

CORPORATE SAFETY MANUAL



VIRTEXCO
CORPORATION
General Contractor

An Employee Owned Company



VIRTEXCO CORPORATION
CORPORATE SAFETY MANUAL

TABLE OF CONTENTS

- I. Corporate Safety Policy
- II. Responsibilities and Administration
- III. Incident Prevention Plan
- IV. Instruction and Training
- V. Progressive Disciplinary Program
- VI. Subcontractors
- VII. Medical Care
- VIII. Fire Protection
- IX. Personal Protective Equipment
- X. Assured Grounding of Electrical Circuits and Power Tools

Appendixes:

- A. Incident Procedure Policy
- B. Progressive Disciplinary Program
- C. Personal Protective Equipment Training
- D. Employee Safety Handbook
- E. Excavation Policy
- F. Confined Space Entry Procedure
- G. Respiratory Protection Policy
- H. Hazard Communication Program
- I. Lockout/Tag-out Procedure
- J. Tool & Equipment Repair Policy
- K. VIRTEXCO Drug-Free Workplace Policy
- L. Ladders and Stairways
- M. Fall Protection
- N. Hearing Conservative
- O. Scaffolding
- P. Hot Work Procedure
- Q. Steel Erection Requirements
- R. Crane Suspended Personnel Platforms Requirements



CORPORATE SAFETY POLICY

VIRTEXCO Corporation has been engaged in construction for over three decades. Great pride has been taken in a continuing concern for the safety and health of all our employees. No single feature of our work is of greater importance.

Our commitment is to make our projects and operations as safe as humanly possible. Construction projects, by their nature, present an environment where people can get injured. There are no accidents, just incidents. VIRTEXCO expects all employees to follow our Safe Practices. Consistent SAFETY AWARENESS prevents illness and injuries to employees and their fellow workers. It is mandatory that every person employed by VIRTEXCO Corporation be continually aware of this commitment to safety.

Our company operations are to be carried out in compliance with, and exceeding, Safety and Health regulations promulgated by Federal, State and Local Governments. Every employee is morally bound to follow our Safe Practices and instruct our fellow workers to do the same, as well as, recognize and correct unsafe conditions.

The result of our safety efforts affects our overall success in the construction industry. Our goal is an incident free workplace with the traditional outstanding VIRTEXCO quality and timeliness.

Donald P. Adams
VIRTEXCO Corporation
President

II. RESPONSIBILITIES AND ADMINISTRATION OF THE CORPORATE PROGRAM

The Director of Safety will:

1. Establish policies and procedures for the Company Safety Program, while evaluating current policies and procedures for effectiveness.
2. Keep abreast of governmental regulations concerning occupational safety and health and keep Project Managers and Superintendents up-to-date.
3. Regularly visit jobsites to conduct safety inspections, communicate with employees, and provide training and technical assistance as needed.
4. Represent VIRTEXCO Corporation at conferences as required by customers, government agencies and other organizations.
5. Review all corporate incident reports and personally investigate serious incidents. Oversee the VIRTEXCO job related Restricted Duty Program (Appendix A). Follow-up on a regular basis all lost time incidents until injured returns to work. Maintain close liaison with workers' compensation insurance carrier.
6. Review periodic workers' compensation loss reports and keep Management apprised of trends. Compile periodic safety statistical reports and distribute to all interested parties.
7. Serve as Corporate consultant and clearinghouse for all employees on safety and health related issues.

The Project Manager will:

8. Initiate, in conjunction with the Director of Safety, an Accident Prevention Plan for each project under their control.
9. Ensure that all aspects of the Corporate Safety Program and applicable regulations are in effect or exceeded on the jobsite.
10. Promote hazard awareness and accident prevention during all phases of work, especially at job start-up.
11. Ensure that Superintendents are knowledgeable in applicable safe practices, rules and regulations.
12. Ensure that Superintendents are available for required safety and health training.

The Superintendent will:

1. Enforce the elements of the Safety Program, Accident Prevention Program, and all other applicable safety and health regulations.
2. Orientate each new employee with the Company Safety Program by utilizing the New Employee Orientation Program and present site conditions.

3. Orientate each subcontractor with company safety practices by utilizing the Safety Manual.
4. Ensure that each subcontractor review all hazardous phases of work with them before work has begun.
5. Conduct a group safety meeting on a weekly basis. Topics discussed should include distributed safety talks, jobsite hazards, recent or frequent incidents, and Material Safety Data Sheets.
6. Conduct a daily safety inspection of each jobsite and record any unsafe conditions by employees or subcontractors. When a violation is found, a time shall be set for compliance, and a follow-up inspection will be made to ensure compliance.
7. Give a prompt response to all complaints, recommendations, or suggestions made by employees and subcontractors concerning job safety and health.
8. Communicate to their workers all new standards and procedures established by the Department of Labor and the Company as they are received from the Director of Safety.
9. Investigate all accidents in accordance with the established Accident Procedure Policy (Appendix A).
10. Ensure that all personal protective equipment and safety devices are used as directed.
11. Inform the Director of Safety immediately of a safety and health inspection by Federal or State Occupational Safety and Health Agency.

The Employee will:

1. Follow safe work practices and adhere to all safety policies and procedures established by the Company.
2. Report all incidents or near misses to Superintendent immediately, no matter the severity of the injury.
3. Attend and participate in weekly safety meetings.
4. Maintain a clean and safe work area.
5. Wear and use all assigned protective equipment and devices as instructed by the Superintendent.
6. Report all unsafe work conditions, which may exist in the work areas, and not work in any unsafe work situation.

III. INCIDENT PREVENTION PLANS

An Incident Prevention Plan shall be developed for each VIRTEXCO project. Each plan shall address all major or unique tasks that will be performed during the project. The following are aspects that shall be addressed in each Plan:

1. Safety and health policy statement.
2. Responsibilities of key personnel.
3. Coordinating and controlling subcontractors.
4. Training of employees and subcontractors.
5. Provisions for inspections, corrections, and follow-up.
6. Investigation and reporting of incident and near misses.
7. Emergency response (i.e., First Aid & Natural Disaster)
8. Contingency plan for severe weather.
9. Public safety.
10. Prevention of Drugs and Alcohol on the jobsite.
11. Plans to implement the Hazard Communication Program.

Each Plan shall remain in effect for the duration of the project. Changes shall be made to the Plan on an as needed basis. All changes shall be approved by the Director of Safety.

IV. INSTRUCTION AND TRAINING

Employees:

All new employees will receive orientation training using the VIRTEXCO Employee Safety Handbook (Appendix D of this manual) and the following:

1. VIRTEXCO's Safety Handbook.
2. Hazard Communication.
3. Ladder and Stairway.
4. Personal Protection Equipment.
5. How to recognize and report hazardous or unsafe conditions.

All employees will receive periodical field training in:

Ladders & Stairways	Fire Protection
Scaffolding Safety	Welding Safety
Lockout/Tagout	Lead
Electrical Safety	Fall Protection
Trenching & Shoring	Confined Space Entry
Hazard Communication	Back Safety

Field Training will consist of an overview of the topic a syllabus or, training video, review of key points, a signed acknowledgment of training which will be kept for the record in the job file.

Superintendents:

All Superintendents will receive certified training in:

1. The policies and procedures in the Corporate Safety Manual.
2. Occupational Safety and Health - Construction Standards. (30 Hour)
3. Cardiopulmonary Resuscitation First Aid, CPR and AED.
4. Other certified training will be provided on an as needed basis.

Weekly Safety Training:

The site Superintendent, or a designated representative, shall initiate the weekly safety meeting for all site personnel. The training presented should be related to the work being performed at the jobsite. Each individual attending the weekly safety meeting shall print and sign their name along with their Company's name on the safety meeting form (see the Safety Meeting tab). Training records shall be forwarded to the Director of Safety for review and record.

V. PROGRESSIVE DISCIPLINARY PROGRAM

VIRTEXCO Corporation's Progressive Disciplinary Program ensures that all rules, regulations, and directives are adhered to. The four step program (Appendix B) shall be implemented when a VIRTEXCO employee fails to comply with information or training that has been provided for their safety.

Subcontractors are subject to progressive discipline (Appendix B) for noncompliance to safe practices, regulations, and directives. The degree of discipline should be determined by the site Superintendent and/or Project Manager. All noncompliance shall be documented in the daily log and a written notification shall be given to the subcontractor found in violation. A copy of all notifications shall be forwarded to the Director of Safety for further review.

VI. SUBCONTRACTORS

All subcontractors shall abide by all applicable rules, regulations, and directives set forth by governing organizations, to include VIRTEXCO Corporation. When there is a conflict the more stringent rule or regulation shall govern.

The site Superintendent shall inform all subcontractors of the VIRTEXCO progressive disciplinary program (Exhibit B) for noncompliance to safety and health rules, regulations, and directives.

An initial or preparatory meeting shall take place with the site Superintendent before the subcontractor begins work.

During this meeting:

- The scope of work will be discussed.
- A hazard analysis shall be developed before any hazardous or major phase of work begins.
- The Corporate Safety Manual is to be issued and sections that will pertain to the work are to be addressed.
- A copy of each Subcontractor's Hazard Communication Program and all Material Safety Data Sheets (MSDS) shall be accepted.

VII. MEDICAL CARE

It is VIRTEXCO's responsibility to provide at least one trained and certified individual to render First Aid and CPR to employees who sustain a work-related injury.

A local minor care facility and hospital shall be identified in the Accident Prevention Plan as primary treatment facilities for work-related illnesses and injuries. Phone numbers shall be conspicuously posted by each telephone. (see Information Tab)

VIRTEXCO's on the job, Incident or Illness Procedure Policy (Appendix A) shall be followed for all work-related injuries involving Company personnel.

VIII. FIRE PREVENTION

The Superintendent, Project Manager, and Director of Safety are collectively responsible for identifying fire hazards and determining the necessary preventive measures to eliminate them.

