters, environmental monitors, light meters, etc.
- Near (for exposed energized electrical equipment) – As it pertains to unqualified persons, this is anywhere inside the limited approach boundary (see def.) of exposed energized electrical conductors or circuit parts that are not put into an electrically safe work condition. As it pertains to qualified persons, this is anywhere inside the restricted approach boundary (see def.) of exposed energized electrical conductors or circuit parts that are not put into an electrically safe work condition.
- Nonconformance – A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.
- Non-permit confined space – A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any recognized, serious safety or health hazard capable of causing death or serious physical harm.
- Or-Equal – Products of other manufacturer's that fully meet or exceed all minimum structural, use, and operational features of the particular manufacturer's item specified in the project documents. The other manufacturer's item must be easily interchangeable and be adequately incorporated within the allocated space in the building or structure. Additionally, the delivery of the item(s) must not delay or in any way compromise the completion date(s) of the project.

- Permissible exposure limit (PEL) – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 50 µg/m³ averaged over an 8-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the PEL, as a time-weighted average (TWA) for that day, shall be reduced according to the following formula:
 - Maximum permissible limit (in µg/m³) = 400 divided by hours worked in the day.
- Permit-required confined space (permit space) – A confined space that has one or more of the following characteristics:
 - A. Contains or has a potential to contain a hazardous atmosphere.
 - B. Contains a material that has the potential for engulfing an entrant.
 - C. Internal configuration in which an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section.
 - D. Contains any other recognized serious safety or health hazard.
- Point of Contact (POC) – Individual identified in the contract documents as the duly authorized representative for overseeing subcontractor work activities.
- Powered industrial truck – A mobile, power-driven vehicle used to carry, push, pull, lift, stack, or tier material.
- Procurement Document – Purchase requisitions, purchase orders, drawings, contracts, specifications, or instructions used to define requirements for purchase.
- Procedures – A document that specifies or describes how an activity is to be performed.
- Process – A series of actions that achieves an end result.
- Prohibited Articles – Includes, but is not limited to, firearms, ammunition, alcoholic beverages, illicit narcotics, explosives, wiretapping or eavesdropping devices, or any dangerous or potentially dangerous instruments or materials likely to cause substantial injury to persons, property, or animals.
- Property Protection Area – A type of security area having boundaries identified with barriers and access controls for the protection of DOE property.
- Quality – The condition achieved when an item, service, or process meets or exceeds the user's requirements and expectations.

- Quality Assurance (QA) – All those actions that provide confidence that quality is achieved.
- QA Record – A completed document that furnishes evidence of the quality of items and/or activities affecting quality. In addition to paper (e.g., hard copy), records may include electronic documents and specially processed records such as radiographs, photographs, negatives, and microforms.
- Qualified Person – A person identified by the subcontractor who by professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.
- Required Reading – Method of training whereby the subcontract employee accepts the responsibility of gaining an understanding of the required information by reading and acknowledging comprehension of specified documents.
- Safety Review – A deliberate and critical review of a hazard evaluation or a document that will support a hazard evaluation for applicability, adequacy, and management acceptance/approval of applicable IS&H requirements for a proposed activity to ensure employee and public health and safety, facility safety, and environmental review.
- Status Indicator – Written, pictorial, or other visual or recorded information describing the status of an item such as tags, color-coding and/or markings which identify an item's disposition.
- Subcontractor – Any individual or organization who furnishes services in accordance with a procurement document. The term subcontractor automatically includes sub-tier subcontractors.
- Subcontract Technical Representative (STR) – A person nominated by management and approved by Procurement to administer all technical subcontract requirements that would include the SOW, Safety requirements, QA requirements, and required subcontractor training.

- Suspect/Counterfeit Item (S/CI) - An item is suspect when visual inspection or testing indicates that it may not conform to established Government or industry-accepted specifications or national consensus standards or whose documentation, appearance, performance, material, or other characteristics may have been misrepresented by the supplier or manufacturer. A counterfeit item is one that has been copied or substituted without legal right or authority or whose material, performance, or characteristics have been misrepresented by the supplier or manufacturer. Items that do not conform to established requirements are not normally considered Suspect/Counterfeit Items (S/CIs) if nonconformity results from one or more of the following conditions (which must be controlled by site procedures as nonconforming items):
 - A. Defects resulting from inadequate design or production quality control
 - B. Damage during shipping, handling, or storage
 - C. Improper installation
 - D. Deterioration during service
 - E. Degradation during removal
 - F. Failure resulting from aging or misapplication
 - G. Other controllable causes
- Site – The entire facility including the Land Withdrawal Area, exclusion area, and property protection area.
- Stop Work Authority – The authority given to any individual while at the WIPP to stop work when it is reasonable to believe a safety or health hazard exists.
- Temporary Facility – Manufactured structures, mobile homes, trailers, semi-trailers, modular structures, factory assembled structures, cargo containers, hazardous materials or flammable liquid storage containers, air-supported or inflated structures, and tent/membrane and cloth/rib structures documented to be in use for 6 months or less. This term does not apply to trailers and cargo containers that are being used in the transportation mode for conveying materials while on site, or to prefabricated buildings that are permanently located, such as "Butler" or "Strand Steel" buildings.
- Temporary Installation – An installation not intended for permanent use, but meeting all the requirements for a permanent installation, except as modified by the provisions of the NEC Article 527, *Temporary Installations*. Temporary installations are generally associated with an altered or different use of a structure and may involve a building under construction, remodeling of an existing structure, or a building used to conduct tests. An altered or different use of a structure or building includes construction, maintenance, remodeling,