VIRTEXCO will at a minimum, provide portable fire suppression equipment at each jobsite in accordance with the following requirements:

1. A 10 pound ABC fire extinguisher, shall be provided for each 3,000 square feet of the protected building area, or major fraction thereof. Travel distance from any protected area to the nearest fire extinguisher shall not exceed 100

- feet.
2. One or more 10 pound ABC fire extinguishers shall be provided so that the travel distance is no greater than 100 feet on each floor. In multi-story buildings, at least one fire extinguisher will be located next to stairways on every floor.
 3. A 10 pound ABC fire extinguisher is to be provided within 50 feet of wherever more than 5 gallons of flammable or combustible liquids or 5 pounds of flammable gas are being used on the jobsite.
 4. A 10 pound ABC fire extinguisher, in a vehicle bracket; is to be mounted on each piece of fuel powered equipment.

All VIRTEXCO personnel will receive training in fire prevention, selection and use of portable fire extinguishers.

When a VIRTEXCO customer requires a hot work permit to be secured before work is performed, the Superintendent shall be responsible for ensuring that all restrictions on the permit are enforced (see Appendix P).

All hot work that requires a Fire Watch to be present shall utilize VIRTEXCO's Hot Work Procedure (Appendix P) unless a more stringent policy is in effect.

IX. PERSONAL PROTECTIVE EQUIPMENT (PPE)

The site Superintendent shall determine the need/use of safety equipment and PPE for their specific project; however, the following PPE is mandatory at all times:

- Hard hats are required on all VIRTEXCO projects or locations.
- Eye protection is required on all VIRTEXCO projects or locations.
- Construction work shoes, made of heavy leather uppers and hard soles are required on all VIRTEXCO's jobsites or locations. **No tennis shoes or dress shoes allowed.**
- Fall protection is required when a fall of six (6) feet or greater is present.
- Vehicle seat belts shall be worn by drivers and riders by drivers and riders at all times when a vehicle is in motion.

All safety equipment and PPE must be inspected before use. Any equipment found to be damaged in any manner so as to reduce its effectiveness in fulfilling its original purpose, will be taken out of service immediately and tagged unserviceable (see Appendix C for training requirements).

X. ASSURED GROUNDING OF ELECTRICAL CIRCUITS AND POWER TOOLS

All electric power tools and cords energized by temporary power shall have a continuous path to ground maintained at all times. Temporary power is defined as power that is not an integral part of a building's structure. For example: using an extension cord to perform a task is considered using temporary power. Continuous grounding shall be accomplished by the use of a GROUND FAULT CIRCUIT INTERRUPTER (GFCI).

**VIRTEXCO CORPORATION
ON THE JOB INCIDENT OR ILLNESS PROCEDURE POLICY**

PURPOSE:

The purpose of this policy is to ensure that all individuals who become ill or are injured as a result of job related activities, receive immediate medical care and any subsequent prescribed treatment.

SCOPE:

This policy applies to all employees of VIRTEXCO CORPORATION who sustain a job related illness or injury.

REPORTING WORK RELATED INCIDENT OR ILLNESSES (see Incident Report Form Tab):

- A. Each VIRTEXCO employee who receives a work related illness or injury, no matter the degree of severity, is required to notify the Project Superintendent immediately.
- B. Injuries or illness not reported in a timely manner (24 hours) may not be eligible for consideration under Worker's Compensation.
- C. Injuries only requiring treatment at the jobsite are to be documented on the jobsite FIRST AID LOG and in the Superintendent's daily log book for future reference.
- D. When an incident occurs (24-7) requiring off-site medical attention:
 - a) The Director of Safety must be notified immediately or at least before transporting the employee to receive medical attention, use push to talk, or cell phone 24-7.
 - b) The injury is to be documented on the VIRTEXCO JOBSITE FIRST AID LOG, Superintendent's Daily Log book and Daily Report.
 - c) The top section of the VIRTEXCO MEDICAL INFORMATION – INITIAL TREATMENT OUTCOME FORM must be completed in detail (being sure to cover the mechanisms of injury thoroughly in the space provided for **DETAIL**). This form is to be sent with the ill or injured employee to the medical provider, and a copy returned from the medical provider with the bottom half completed.
 - d) VIRTEXCO's SUPERVISOR REPORT OF ON THE JOB INCIDENT OR ILLNESS a two sided form, completed in entirety. Leave no blanks; try to get the injured employee's description of the incident and their signature, **BEFORE** they leave the jobsite or location, to receive medical treatment. If that's not possible, get their statement and signature after treatment, even if you have to visit them at the hospital or home.
 - e) All Workers Compensation rules, regardless of state or jurisdiction, require VIRTEXCO to transport job related illness or injured

employees to and from the initial treatment. Walking injured should be transported by YOU or a VIRTEXCO approved driver in a VIRTEXCO vehicle OR in an extreme case you may use a taxi-cab. **(Employees should not be permitted to transport themselves for the initial medical treatment.)**

- f) Both the completed VIRTEXCO forms, MEDICAL INFORMATION – INITIAL TREATMENT OUTCOME and SUPERVISORS REPORT OF ON THE JOB INCIDENT OR ILLNESS are to be in the Norfolk Safety Department by lunch time of the following regular work day.

FIRST AID SUPPLIES AND BARRIER DEVICES:

- A. First Aid supplies are to be in a waterproof container with individually sealed packages.
- B. First Aid kits are to be checked by the Superintendent or designated individual at least weekly to ensure that the expended items are replaced.
- C. Employees who require assistance for their injuries are to be assisted by a certified First Aid trained individual.
- D. Barrier Devices are to be used when body fluids pose a potential risk of transmitting communicable diseases.

TREATMENT FACILITIES:

- A. Injuries or Illness requiring treatment beyond minor First Aid are to be taken to pre-arranged medical facilities for care. (See attached Approved Physician Tab)
- B. Before transporting an employee with job related illness or injury to a medical facility, **ALWAYS** call ahead to alert them and make sure they are open.
- C. Hospital Emergency Rooms are not authorized to treat Workers' Compensation claims unless:
 - 1. An ambulance takes the injured to the hospital.
 - 2. There is not an Occupational Medical Facility or General Practice open or available in the area.
 - 3. The injury is severe, such as a heart attack, sunstroke, concussion, or major bleeding. (Requires an ambulance)
- D. Phone numbers of the treatment facilities, as well as other emergency responders, are to be posted in a conspicuous place near the telephone. (Select appropriate sheet under the Approved Physicians Tab)

INCIDENT/ILLNESS INVESTIGATION:

- A. All job related incident or illnesses are to be investigated thoroughly to determine the cause. The results of the investigation are to be the topic of the next scheduled site safety meeting.
- B. All facts are to be obtained by checking conditions and operations where the accident occurred, and by answering the questions: WHO? WHAT? WHERE? WHEN? and HOW?
- C. Photographs of the existing conditions at the accident site are to be taken using a digital camera or the camera from a VIRTEXCO vehicle incident reporting package.
- D. Information gathered from the incident investigation is to be forwarded to the Director of Safety in Norfolk. If the information cannot be e-mailed then fax to 757-

466-1115 and verbally communicated (phone# 757-466-1114) original copies are to then follow.

- E. It is the Superintendent's or Supervisor's responsibility for prompt reporting of all work related incident/illnesses to the Director of Safety.

FURTHER MEDICAL TREATMENT:

- A. When an employee is required to see a specialist for their job related illnesses or injury, a panel of three physicians is to be offered to the employee by the Director of Safety or the VIRTEXCO Nurse Case Manager.
- B. Only physicians listed on the Panel List of Approved Physicians are authorized for use. Costs incurred from the use of "non-panel physicians" will not be covered under the Workers' Compensation Act.
- C. The Panel List of Approved Physicians, for the area in which you are working must be posted on the jobsite or location bulletin board (see the Incident Report).

RETURN TO WORK:

- A. Employees who have sustained a work related injury or illnesses have a signed release from the attending physician (should be on the VIRTEXCO form, Medical Information – Initial Treatment Outcome.) before they are eligible to return to work.
- B. Either a restricted or full duty release will be accepted, and must be dated and signed by the Approved Panel List Physician to be valid.
- C. The Director of Safety in Norfolk must approve any return work forms for job related injuries or illnesses, before the employee is authorized to return to work.

RESTRICTED DUTY PROGRAM:

- A. As a method of controlling Workers Compensation cost. VIRTEXCO's policy is to provide meaningful restricted duty, other than bed rest, to all employees who sustain a job related injury or illness.
- B. Employees should not be expected to exceed a forty hour work week or the work restrictions set forth by their attending physician.
- C. Employees participating in this program will receive full pay for all scheduled doctor or physical therapy appointments while on restricted duty.

Note: Full duty (released for heavy construction work) returns to work releases are required for non job related illnesses or injuries.

END PROCEDURE

APPENDIX B

PROGRESSIVE DISCIPLINARY PROGRAM

VIRTEXCO Corporation is dedicated to providing the safest workplace possible for its employees. We will provide the necessary time, training and equipment to aid each employee in performance of his or her work task. Each employee should take advantage of the opportunities provided for a safe work environment.

All employees have an obligation to follow the safe practices and regulations, which govern their work tasks. Employees shall consult with their supervisor for guidance if safety needs to be addressed. All information and/or safety equipment furnished shall be utilized for the completion of each task.

The following Progressive Enforcement Policy will be utilized for VIRTEXCO and Subcontractor's employees non-compliance of written safe practices and regulations set forth by VIRTEXCO Corporation and all government agencies (See Information Tab);

FIRST WARNING will result in a verbal discussion concerning non-compliance.

FIRST WRITTEN WARNING will result in formal training in the area of non-compliance.

SECOND WRITTEN WARNING will result in removal from the work area for eight (8) hours without pay. Removal time will begin immediately.

THIRD WRITTEN WARNING will result in either removal from the work area for forty (40) hours or termination of employment. Judgment will be based on past work performance.

This Progressive Enforcement Program shall be executed fairly among all VIRTEXCO and Subcontractor employees. Any act of favoritism should be brought to the Director of Safety's attention for investigation.

END PROCEDURE

APPENDIX C

**VIRTEXCO CORPORATION
PERSONAL PROTECTION EQUIPMENT
TRAINING OUTLINE AND RECEIPT ACKNOWLEDGMENT**

HEAD PROTECTION

1. Hard hats are required on all jobsites -NO EXCEPTIONS.
2. The integrity of the hard hat shall be maintained.
3. Hard hats shall be worn with the brim in the front.
4. Defective hard hats shall be replaced.

EYE PROTECTION

1. Eye protection is required on all jobsites – NO EXCEPTIONS.
2. VIRTEXCO will provide \$100 per year, per employee for prescription safety Glasses with side shields.
3. Clear replacement glasses are available upon request.
4. Shaded glasses are available.
5. Shaded glasses are prohibited in buildings and after dusk.
6. Special oversized safety glasses are available for prescription eyeglass wearers.
7. Slide on Side Shields for prescription glasses are available upon request.
8. Defective eye protection shall be replaced.

HEARING PROTECTION

1. Hearing protection is provided for your comfort.
2. Hearing protection will be worn when directed.
3. Defective hearing protection shall be replaced.

FALL PROTECTION

1. A VIRTEXCO provided harness and two 6 feet rope lanyards are required when an employee is exposed to a fall greater than 6 feet, and handrails or nets are not used.
2. Fall protection training shall be conducted (Appendix M).
3. Fall protection equipment subjected to a fall shall be destroyed and replaced with new equipment.

RESPIRATORY PROTECTION

1. Respirators will be provided when required.
2. Every attempt shall be made to use throw away (good for one shift) respirators.
3. Respirator training shall be provided using Appendix G and any specific training necessary.

Other Personal Protective Equipment will be issued when the need arises. Training, maintenance, and care instructions will be provided at the time it is issued.

END PROCEDURE

PERSONAL PROTECTIVE EQUIPMENT ISSUED

I acknowledge that I have been trained in the application and use of the above-mentioned Personal Protective Equipment. I understand that it is my responsibility to arrive at work each day with the basic Personal Protective Equipment that I have been issued at the start of my employment.

I also understand that the Personal Protective Equipment is the property of VIRTEXCO Corporation. Upon my termination, I am required to return the equipment issued to me. I authorize VIRTEXCO Corporation to deduct the cost of equipment from my remaining pay, if I fail to do so.

Items Issued (1) Each

Check-Off

Head Protection
Type 89.1 w/Ratch Suspension
Replacement Cost \$9.50

Eye Protection
UVEX 3000
Replacement Cost \$5.00

Hearing Protection
North Com-Fit
Cost \$1.50

PRINT NAME

EMPLOYEE'S SIGNATURE

DATE

PERSON ISSUING EQUIPMENT

APPENDIX E

VIRTEXCO CORPORATION EXCAVATION POLICY

PURPOSE:

The purpose of this policy is to set forth standards regarding open excavations.

SCOPE:

This policy applies to all trenching and excavation work being performed on VIRTEXCO projects.

POLICY:

The Director of Safety shall write a site specific Excavation Plan, using the following criteria, for any excavation in excess of four feet deep in which employees have to enter the excavation.

Valid permits, from owners, and or one call providers, issued to VIRTEXCO or the Subcontractor must be in the Supervisors hand who is doing the actual excavating prior to starting any digging.

Pictures of, all markings on the ground made by the permit issuing provider, are to be taken prior to any digging. Landmarks are to be included in the pictures for future identification, because the markings will be destroyed by the actual digging.

DEFINITIONS:

BENCHING: A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

CAVE-IN: The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

COMPETENT PERSON: One who is capable of identifying existing and predicable hazards in the surrounding, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

EXCAVATION: Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

FISSURE: Any soil that contains narrow opening or cracks that will reduce the strength of the soil.

HAZARDOUS ATMOSPHERE: An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient toxic, or otherwise harmful, may cause death, illness or injury.

PROTECTIVE SYSTEM: Means a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

SHIELD: A structure that is able to withstand the forces imposed on it by a cave-in and thereby protecting employees within the structure. They can be designed to be portable and moved as long as work progresses. Shields used in trenches are usually referred to as “trench boxes” or “trench shields”.

SHORING: A structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and is designed to prevent cave-ins.

SLOPING: A method of protecting employees from cave-ins by excavating that are inclined to prevent cave-ins. The angle of slope depends on the type of soil, environmental conditions, and applications of surcharge loads.

TRENCH: A narrow excavation (in relation to its length) in which its depth is greater than the width, but the width of the trench is not greater than 15 feet.

GENERAL INSTRUCTIONS:

1. Before excavation work is started, a competent person will be designated to oversee the excavation work.
2. A pre-excavation safety meeting shall taken place with all individuals involved in the excavation. The hazards of excavations, methods of employee protection, and emergency response procedures shall be discussed.

SITE EVALUATION:

1. The competent person shall determine the estimated location of utility installations - sewer, telephone, fuel, electric, water lines, or any other underground installation.
2. Miss Utility shall be called 48 hours (2 working days) before the excavation is open (see attached guidelines).
3. All surface and underground encumbrances that are located, which could create a hazard to employees shall be removed or supported, as necessary to safeguard employees.

ACCESS AND EGRESS:

1. Structural ramps that are used solely by employees during excavation operations shall be designed by a competent person. Structural ramps used by equipment during excavation operations shall be designed by a person qualified in structural design.
2. A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth. No more than 25 feet of lateral travel in between egress routes.

AIR MONITORING:

1. Where an oxygen deficiency or a hazardous atmosphere exists, or could reasonably be expected to exist, such as in excavations in landfill areas or areas near hazardous storage facilities, the atmosphere shall be tested before employees enter excavations greater than 4 feet in depth.
2. If an oxygen deficiency or a hazardous atmosphere is determined to exist, the excavation shall be considered a confined space and the necessary precaution needed for a confined space entry shall be initiated.

WATER ACCUMULATION:

1. Employees shall not work in an excavation in which water is accumulating, unless adequate precautions have been taken to protect employees against hazards posed by water accumulation.
2. Excavations that are subject to runoff of heavy rains will require an inspection by a competent person.

EMPLOYEE PROTECTION FROM LOOSE ROCK OR SOIL:

1. Employees shall be protected from loose rock or soil that could pose a hazard by falling or rolling from an excavation face.
2. Employees shall be protected from excavated or other materials or equipment by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or using retaining devices.

INSPECTIONS:

1. A daily inspection of the excavation, the adjacent areas, and protective systems shall be made by a competent person before the start of work, after every rainstorm, and as needed during each hazard increasing occurrence.
2. The excavation needs only to be inspected when employee exposure can be reasonably anticipated.
3. Where a competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

PROTECTION:

1. Certain protective measure are optional for employees working in excavations made entirely in stable rock; or in excavations that are less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in.
2. Employees exposed to conditions in excavations under 20 feet in depth other than the ones stated above shall be protected by one or more of the following methods: Sloping, Benching, Shoring, or Trench Shield.
3. Protective Systems in excavations 20 feet or more in depth shall be designed by a Registered Professional Engineer.
4. Protective Systems shall have the capacity to resist without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

SOIL CLASSIFICATION:

Stable Rock - Is solid mineral matter.

Class A - Is cohesive soils, such as clay, silty clay and hardpan. Class A soil requires a 3/4: 1 (53 degree) slope. Short-term excavation (open less than 24 hours) 12 feet or less can have 1/2: 1 (63 degree) slope.

Class B - Granular soils, silt, sandy loam, unstable rock, any unstable or fissured Type A soil. Class B soil requires a 1: 1 (45 degree) slope.

Class C - Gravel, loamy soil, submerged soil, sand and any soil that is part of a layered, steeply sloped system. Class C soil requires a 1 1/2: 1 (34 degree) slope.

NOTE: All soil in the Tidewater Area has been determined to be Class C type soil.

INSTALLATION AND REMOVAL OF SUPPORT SYSTEMS:

1. Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses or from being struck by members of the support system.
2. Removal of the support system shall begin at and progress from the bottom.
3. Backfilling progresses with removal of support systems from excavations.
4. No employees are allowed to work on the face of either a sloped or benched excavation above other employees except when employees below are adequately protected from the hazard of falling, rolling or sliding material or equipment.
5. Trench shields shall be installed in a manner that will restrict lateral movement.
6. Employees shall not be allowed in the shield when it is being installed or relocated.

END PROCEDURE

**VIRTEXCO CORPORATION
CONFINED SPACE ENTRY PROCEDURE**

PURPOSE:

To provide a safety procedure for workers that are performing tasks in permit required confined spaces.

SCOPE:

This program will be implemented at all VIRTEXCO projects at which employees and subcontractors perform tasks in permit required confined spaces. This policy is in compliance with Virginia Occupational Safety and Health Standard 29 CFR 1910.146.

PROCEDURE:

The Director of Safety will write a site specific confined space Entry Procedure for each and every entry to be made using the following information.

DEFINITIONS:

ATTENDANT: An individual with no other duties assigned that remains outside the entrance of the confined space to provide aid for the employees inside.

BLIND, BLINDING OR BLANKING: The absolute closure of a pipe, line or duct, to prevent passage of any material (e.g. by fastening a solid plate or “cap” across the pipe).

CALIBRATION OR RECALIBRATION: A laboratory or bench top re-setting of alarm points, spans and zeros, if applicable, according to manufacturer’s specifications. This shall only be accomplished by a certified trained individual.

CONFINED SPACE: Any space not intended for continuous employee occupancy, having a limited means of egress, and which is also subject to either the accumulation of an actual or potentially hazardous atmosphere, or has a potential for engulfment as defined in these definitions.