demolition, or similar projects. Wiring methods and materials for temporary installations are covered under the NEC Chapter 3 and other articles cover equipment as part of the complete installation. A temporary installation must be completely removed upon completion of the project it was intended for.

- Traceability – The ability to trace the history, application, or location of items or activities by means of recorded identification.
- Vehicle – Government owned or leased motor vehicles and powered industrial equipment (i.e., fork trucks, tractors, platform lift trucks, and other similar specialize equipment powered by an electric motor or internal combustion engine.)
- Vendor – Anyone providing supplies to the WIPP and not providing other services.
- Verify – The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining whether items, processes, services, or documents conform to specified requirements. For deficiency reports, the verification is performed by an individual who is independent of the deficiency corrective actions.
- Visitor – Any non-WIPP worker entering the site who is not a subcontractor or vendor.
- Work – A defined task or activity such as research and development, operations, environmental remediation, maintenance and repair, administration, safety software development/validation/testing and use, inspection, safeguards and security, data collection and analysis.
- Workability review – A review of the work and any supporting documentation to ensure that required hazard evaluations and safety reviews are complete, are applicable to the scope of work, and satisfy the criteria given in this procedure and WP 12-IS3002, Job Hazard Analysis Development. This review also ensures that the work can be completed safely and efficiently according to the work instructions, procedures, drawings, and vendor manuals identified, referenced, or included in the work order. The workability review can be a separate activity or performed at a meeting such as a scheduling meeting. This includes a job site walk down.
- Work order – A task-authorizing document that is uniquely numbered, and which contains the requirements for work to be performed. A work order MAY include associated drawings, procedures, schedules, permits, and other written documentation necessary to perform construction activities.

52.0 REFERENCES

- 10 CFR Part 851, "Worker Health and Safety Program"
- 29 CFR §1910.25, "Portable Wood Ladders"
- 29 CFR §1910.26, "Portable Metal Ladders"
- 29 CFR §1910.27, "Fixed Ladders"
- 29 CFR §1910.67, "Vehicle-mounted Elevating and Rotating Work Platforms"
- 29 CFR §1910.94(a), "Abrasive"
- 29 CFR §1910.95, "Occupational Noise Exposure"
- 29 CFR §1910.120, "Hazardous Waste Operations and Emergency Response"
- 29 CFR §1910.133, "Eye and Face Protection"
- 29 CFR §1910.134, "Respiratory Protection"
- 29 CFR §1910.135, "Head Protection"
- 29 CFR §1910.136, "Foot Protection"
- 29 CFR §1910.138, "Hand Protection"
- 29 CFR §1910.144, "Safety Color Code and Accident Prevention Signs"
- 29 CFR §1910.145, "Specifications for Accident Prevention Signs and Tags"
- 29 CFR §1910.146, "Permit-Required Confined Spaces"
- 29 CFR §1910.147, "The Control of Hazardous Energy (Lockout/Tagout)"
- 29 CFR §1910.250, "Material Handling, Storage, Use, and Disposal"
- 29 CFR §1910.269, "Electric Power Generation, Transmission, and Distribution"
- 29 CFR §1910.350, "Gas Welding and Cutting"
- 29 CFR §1910.352, "Fire Prevention"
- 29 CFR §1910.353, "Ventilation and Protection in Welding, Cutting, and Heating"
- 29 CFR §1910.1200, "Hazard Communication"