ENGULFMENT: The surrounding and effective capture of a person by finely divided particulate matter or a liquid. There is a potential for engulfment when such particulate matter or liquid exists in a sufficient quantity or at a sufficient pressure to surround a person before normal exit can be affected.

ENTRANT: Any employee who enters a confined space.

ENTRY: Any action resulting in any part of the employee’s face breaking the planes of any opening of the confined space, and includes any ensuing work activities inside the confined space.

ENTRY PERMIT: The employer's written authorization for employee entry into a confined space under defined conditions for a stated purpose during a specified time.

FIELD CHECK: Method of checking an instrument for a proper response in the field. It is a check of the instrument's functionality and is a pass-fail check. When an adequate response is not obtained then the equipment should be removed from service.

GROUND FAULT CIRCUIT INTERRUPTER: A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds 5 milliamps.

HAZARDOUS ATMOSPHERE: An atmosphere presenting a potential for death, disablement, injury, or acute illness for one or more of the following causes:

1. A flammable gas, or mist in excess of 10% of its lower explosive limit (LEL).
2. An oxygen deficient atmosphere containing less than 19.5% oxygen by volume or oxygen enriched atmosphere containing more than 23.5% oxygen by volume.
3. An atmospheric concentration of any substance listed in Subpart Z or Part 1910 Standards above the listed numerical value of the permissible exposure limit (PEL).
4. A condition immediately dangerous to life or health as defined in these definitions.

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH): Any condition that poses an immediate threat to life, or which is likely to result in acute or immediate severe health effects.

IMMEDIATE SEVERE HEALTH EFFECTS: An acute clinical sign of serious, exposure-related reaction manifested within 72 hours of exposure.

LOCKOUT OR TAGOUT: Placing locks or tags on the energy isolation devices. Tags shall indicate that the energy-isolated device shall not be operated until the removal of the tag.

QUALIFIED PERSON: A person who is trained to recognize the hazard(s) of the confined space and how to evaluate those anticipated hazards and shall be capable of specifying necessary control measures to assure worker safety. The qualified person can also be the entrant.

RESCUE TEAM: Those persons whom the employer has designated prior to any confined space entry to perform rescues from confined spaces. A rescue team may consist of outside emergency personnel, provided that on-site training is given.

RETRIEVAL LINE: A line or rope secured at one end of a worker's safety belt, chest or body harness, or wristlets with the other end secured to an anchor point or lifting device outside the entry portal.

ZERO MECHANICAL STATE: The mechanical potential energy of all portions of the machine or equipment is set so that the opening of the pipe(s), tube(s), hose(s), or actuation of any valve, lever or button, will not produce a movement which could cause

injury.

TRAINING:

Before entering a confined space, all employees shall receive training at the jobsite conducted by a designated ("qualified") VIRTEXCO employee. Training will cover at least the following areas:

1. Hazard recognition.
2. Use of respiratory protection equipment, if required.
3. Use of atmospheric testing equipment for those required.
4. Lockout/Tagout procedures.
5. Use of special equipment.
6. Emergency and rescue procedures.

The designated VIRTEXCO employee will record the names of personnel attending the training on a safety meeting form.

PRIOR TO ENTRY:

The qualified person shall assure that the following procedures have first been completed:

1. All pumps or lines which may convey flammable, injurious, or incapacitating substances into a space shall be disconnected, blinded, or isolated by other means. Measures shall be taken to prevent inadvertent reconnection of the lines or removal of the blind is effectively prevented. The closing of valves alone with locks or tags is prohibited.
2. All mechanical devices and equipment that are capable of causing injury shall be placed in the OFF position with a key-type padlock except in cases where locking is impossible. When the equipment cannot be physically locked out, a tag shall indicate the equipment is placed out of service. The key used for lockout purposes shall remain with the lead person working inside the confined space.
3. When necessary all confined spaces shall be emptied, flushed, or otherwise purged of flammable, injurious, or incapacitating substances to the extent feasible. Initial cleaning shall be done from outside the confined space to the extent feasible.

ATMOSPHERIC TESTING

The qualified person shall test the atmosphere of the confined space prior to entry:

1. The instrument furnished shall be capable of detecting all known toxic materials expected to be present. A field check shall be performed according to the manufacturer's instructions. Initial atmospheric reading shall be recorded on the entry permit. All readings must be within permissible safe limits. Readings for oxygen must be between 19.5% and 23.5% by volume. Flammable gas vapor or mist must not exceed 10% of its lower explosive limit (LEL).

2. Where the existence of a hazardous atmosphere is present, mechanical ventilation shall take place to reduce the hazard to safe levels. If the hazard is expected to be constant, continuous ventilation shall be in place or appropriate personal protective equipment shall be worn by the entrants.
3. When an attendant has been assigned to monitor the confined space, the attendant shall perform atmospheric testing during occupancy at intervals dependent on the possibility of changing conditions, but no less than hourly. All results of testing shall be recorded as soon as possible.
4. When a non-attendant entry is permitted, at least one air monitor shall be worn by an entrant while in the confined space. Larger spaces may require more than one air monitor to be used.
5. Each atmospheric testing instrument shall be calibrated according to the manufacturer's instructions or, if no instructions exist, at least yearly.

ATTENDANTS AND RESCUE TEAMS

1. Non-attendant entry is only permitted into confined space which has no potential for engulfment or IDHL atmosphere.
2. An attendant shall be stationed immediately outside every confined space which has been found to have an IDLH atmosphere, a hazardous atmosphere or a potential for engulfment. The attendant shall have appropriate training, be within sight or call of the entrant, and have means available to summon assistance.
3. Rescue teams shall be available where the confined space has been found to have an IDLH atmosphere, a hazardous atmosphere or a potential for engulfment.

ENTRY PERMIT:

Once a space is determined to be permit required, an entry permit (see permit tab) shall be utilized. All applicable information shall be noted on the entry permit (see Permit Tab).

SPECIAL EQUIPMENT AND TOOLS

1. No sources of ignition shall be introduced into a confined space unless appropriate ventilation methods have been taken.
2. All electrical equipment shall be guarded by a ground fault circuit interrupter (GFCI). Temporary lighting shall be powered by 12 volts or protected by GFCI.
3. Compressed gas cylinders shall not be taken into a confined space. Cylinders shall be turned off at the valve when not in use. Equipment shall be removed from the confined space for disconnection or repairs.

EMERGENCY RESCUE EQUIPMENT

Where the existence of an IDLH atmosphere, a hazardous atmosphere or potential for engulfment is present, the following requirements shall apply:

1. An appropriate retrieval device with retrieval line shall be used by the entrant(s), except when the retrieval lines could cause a hazard by entanglement. The free end of the line shall be secured to a stationary object at all times.
2. When entry is made through a top opening, a hoisting device shall be utilized.
3. The attendant shall have either a positive-pressure, self-contained breathing apparatus or a combination positive-pressure airline respirator with auxiliary self-contained air supply outside the confined space.
4. When a person(s) enters either an IDLH atmosphere or a hazardous atmosphere without a retrieval line, each entrant shall wear a MSHA/NIOSH approved positive pressure self-contained breathing apparatus.

END PROCEDURE

VIRTEXCO CORPORATION

CONFINED SPACE ENTRY PERMIT

Both sides of this permit must be completed, all requirements met, any discrepancies corrected, and certified by the designated VIRTEXCO employee before entry into specified area:

	<u>ENTRY CHECKLIST</u>	<u>YES</u>	<u>NO</u>	<u>NOT APPLICABLE</u>
1.	VIRTEXCO procedure reviewed by all entrants?	_____	_____	_____
2.	On-job training for hazards conducted prior to start of project?	_____	_____	_____
3.	Person on site at all times to enforce these procedures?	_____	_____	_____
4.	Understand and comply with any procedures required by the customer/owner?	_____	_____	_____
5.	Welding permit required? Any toxic substance, flammable or explosive material on shelf?	_____	_____	_____
6.	Lock and tag procedure followed?	_____	_____	_____
7.	Power sources "OFF" and locked out?	_____	_____	_____
8.	All electrical hazards isolated, removed, tagged?	_____	_____	_____
9.	All lines, ducts, etc., conveying any substance to confined space blanked off, section removed, locked by two valves?	_____	_____	_____
10.	Confined space isolated, contents removed and space flushed?	_____	_____	_____
11.	Confined space atmosphere tested and monitored?	_____	_____	_____
12.	Continuous air monitoring equipment operational?	_____	_____	_____
13.	If emergency occurs, do you have a way to sound alarm?	_____	_____	_____

*Name of person(s) conducting training _____

CERTIFIED BY _____

(Designated VIRTEXCO Employee)

(SF-19) July 1995

CONFINED SPACE ENTRY PERMIT

POST AT POINT OF ENTRY

LOCATION _____ JOB NO. _____

DATE _____ TIME STARTED _____ TIME COMPLETED _____
(Note: Permit valid for maximum of 12 hours)

WORK TO BE COMPLETED _____

ENTRANTS NAMES (**ONLY** those with on-job training permitted)

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

ENVIRONMENTAL MONITORING

A. Sampling Equipment used (Part A to be filled out by Competent Person only)

TYPE	SERIAL#	DATE CALIBRATED	BY WHOM
_____	_____	_____	_____
_____	_____	_____	_____

IN CASE OF EMERGENCY CALL _____

CERTIFIED BY _____
(Designated VIRTEXCO Employee)

APPENDIX G

VIRTEXCO CORPORATION RESPIRATORY PROTECTION POLICY

PURPOSE:

The purpose of this policy is to establish rules and procedures for the protection of workers against respiratory hazards encountered in the work place.

SCOPE:

This policy applies to all VIRTEXCO employees and subcontractors on VIRTEXCO projects.

DEFINITIONS:

RESPIRATOR: A device worn over the mouth and nose for protecting the respiratory tract which will allow safe breathing of air oxygen in areas contaminated by vapors, fumes, gases, or dusts. Respirators shall not be worn in oxygen deficient atmosphere less than 19.5% oxygen.

PERMISSIBLE EXPOSURE LIMITS (PEL): Represents the legal maximum level of respiratory contaminants in the workplace.

FIT TEST: Refers to a pass or fail procedure that certifies that the respirator selected fits the wearer properly.

SELECTION AND USE:

It will be the responsibility of the Project Superintendent, in conjunction with the Director of Safety, to determine when respiratory protection is required. Any job, which involves exposure to regulated substances, shall be considered for respiratory protection. If at any time a job is secured where an unknown substance will be encountered, the Project Superintendent should contact the Company Director of Safety for assistance in determining proper respiratory protection.

FIT TESTING:

After the proper respirator is selected, fit testing must be performed in accordance with OSHA 1910.134, Appendix C - Qualitative Fit Testing. Fit testing will be accomplished with the aid of 3M's Fit Test Kit, FT-10. Records must be completed and maintained for three (3) years.

TRAINING:

Every employee who is required to wear a respirator will be thoroughly trained in the selection, use, limitations and proper maintenance of respirators. The Project Superintendent should request respirator training, if needed, well in advance of the starting date of any project that will require the use of respiratory protection. Training will be conducted in accordance with 29 CFR 1910.134, and will include the following:

1. Explanation of the nature of the respiratory hazard involved and consequences if the respirator is not used properly.
2. Explanation of why the particular type of respirator was selected.
3. Opportunity to handle the respirator.
4. Proper fitting, adjusting and determining the proper face-piece-to-face-seal.
5. Proper inspection and storage of the respirator.
6. Legal requirements concerning the use of respirators.

INSPECTIONS:

All respirators must be inspected before and after each use. Items to inspect include the integrity of the face-piece, head straps and exhalation valves.

Examine the face-piece for:

- a. Dirt or debris.
- b. Tears, holes or physical distortion of shape.

Examine the head straps for:

- a. Foreign material.
- b. Cracks, tears or distortions in the valve material.
- c. Improper insertion of the valve body in the face-piece.

If any defects are found during field inspection, the respirator must not be used. Under no conditions will the use of a defective respirator be permitted.

STORAGE:

All respirators will be stored in a sanitary container (i.e. a sealable freezer bag) labeled with the wearer's name.

PHYSICAL FITNESS REQUIREMENTS:

No employee will be assigned to tasks requiring the use of a respirator unless he/she is physically able to perform the task while using a respirator. All employees who are exposed to airborne concentrations above the Permissible Exposure Limit (PEL) for regulated substances will be given a physical examination in accordance with 1910.134. The physician will report any physical impairment, which may make it unsafe for an individual to wear respiratory protection.

SURVEILLANCE AND MONITORING:

The work area will be continuously monitored to ensure compliance with established respiratory policy. Where feasible, engineering controls should be instituted in order to eliminate any potential hazardous atmosphere. If the job Superintendent is unsure if the PEL for a regulated substance is being surpassed, the Safety Director shall be notified. Air sampling and monitoring will be conducted in accordance with NIOSH standards.

The Safety Director will provide all information necessary to have employees properly trained. He/she will maintain close liaison with the Superintendent to ensure that the program is being followed and assist in resolving any problems, which may occur.

This respiratory Program will be reviewed on a periodical basis to ensure the program is in compliance with OSHA standards and the Company's needs.

END PROCEDURE

VIRTEXCO CORPORATION

RESPIRATOR FIT-TESTING RECORD

This form must be completed each time an employee is fit tested, in accordance with OSHA Appendix C, and must be maintained for three (3) years.

1. Name of Employee _____

2. Date of Fit Testing _____

3. Testing Agent (Isoamyl Acetate, Irritant Fume, etc.)

4. Respirator Used (Indicate manufacturer, model, size, and approval number)

Employee's Initials _____

Name of Test Conductor _____

APPENDIX H

VIRTEXCO CORPORATION HAZARD COMMUNICATION PROGRAM

PURPOSE:

The purpose of this section is to familiarize and protect VIRTEXCO employees and subcontractors using materials, products and chemicals being used on a construction site.

SCOPE:

This policy applies to all VIRTEXCO employees and subcontractors working on VIRTEXCO projects.

INTRODUCTION:

In order to comply with the Occupational Safety and Health Standard, "Hazard Communication" 29 CFR 1926.59 VIRTEXCO Corporation has established this written Hazard Communication Program.

This Standard, effective May 23, 1995, requires employers to establish programs to transmit information to their employees on the hazards of chemicals to which they may be exposed to work. This information is to be provided through Material Safety Data Sheets (MSDS's), labels on containers, and employee training programs. The term "hazardous chemical" has been defined very broadly under the law and encompasses virtually all materials, products and chemicals used during construction operations.

All projects and locations throughout the company are included within this program. A copy of the written program will be available at each project for review by any interested employee. A poster with the name of the designated individual who will monitor the program shall be displayed in a conspicuous area for all to see. The master program will be maintained by the Director of Safety in the Norfolk office.

All subcontractors shall comply with the Hazard Communication Standard. The subcontractor shall submit their written program; MSDS's and signed training documentation for each employee that will be performing work on the project before or at the initial preparatory meeting.

LABELING REQUIREMENTS:

It is the responsibility of the material, product or chemical manufacturer, or distributor to make sure that each container of hazardous chemical leaving their facilities is labeled, tagged, or marked with the following information:

- a. Identification of the material (s), product (s) and chemical(s).
- b. Appropriate hazard warning and target organ(s).

At each of our projects and locations it shall be the responsibility of the Superintendent or

designated individual to verify that all containers have the proper label attached. It shall be the responsibility of the individual purchasing any material, product or chemical to ensure proper labeling of any material, product or chemical purchased for use. Any material, product or chemicals not properly labeled shall not be received nor used.

CHEMICAL INVENTORY LIST AND MATERIAL SAFETY DATA SHEETS:

VIRTEXCO Corporation shall maintain a copy of its own and each subcontractor's chemical inventory list corresponding MSDS's for each hazardous chemical, which is brought on the project. This information shall be kept on file and in one location for immediate reference.

EMPLOYEE INFORMATION AND TRAINING:

VIRTEXCO Corporation shall train each new employee prior to starting work. The training will be conducted by the Superintendent or Foreman of the project. The following items are to be addressed:

1. An overview of the Hazard Communication Program.
2. Hazardous chemicals present in the workplace.
3. Location and availability of our written program, chemical inventory and MSDS's.
4. Physical and health hazards of the chemicals to which they will be exposed.
5. Methods and observation techniques used to determine the presence or release of hazardous chemicals (order, visual, appearance, etc.).
6. How to read labels and review MSDS's to obtain appropriate hazard information.
7. Procedures to follow in case of emergencies.

The Superintendent or designated individual shall ensure that all subcontractors' personnel have been trained in Hazard Communication. Signed training documentation stating that training has been provided shall be maintained in the subcontractor's Hazard Communication file.

RETRAINING:

Prior to a new materials, products or chemicals being introduced into any work area, each employee who may be exposed will receive proper training on that particular material, product or chemical. The employer who will introduce the material, product or chemical into the work area will be responsible for providing the necessary training.

For refresher and specific material, product and chemical training, use one of the 20 Haz. Com. Safety Training Topics contained in the separate three ringed binder titled VIRTEXCO Haz Com Chemical & Product, Inventory and Material Safety Data Sheets.

TRAINING OUTLINE:

The person conducting Hazard Communication training for newly hired VIRTEXCO employees will use this Training Outline provided in this Appendix and record the signature of each employee attending on the form also contained in the Appendix. These forms will be kept forwarded and in a training file maintained by the Director of Safety in the Norfolk office.

HAZARDOUS NON-ROUTINE TASKS:

The tasks performed by employees of VIRTEXCO Corporation, are generally routine and part of their jobs. In the event an employee is assigned a non routine task, which may be hazardous, special precautions must be taken by the Supervisor assigning the task and by the employee performing the task.

The Supervisor must make sure the employee is provided all the information necessary to perform the task safely. This includes data on hazardous chemicals involved, proper work practices, necessary personal protective equipment, emergency procedures, and any other measures available to lessen the hazard.

The employee must learn and employ all necessary safety procedures, including carefully reading warning labels on any hazardous chemical to which he or she may be exposed.

CHEMICAL IN UNLABELED PIPES:

When employees are required to perform work activities in the area of unlabeled pipes, they shall, prior to starting work, contact the site Supervisor for information regarding the contents of the pipes.

HAZARD COMMUNICATIONS STANDARD TRAINING OUTLINE

1. Hazard Communication Standard (HAZCOM) was developed to provide workers with information pertaining to the materials, products and chemicals in their workplace.
2. Another name for the Hazard Communication Standard is “THE RIGHT TO KNOW” standard. Again, it informs workers about the materials, products and chemicals in their workplace.
3. There are six requirements that must be in place to comply with the requirements of the HAZCOM standards.
 - a. A Written Program
 - b. Chemical Inventory List
 - c. Material Safety Data Sheets (MSDS)
 - d. Labeling of Containers
 - e. How to Respond to Chemicals
 - f. Employee Training
4. The Materials, Product and Chemical Inventory is the separate 3 ring Haz Com Manual.
 - a. A generic list developed by inventory 2 architectural and mechanical VIRTEXCO jobsites.
 - b. MSDS for Material Products and Chemicals not in the generic inventory, yet used on the specific jobsite are to be collected in the pockets in the 3 ring Haz Com Manual. When the job is complete those MSDS collected shall be made a part of the job records, and the Manual is moved on the next jobsite or location.
5. Each material, product or chemical in the Inventory List will have corresponding Material Safety Data Sheets (MSDS) containing specific information about the material, product or chemical such as:
 - a. Manufacturer’s Name
 - b. First Aid Procedures
 - c. Personal Protection Recommendations
 - d. Emergency Response Actions
 - e. Special Instructions
6. Labels on containers shall be readable at all times. Labels should be the first source of information about the material, product or chemical. Always read the container label before using the material, product or chemical.
7. Your supervisor will have the MSDS Book for your jobsite. They will make it available to you upon your request.