- 29 CFR Part 1910, "Occupational Safety and Health Standards"
- 29 CFR Part 1910, Subpart D, "Walking-Working Surfaces"
- 29 CFR Part 1910, Subpart H, "Hazardous Materials"
- 29 CFR Part 1910, Subpart I, "Personal Protective Equipment"
- 29 CFR Part 1910, Subpart N, "Materials Handling and Storage"
- 29 CFR Part 1910, Subpart O, "Machinery and Machine Guarding"
- 29 CFR Part 1910, Subpart P, "Hand and Portable Powered Tools and Other Hand-Held Equipment"
- 29 CFR Part 1910, Subpart Z, "Toxic and Hazardous Substances"
- 29 CFR §1926.21, "Safety Training and Education"
- 29 CFR §1926.52, "Occupational Noise Exposure"
- 29 CFR §1926.59, "Hazard Communication"
- 29 CFR §1926.65, "Hazardous Waste Operations and Emergency Response"
- 29 CFR §1926.404, "Wiring Design and Protection"
- 29 CFR §1926.416, "General Requirements"
- 29 CFR §1926.417, "Lockout and Tagging of Circuits"
- 29 CFR §1926.453, "Aerial Lifts"
- 29 CFR §1926.501, "Duty to Have Fall Protection"
- 29 CFR §1926.502, "Fall Protection Systems Criteria and Practices"
- 29 CFR §1926.651, "Specific Excavation Requirements"
- 29 CFR §1926.701, "General Requirements"
- 29 CFR §1926.701(b), "Reinforcing Steel"
- 29 CFR §1926.702, "Requirements for Equipment and Tools"
- 29 CFR §1926.703, "Requirements for Cast-in-Place Concrete"
- 29 CFR §1926.704, "Requirements for Precast Concrete"

- 29 CFR §1926.705, "Requirements for Lift-Slab Construction Operations"
- 29 CFR §1926.706, "Requirements for Masonry Construction"
- 29 CFR §1926.752, "Site Layout, Site-Specific, Erection Plan and Construction Sequence"
- 29 CFR §1926.753, "Hoisting and Rigging"
- 29 CFR §1926.754, "Structural Steel Assembly"
- 29 CFR §1926.755, "Column Anchorage"
- 29 CFR §1926.756, "Beams and Columns"
- 29 CFR §1926.757, "Open Web Steel Joists"
- 29 CFR §1926.758, "Systems-Engineered Metal Buildings"
- 29 CFR §1926.759, "Falling Object Protection"
- 29 CFR §1926.761, "Training"
- 29 CFR §1926.1053, "Ladders"
- 29 CFR Part 1926, "Safety and Health Regulations for Construction"
- 29 CFR Part 1926, "Personal Protective and Life Saving Equipment"
- 29 CFR Part 1926, Subpart G, "Signs, signals, and Barricades"
- 29 CFR Part 1926, Subpart H, "Materials Handling, Storage, Use, and Disposal"
- 29 CFR Part 1926, Subpart I, "Tools-Hand and Power"
- 29 CFR Part 1926, Subpart L, "Scaffolds"
- 29 CFR Part 1926, Subpart M, "Fall Protection"
- 29 CFR Part 1926, Subpart N, "Cranes, Derricks, Hoists, Elevators, and Conveyors"
- 29 CFR Part 1926, Subpart O, "Motor Vehicles, Mechanized Equipment, and Marine Operations"
- 29 CFR Part 1926, Subpart P, "Excavations"

- 29 CFR Part 1926, Subpart Q, "Concrete and Masonry Construction"
- 29 CFR Part 1926, Subpart R, "Steel Erection"
- 29 CFR Part 1926, Subpart V, "Power Transmission and Distribution"
- 29 CFR Part 1926, Subpart X, "Stairways and Ladders"
- 30 CFR Part 47, "Hazard Communication"
- 30 CFR Part 48, "Training and Retraining of Miners"
- 30 CFR Part 57, Subpart Q, "Safety Programs"
- 30 CFR Series
- 30 CFR Part 57, Subpart N, "Personal Protection"
- 48 CFR §970.2201(b)(1)(ii), "Basic Labor Policies"
- 49 CFR Part 171, "General Information, Regulations, and Definitions"
- 49 CFR Part 172, Subpart E, "Labeling"
- 49 CFR Part 173, Subpart G, "Gases; Preparation and Packaging"
- 49 CFR Part 177, "Carriage by Public Highway"
- 49 CFR Part 178, "Specifications for Packagings"
- ANSI A10.14-1991, *Requirements for Safety Belts, Harnesses, Lanyards, and Lifelines for Construction and Demolition Use*
- ANSI A10.9-1983, *Safety Requirements for Concrete and Masonry Work*
- ANSI A10.9a-1989, *Construction and Demolition Operations – Concrete and Masonry Work*
- ANSI A58.1-1982, *American National Standard Minimum Design Loads for Buildings and Other Structures*
- ANSI Z359.1-1992, *Safety Requirements for Personal Fall Arrest Systems, subsystems and Components*
- ANSI Z41, *Personal Protection-Protective Footwear*
- ANSI Z49.1-2005, *Safety in Welding, Cutting, and Allied Processes*