END PROCEDURE

**VIRTEXCO CORPORATION
TRAINING RECORD
HAZARD COMMUNICATIONS STANDARD**

I acknowledge that I have received training in the basic components of HAZCOM, which is also known as "The Right to Know" standard.

PRINT NAME

EMPLOYEE SIGNATURE

DATE

TRAINING PROVIDED BY

APPENDIX I

VIRTEXCO CORPORATION LOCKOUT/TAGOUT PROCEDURE

PURPOSE:

The purpose of this policy is to establish rules and procedures for the protection of workers against the unexpected energizing, start-up, or release of stored energy from any machine or equipment. This will be accomplished by affixing appropriate lockout and tagout devices to any system capable of being locked out.

SCOPE:

This policy applies to all VIRTEXCO employees and subcontractors on VIRTEXCO projects or locations

DEFINITIONS:

AUTHORIZED PERSON: A person who locks or implements a tagout system on machines or equipment to perform the servicing or maintenance on that machine or equipment.

ENERGIZED: Connected to an energy source or containing residual or stored energy.

ENERGY ISOLATING DEVICE: A mechanical device that physically prevents the transmission or release of energy including, but not limited to the following:

1. A manually operated electrical circuit breaker.
2. A disconnect switch.
3. A slip blind.
4. Any similar device used to block or isolate energy.

ENERGY SOURCE: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

LOCKOUT: The placement of a lockout device on an energy-isolating device in accordance with an established procedure.

LOCKOUT DEVICES: A device that utilizes a positive means such as a key lock to hold an energy-isolating device in the safe position and prevent the energizing of a machine or equipment.

SERVICING AND/OR MAINTENANCE: Workplace activities such as constructing, installing, setting up, adjusting, modifying and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes where the employee may be exposed to the release of hazardous energy.

TAGOUT: The placement of a tagout device on an energy isolated device, in accordance

with an established procedure, to indicate that the energy isolating and the equipment being controlled may not be operated until the tagout device is removed.

TAGOUT DEVICE: A prominent warning device, such as a tag and means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure. This is to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

PLACEMENT AND REMOVAL OF LOCKS AND TAGS:

1. Before any machinery or equipment is locked or tagged out, a preparatory meeting with the Owner or the Owner's representative shall take place to identify all sources of potential energy.
2. Once all potential sources of energy have been identified, the site supervisor shall place the appropriate lockout/tagout method in effect.
3. Only the individual that places the lock or tag on the machinery or equipment is authorized to remove it.

TRAINING:

VIRTEXCO will train all authorized employees in the purpose and function of the lockout/tagout procedures so that the knowledge and skills required for the safe application, usage and removal of energy controls are understood.

Training will include, but will not be limited to:

1. Recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace and the methods and means necessary for energy isolation and control.
2. Purpose and review of the lockout/tagout procedures.
3. Instruction regarding the procedure and disciplinary action relating to attempts to restart or re-energize machines or equipment, which are locked and tagged out by other workers.
4. Limitations and uses of tags in the lockout/tagout.
5. Retraining will occur when there is a change in job assignments, processes and procedures.

LOCKOUT/TAGOUT PROCEDURES:

1. The machine or equipment to be locked/tagged out is designed and a survey is conducted to locate and identify all isolating devices to be certain which switches, valves or other energy isolating devices apply.
2. Notify all affected employees that a lock/tagout system is going to be utilized and the reason for it.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
4. Turn off the main disconnect switch, valve and other energy isolating devices. Stored energy such as that stored in springs, elevated machine members, rotating flywheels, hydraulic systems and air, gas, steam or water

- pressure must be dissipated or restrained by methods such as repositioning, blocking, bleeding down of lines, etc.
5. Place the appropriate lock or tag on each isolating device connecting to the machine or equipment.
 6. After ensuring that no workers are exposed and, as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. Return the operating controls to the "OFF" position before beginning the service and/or maintenance.
 7. After all tools have been removed from the machine or equipment; guards have been reinstalled and workers are clear, remove the lockout/tagout device(s).
 8. Before starting the machine or equipment, check the surrounding area to ensure that no one is exposed. Turn the disconnect switch, etc., to the "ON" position to restore energy.

PROCEDURES INVOLVING MORE THAN ONE PERSON OR SUBCONTRACTOR:

In the event that more than one Company is involved in the lockout/tagout procedure, each will be required to place their own lock or tag on the energy isolating devices. When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If multiple lockouts are not feasible, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet, which allows the use of multiple locks to secure it.

PERIODIC INSPECTION:

This procedure will be reviewed at least annually to ensure that the lockout/tagout policy is in compliance with all federal and state standards.

END PROCEDURE

APPENDIX J

VIRTEXCO CORPORATION TOOL AND EQUIPMENT REPAIR POLICY

PURPOSE:

The purpose of this policy is to ensure that defective tools and equipment are repaired in an expedient manner.

SCOPE:

The guidelines stated in this policy shall be used by all individuals responsible for providing tools and equipment to VIRTEXCO's personnel.

- A. All tools and equipment shall be inspected for defects before use.
- B. Tools and equipment that are found to be defective shall be taken out of service and repaired.
- C. All repairs made at the jobsite shall be made by a competent person. A competent person is an individual that is knowledgeable in the repair of tools and equipment.
- D. Tools and equipment that do not function properly or cannot be repaired at the jobsite shall be red tagged and turned in for repair.
- E. A red tag shall be attached to the tool or piece of equipment with the following information printed on the tag:
 - The suspected defect;
 - the date and;
 - The job it was on.
- F. A supply of red tags shall be maintained at each jobsite.
- G. Requests for additional red tags should be made to the responsible Project Manager or the VIRTEXCO Safety Office in Norfolk.

END PROCEDURE

APPENDIX K

DRUG-FREE WORK PLACE POLICY

In 1988, Congress passed the “Drug-Free Work Place Act”, which became effective March 18, 1989. This Act addresses any drug abuse in the work places of Federal Contractors and grant recipients.

In response to the federal requirements for drug-free work places, and in keeping with VIRTEXCO Corporation’s concern for the health and safety of its work force, VIRTEXCO Corporation instituted the following Drug-Free Work Place Policy.

This policy affirms this VIRTEXCO’s intent to maintain a drug-free work place. The first section of this policy prohibits the manufacture, distribution, sale, possession or use of a controlled substance in the work place.

In addition, this policy creates a Drug Awareness Program that will provide information to all employees on the dangers of drug use and available private and community treatment facilities. Another section will describe VIRTEXCO Corporation’s procedure for testing employees for drugs and alcohol. The last section contains an employee acknowledgment form that **must** be signed and dated by each employee who receives a copy of this policy.

The Drug-Free Work Place Act specifically requires VIRTEXCO Corporation to notify each employee that, as a condition of employment, each employee must:

- Comply with the Company’s Drug-Free Work Place Policy.
- Notify the employee’s immediate Supervisor, Superintendent, the VIRTEXCO Human Resource Dept, or the Director of Safety of any conviction for a drug related offense committed in the work place within (5) five days of the conviction.

VIRTEXCO Corporation’s Drug-Free Work Place Policy prohibits employees from engaging in the possession, use, sale or being under the influence of illegal or unauthorized drugs or alcohol on company time, company or customer property (including parking lots), or at anytime or place during the workday, or while in company vehicles.

If an employee is undergoing prescribed medical treatment with any drug, which may alter their physical and mental ability, they must report this treatment to the Director of Safety or senior jobsite or location supervisor. A decision will be made to determine whether a temporary change in the employee’s assignment during the period of treatment is warranted.

To assist employees and their families to understand and to avoid the perils of drug abuse, VIRTEXCO Corporation has developed a comprehensive Drug Awareness Program. The Company will use the program in an educational effort to prevent and eliminate drug abuse that may affect the work place. The Drug Awareness Program will inform employees about: (1) the dangers of drug abuse in the work place; (2) the availability of treatment and counseling for employees who voluntarily seek such assistance; (3) VIRTEXCO’s Drug-Free Work Place Policy; and (4) sanctions for violations of VIRTEXCO Corporation’s Drug-Free Work Place Policy.

DANGERS OF DRUG ABUSE IN THE WORKPLACE:

Employees of VIRTEXCO Corporation are our most valuable resource and for that reason their health and safety is our number one concern. Any drug use, which imperils the health and well being of our employees or threatens our business, will not be tolerated. The use of illegal drugs and abuse of other controlled substances, on or off the job, is inconsistent with the law abiding behavior expected of all citizens. Employees who use illegal drugs or abuse other controlled substances on or off the job tend to be less productive, less reliable, and prone to greater absenteeism. This, in turn, can result in increased costs, delays, and risks to the company's business. Drug use in the work place puts the health and safety of the abuser and all other workers around him or her at increased risk. Employees have the right to work in a drug-free environment. In addition, drug abuse inflicts a terrible toll on the nation's productive resources and the health and well being of American workers.

AVAILABILITY OF TREATMENT AND COUNSELING SERVICES:

Early recognition and treatment of drug abuse is important for successful rehabilitation. Employees who believe they have a drug or alcohol problem are encouraged to seek help through the company provided Employee Assistance Program (EAP). To do so, they should contact the EAP confidentially using the toll free telephone number shown on the EAP Poster, at each jobsite or location (see the information tab) or contact the Company's Director of Safety in Norfolk. Also, Supervisors and Managers may refer employees to the EAP. The EAP is free to employees and their families and will assist them in overcoming drug abuse by providing information on treatment opportunities and programs. However, the decision to seek diagnosis and accept treatment for drug abuse is primarily the individual employee's responsibility. Employee's who voluntarily request the company's assistance in dealing with a drug abuse problem may do so without jeopardizing continued employment with the company, provided that they strictly adhere to the terms of their treatment and counseling program and immediately stop use of the drugs (See Information Tab).

VIRTEXCO's DRUG-FREE WORK PLACE POLICY:

VIRTEXCO Corporation reserves the right to test for drug and alcohol use at any time during employment at its sole discretion. Certain times and circumstances in which drug testing is required are described below:

a. *Pre-employment (post offer):*

Applicants who test positive will not be hired.

b. *Post-Accident Testing:*

Because drug users have proven to be more likely to cause accidents and injuries on the job, employees involved in an on-the-job accident resulting in professional medical treatment will automatically be drug and alcohol tested.

c. *Follow-Up Testing:*

All employees referred to the (EAP) who undergo professional counseling or a rehabilitation program for drug or alcohol abuse will be subject to

unannounced testing during the program, following completion of the program for a period of not more than two years.

d. *Customer Required Testing:*

Employees will be expected to take any drug or alcohol test that may be required by any of our customers in order to work as a contractor on their property.

e. *Discretionary Testing (for reasonable cause):*

Employees will be subject to drug and alcohol testing if the company believes there are reasonable grounds to suspect that an employee is under the influence of drugs or alcohol in violation of the Drug-Free Work Place Act.

f. *Random Testing:*

Employees may be selected at random for drug and/or alcohol testing at any interval determined by VIRTEXCO.

Any employee who tests positive will be subject to immediate disciplinary action up to and including discharge. In addition, any employee who fails to cooperate fully with the administration of this drug testing policy, including a sample or some other aspect of the testing process will be discharged from employment.

The Company may, at its discretion, remove the employee from the work force or reassign the employee away from safety-sensitive or confidential duties until the test results are received.

All substance abuse testing will be performed by highly reputable laboratories or health-care providers chosen by the Company. All positive drug and alcohol test results will receive confirmation testing.

The Company will test (urine and saliva) at a minimum, for the presence of Amphetamines, Marijuana, Cocaine, Opiates, and PCP. Alcohol may be tested by saliva or other appropriate means.

The results of drug and alcohol testing of a VIRTEXCO employee will be strictly confidential between the employee, the laboratory the medical review officer, the Director of Safety and Human Resource Director, and the employee's management personnel. The results will not be disclosed to anyone else without the written consent of the employee.

DISCIPLINARY MEASURES FOR NON-COMPLIANCE TO POLICY:

The Company reserves the right to take any disciplinary action it feels is appropriate to ensure compliance with this policy and any employee failing to comply with the policy will be subject to disciplinary action, up to and including discharge, without prior warning or counseling.

END PROCEDURE

APPENDIX L

VIRTEXCO CORPORATION LADDERS AND STAIRWAYS

POLICY

After a year of familiarity and implementation, by the end of December 2009, VIRTEXCO's ladder policy will go into complete effect.

Work to be performed where employees feet are to be six (6) feet or more above the floor or ground is to be planned and executed so that scaffolding, scissor lifts, with proper top rails, mid rails and toe boards, or JLG type personnel lifts can be used. Working from ladders (not climbing or descending) is strongly discouraged and initially is to be permitted only where at no point during the planning or execution of the work was there ever adequate space for access and use of scaffolding, scissor or personnel lifts. If the use of ladders or work where employee's feet are six (6) or more feet above the floor or ground can be justified, fall protection must be used while the work is on going, (not while climbing or descending).

With the agreement of the Director of Safety, Superintendents may approve working from ladders in extreme instances, and fall protection must be used.

Only non conductive ladders may be used on VIRTEXCO jobsites or locations (wood and aluminum ladders are unacceptable).

LADDER SAFE PRACTICES:

1. Only ladders capable of supporting four times the recommended load shall be used on the jobsite.
2. All ladder components shall be free of defects, which could cause injury or snagging of clothes.
3. Ladders shall be maintained free of oil, grease, and other slipping hazards.
4. Ladders shall be used only for the purpose for which they are designed.
5. Ladders shall be used on stable and level surfaces and tied off to prevent accidental displacement.
6. Ladders placed in high traffic areas shall be barricaded to prevent displacement by other workers.
7. The areas around the top and bottom of ladders shall be free of hazards.
8. Ladders shall not be moved shifted, or extended while occupied.
9. Ladders shall be inspected for defects before initial use and at the beginning of each shift if the ladder is presently in use.
10. Portable ladders found to be defective shall be immediately removed from service and tagged accordingly.
11. Before discarding defective ladders, they shall be cut up and or rendered useless.
12. When ascending or descending a ladder, the user shall face the ladder.
13. Each employee shall use both hands to grasp the ladder rungs when progressing up or down the ladder.
14. Employee shall not carry any object load, tools or materials, that could cause the employee to lose balance and fall. (use hand lines)
15. Metal spreader or locking devices shall be provided on each stepladder to hold the

- front and back sections in an open position when the ladder is in use.
16. Stepladders shall not be used as straight ladders.
 17. The top or top step of a stepladder shall not be used as a step.
 18. Cross-bracing on the rear of stepladders shall not be used for climbing unless the ladder was designed for that purpose by the manufacturer.
 19. When ladders are used for access to an upper landing surface, the ladder's side rails shall extend at least 3 feet above the upper landing surface to which the ladder is used to gain access, or step through side rail extensions shall be used.
 20. Straight ladders shall be used at such an angle that the top of the ladder is approximately one-quarter the length in angle from the bottom of the ladder.
 21. Portable extension or straight ladders shall be tied off or held by another employee at all times.

STAIRWAY SAFE PRACTICES

1. Eliminate all slip, trip and fall hazards on and around stairways immediately.
2. Always use stair rails when going up and down stairwells.
3. Look for the leading edge of stair treads when using poorly lit stairwells.
4. Do not use incomplete stairs. Use another route.
5. Do not obstruct your using of your feet with large boxes or parcels. Break such boxes down and carry the individual items up or down the stairs one at a time.

END PROCEDURE

**VIRTEXCO CORPORATION
TRAINING RECORD
LADDER AND STAIRWAY**

I acknowledge that I have received training in Ladder and Stairway use.

PRINT NAME

EMPLOYEE SIGNATURE

DATE

TRAINING PROVIDED BY

**VIRTEXCO CORPORATION
FALL PROTECTIONPOLICY**

Our greatest opportunity for a life threatening injury is a fall. This is why we must practice good fall protection and insist on 100% fall protection from all of our people.

All walking/working surfaces that would subject an employee to a fall 6 feet or more to a lower surface shall be protected from such a fall. The protection provided shall be by the use of a guardrail system, safety net system, or personal fall arrest system. All protection will comply with 29CFR 1926.500, 29CFR 1926.501 and 29CFR 1926.502.

A. There are three types of fall protection available to us.

1. Guardrails, top rails, midrails, and a toe board.
2. Properly installed nets.
3. Personal Fall Arrest Systems.

B. THE 100% 6 X 6 RULE

1. Use of 100% fall protection is mandatory on VIRTEXCO sites and locations for all VIRTEXCO employees and Subcontractor and Vendor personnel; closer than six (6) feet from the ground, floor, deck or water of any depth.
 - a) Going to, or coming from, the point of work.
 - b) While at the point of work.
2. Exception
 - a) While ascending or descending ladders.
 - b) Unless otherwise specified.

C. Training

1. The Fall Protection Safe Practices, Procedures and Disciplinary Policy shall be a part of the orientation and documented with each employee's signature.
2. Fall Protection training shall be continually addressed, reinforced and retraining provided during weekly safety meetings and documented by the attending employee's signature.
3. All employees will receive specific training in the care, use the inspection of fall protection by their immediate supervisors.

D. Inspection

1. Employees

a) Are responsible to inspect the fall protection equipment assigned to them at the beginning of the shift or before use.

- 1) Harnesses
- 2) Lanyards
- 3) Rope Grabs
- 4) Retracting Lanyards
- 5) Attachment Devices

b) Report on any deficiencies to their immediate supervisor.

c) Do not use any defective equipment.

d) Seek advice from Supervisor or Director of Safety.

e) Make sure defective equipment is replaced.

f) Turn in defective equipment for repair or removal from service.

2. Immediate Supervisors' are responsible

a) On a daily basis, at the beginning of each shift, or before use, inspect all fall equipment to be used by the employees they supervise except that equipment assigned to individual employees.

- 1) Horizontal and vertical life lines
- 2) Retracting life lines
- 3) Guard Rails
- 4) Nets
- 5) Anchors and attachment devices

b) Seek advice from the Director of Safety.

c) Resolve deficiencies brought to their attention by employees they supervise.

d) Make sure defective equipment is unavailable for future use until repaired or replaced.

e) Ensure equipment to be taken out of service permanently is destroyed in such a manner as to never be able to be used by anyone on or off the site or location.

Nets

- A. When safety nets are selected as the method of fall protection, they shall be provided when work places are more than 25 feet above the ground or water surface or other surfaces where the use of scaffolds, JLG's catch platforms, temporary floors, properly hooked off safety harnesses are impractical.
- B. Where nets are selected as the form of fall protection.
- 1) One of the other acceptable forms of fall protection must only permits a fall distance of six (6) feet or less must be used.
 - a. Until the first level of nets is in place.
 - b. While the nets are being erected.
 - 2) Plan the work for installation of nets, put fasteners and cable on columns and girders before they are set, as well as outriggers for perimeter nets. It is more cost effective and, therefore, fall exposure is reduced when as much work as possible is done on the ground.
 - 3) After support cables are hung, nets can be hooked to the cables on either side and at one end of an area to be netted and then pulled into place with rope, like a horizontal window curtain, then hooked on the fourth side.
 - 4) Net manufacturers and rental firms will lease nets erected or will provide the expertise including custom drawings and onsite assistance to VIRTEXCO or subcontractors to do the work.
- C) Nets shall extend eight (8) feet beyond the edge of work surfaces where employees are exposed to falls.
- D) Nets shall be installed as close under the work surface as practical but never more than 25 feet below any work surface.
- E) Nets shall be hung with sufficient clearance to prevent employees contact with surfaces or structures below, should a fall take place. Clearances shall be determined by impact load testing with sandbags to a load of 400 lbs.
- F) Nets for fall protection shall be.
- 1) 6 inch X 6 inch mesh.
 - 2) All new nets shall meet accepted performance standards of 17,500 foot pounds minimum impact resistance as certified by the manufacturers.
 - 3) Edge ropes minimum breaking strength shall be 5,000.