- ANSI Z87.1-1968, *American National Standard for Occupational and Educational Eye and Face Protection*
- ANSI Z89.1-2003, *Personal Protection-Protective Headwear for Industrial Workers*
- ANSI Z89.2-1971, *Industrial Protection Helmets for Electrical Workers, Class B*
- API RP 54, *Recommended Practice for Occupational Safety for oil and Gas Well Drilling and Servicing Operations*
- ASME B30 Series, *Cranes and Rigging*
- ASTM F2413, *Standard Specification for Performance Requirements for Foot Protections*
- Atomic Energy Act of 1954, Section 148
- CGA V-1, *American National, Canadian, and Compressed Gas Association*
- NEC Article 527, *Temporary Installations*
- NEC Chapter 3, *General Wiring Methods*
- NFPA 50, *Bulk Oxygen Systems at Consumer Sites*
- NFPA 51, *Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*
- NFPA 51B, *Fire Prevention in Use of Cutting and Welding Processes*
- NFPA 55, *Storage, Use, and Handling of Compressed and Liquefied Gases*
- NFPA 70, *National Electrical Code*
- NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*
- NFPA 101, *Code for Safety to Life from Fire in Buildings and Structures*
- Office of Management and Budget (OMB) Circular A-71
- STD-116, *Architectural-Engineering Standards, Appendix K*
- Underwriter's Laboratory, "Building Materials Directory"
- DOE Form F5631.29, *Security Termination Statement*

- DOE/WIPP-07-3372, *Waste Isolation Pilot Plan Documented Safety Analysis*
- DOE/WIPP-07-3373, *Waste Isolation Pilot Plan Technical Safety Requirements*
- DOE-STD-1088-95, *Fire Protection for Relocatable Structures*
- DOE-STD-1090-2007, *Hoisting and Rigging Standard*
- WP 02-EC.12, Site Users Guide for Organizations, Personnel, or Companies That Perform Work on U.S. Department of Energy Property or Rights-of-Way on or Around the Waste Isolation Pilot Plant Site
- WP 04-AD3011, Equipment Lockout/Tag out
- WP 04-AD3013, Underground Access Control
- WP 04-AD3028, Storage of Compressed Gas Cylinders Weekly LCO Surveillances
- WP 12-5, WIPP Radiation Safety Manual
- WP 12-IH.02, Industrial Hygiene Program
- WP 12-IH.02-2, WIPP Industrial Hygiene Program - Confined Spaces
- WP 12-IH.02-4, WIPP Industrial Hygiene Program - Hazard Communication and Hazardous Materials Management Plan
- WP 12-IH.02-5, Hearing Conservation
- WP 12-IS.01, Industrial Safety Program
- WP 12-IS.01-1, Industrial Safety Program-Postings, Warnings, and Hazard Identification
- WP 12-IS.01-3, Equipment and Tools
- WP 12-IS.01-4, Industrial Safety Program-Emergency and Personnel Protective Equipment
- WP 12-IS.01-5, Industrial Safety Program - Hazardous Locations and Working Surfaces
- WP 12-IS.01-7HV, Industrial Safety Program – Craft Manual – Electrical Safety
- EA12IS01-6-1-0, Subcontractor Safety Qualifications form
- WP 12-IS.07, General Electrical Safety

- WP 12-IS3002, Job Hazard Analysis Development
- WP 12-SA3130, Occupational Injuries, Illnesses, and Close Calls
- WP 15-GM.02, Worker Safety and Health Program Description
- WP 15-GM.03, Integrated Safety Management System Description
- WP 15-HS.02, Occupational Health Program
- WP 15-PC3041, Approval/Variation Request Processing
- MW100073, Transport, Storage, and Use of Compressed Gas Cylinders

Attachment 1 – Stop Work Action

SECTION I			
Work Stopped By:			
_____	_____	_____	_____
Printed Name	Employee Number	Signature	Date
Work Order/PO or Project Number: _____			
SECTION II			
Justification for Stop Work Action: _____			

SECTION III			
Mitigations: (Work Performed, or action taken, in order to resume work): _____			

SECTION IV			
Authorization to Start (Requires all signatures prior to the resumption of work):			
Employee Concurrence:			
_____	_____	_____	_____
Printed Name	Signature	Date	
Cognizant Manager/Supervisor:			
_____	_____	_____	_____
Printed Name	Signature	Date	
IS&H Representative:			
_____	_____	_____	_____
Printed Name	Signature	Date	