G) Forged steel safety hooks or shackles shall be used to fasten the nets to their supports and to one another. Hooks shall not be hooked to one another, but rather to suspended cables or to the edge rope of the adjacent net.

H) The Director of Safety is to be consulted for specific application information.

Guardrails

A) Guardrails are the best method of fall protection available to us and are generally more acceptable than any other form of fall protection.

B) The minimum requirements for guardrail on open-sided floors, decks, or platforms 6 feet or more above adjacent floor or ground are:

1) The railing must be able to withstand a downward and outward force of 200 lbs and 150 lbs to midrail.

2) A standard wooden railing is to be built using a standard 2 X 4 toprail, a standard 2 X 4 midrail, and a standard 2 X 4 toeboard. The toprail must be smooth and have a height of 42". The midrail must be halfway between the toprailing and the toeboard. The toeboard must be flush with the walking surface. The ends of the rails shall not overhang the terminal post. Wooden posts are to be a minimum of 2 X 4 on eight (8') foot centers.

3) Three eighth (3/8') inch wire rope may be substituted for the top and midrail.

4) The use of banding iron for perimeter railings is prohibited.

C) Other materials may be used, such as pipe and angle iron as long as they come up to the minimum standards.

D) Employees working on properly constructed and handrailed scaffolding (including bracket type) will not generally be required to wear safety harnesses. The same applies to rigid, adequately handrailed temporary floor decking at various elevations.

Body Harness

A) Body harnesses are to be worn by employees while performing work other than ground or solid floor elevations and when other safeguards, such as nets, planking, or scaffolding cannot be used to protect employees from a fall distance of over 6 feet.

1. When working on floats, boson's chairs or other suspended scaffolding or working platforms, the suspension of which is by ropes and needle beams, rope falls and brackets, ratchet type drum brackets and cable, metal rod brackets and needle beams or by any other means where the support for the working platform is suspended from above.

2. When working from a toothpick stage, painter's stage, or temporary staging of a similar nature (width, mobility, etc.) even though handrailed.
3. When working on elevations and on surfaces, platforms, etc., not specifically covered in items 1 and 2 where there is the possibility of falling and where it is practical and feasible for such employees to wear body harnesses.
4. Any time when on pile driving leads 6 feet off the floor or ground.

B) Hooking up or tying off:

1. Shall be to a structural member capable of holding 5,000 lbs.
2. The lanyard hook shall be hooked so that it will close all the way. Never put a body harness hook on a beam flange, except through a hole in the flange.
3. Can be hooked to a horizontal lifeline of 3/8" cable or larger with at least 3 cable clamps in each end and secured to a structural part capable of holding 5,000 lbs.
4. Can be hooked off to a vertical lifeline of 5/8" nylon/dacron rope tied off to a structural member capable of holding 5,000 lbs.

C) Use requirements:

1. Ropes and lanyards shall not pass over sharp edges without padding or "softeners".
2. Ropes and body harnesses shall not be dragged over concrete or rough surfaces.

D) Care requirements:

1. Ropes and body harnesses shall be dried before storing, otherwise, deterioration will be hastened no matter what the fiber.
2. Ropes and body harnesses shall not be stored on the ground or on concrete floors, but rather hung on pegs or hooks on dry walls away from excessive heat, chemicals, moisture, and sunlight.

F) Inspection:

1. New ropes and body harnesses shall be inspected thoroughly to determine that no parts are damaged or defective before being put into service.
2. Before using a body harness, lanyard or installing a lifeline or line supporting employees, the employee is to personally inspect the harness and/or line for any defects.
3. Under no circumstances is a body harness, lanyard, or lifeline with a known defect or expired inspection date to be used.

4. Ropes on which employees expect to trust their lives shall be inspected in a thorough manner including:
- a) Going over every foot of the rope's length.
 - b) Observe the number of fibers broken on the outside.
 - c) Open up the rope by untwisting the strands, the interior should be bright and clean as when it was new.
 - d) Displacement of yarns or strands, variations in size or roundness of strands, and discoloration are additional indicators that rope should be taken out of service.
 - e) Spots where rope has been exposed to oils and chemicals indicate an unsafe rope.
 - f) Ropes that have been continuously exposed to chemical atmospheres for over one week should be closely examined.
 - g) The "fingernail test" is a quick test for chemical damage. A good estimate of the strength of fibers can be made by scratching the fibers with a fingernail – fibers of poor strength will readily part.
 - h) Due to the motion or slippage on a supporting surface when under high tension, synthetic rope sometimes melt on the surface and form a skin. This skin is evidence of degradation.

G) Inspections of body harnesses on which employees expect to trust their lives shall be in the most thorough manner including defects in:

- 1. Brads
- 2. Stitching
- 3. Broken strands
- 4. Condition of grommets and buckle
- 5. Presence of manufacturer's date tag

Perimeter Guarding of Floors and Decks

- A. Every open sided floor, deck or platform six (6) feet or more above the adjacent floor or ground level shall be provided with fall protection.
- B. Employees working jobs where work places are six (6) feet or more above the water or where a fall would be to something other than the water, shall use one of the other fall protection methods in addition to work vest.

- C. There are circumstances such as roof decks where parapet wall will not be installed for awhile, but yet employees have a need to walk over the wide deck, to get to their work areas as decking operation pushes on.
- D. On flat and slightly graded decks, a warning line consisting of lightweight rope, or flagging can be erected on movable stanchions 10 feet on centers, 42 inches high, six (6) feet back from the edge of the deck, as long as the employees do not cross over the warning line to the outside edge of the deck. Employees having to cross the warning lines have to use additional fall protection.

END PROCEDURE

APPENDIX N

VIRTEXCO CORPORATION HEARING CONSERVATION

Whenever an operation is suspected of producing noise levels exceeding 85 db, an accurate reading will be obtained.

- A. If the noise levels cannot be reduced by engineering controls, protective devices will be used. The protective devices will be provided and used in accordance with 29CFR 1926.101.
- B. The noise levels notwithstanding protective devices will be supplied to employees at their request.

END PROCEDURE

APPENDIX O

VIRTEXCO CORPORATION SCAFFOLDING GENERAL REQUIREMENTS

All scaffolding erected by VIRTEXCO employees, subcontractors and vendors shall be done so under the supervision of a competent person. The scaffolding will also comply with 1926.451 in its entirety. All employees working on scaffolds will receive instructions in safe and proper methods of scaffold use.

1. Scaffolding must be erected in accordance with the manufacturers requirements, which must be on site during the erection and while the scaffold is in place.
2. Any scaffolding not being erected in accordance with the manufacturer's requirements must be erected in accordance to specifications and drawings signed off by a Professional Structural Engineer. A copy of the foregoing must be on site during the erection and while the scaffold is in place.
3. 100% fall protection must be used to erect and dismantle scaffolding.
 - a) Employees must work from the inside of scaffolds.
 - b) May hook-off to properly anchored vertical life lines or retractable life lines.
 - c) When using scaffold as a fall protection anchorage, only the corner post may be used.
4. Scaffold tie back braces to structures shall be rigid and meet manufacturers requirements.
 - a) Vertically placed, a maximum, of every three bucks, or lifts in height.
 - b) Horizontally placed, a maximum, of or equivalent, to every three bucks in width.
 - c) Or in accordance with a Professional Structural Engineers requirements, which must be on site during erection, and while the scaffold is in place.
5. Each platform on all working levels shall be fully planked.
6. Each scaffold platform and walkway shall be at least eighteen inches (18") wide or two boards wide.
7. Front edge of platform shall not be more than fourteen inches (14") from the face of the work, unless guardrails or fall protection is used.
8. For plastering and lathing, eighteen inches (18").
9. Each end of a platform shall extend six inches (6") over the centerline of its support, unless cleated or otherwise restrained.
10. Platforms ten feet (10') or less shall not extend over its support more than twelve

inches (12”) unless it is designed and installed so that the cantilevered portion can support without tipping or has guardrails to block employees access.”

11. Platforms over ten feet (10’) shall not extend more than eighteen inches (18”) unless it is designed and installed so that the cantilevered portion can support without tipping or has guardrails to block employees access.”
12. Where platforms overlap the overlap shall occur over supports and shall not be less than twelve inches (12”) unless nailed together or otherwise restrained.
13. Platforms shall not be coated with opaque finishes, except for edges for I.D. Platforms can be coated with wood preservatives, slip-resistant finishes but may not obscure the wood surfaces.
14. Scaffold components from different manufacturers shall not be intermixed unless they fit without force.
15. Scaffold poles, legs, posts, frames, and uprights shall bear on base plates, mudsills or other adequate firm foundation and nailed or screwed in place.
16. Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.
17. Each scaffold component shall be capable of supporting, without failure, its own weight and at least four (4) times the maximum intended load applied or transmitted to it.
18. If scaffold platforms are more than two feet (2’) above or below a point of access, portable ladders or hook-on ladders shall be used.
19. Cross braces shall not be used as means of access.
20. Hook-on and attachable ladder rung width is to be a minimum of eleven and one-half inches (11 ½”).
21. Hook-on and attachable ladder spacing between rungs is to be a maximum of sixteen and three-quarters inches (16 ¾”).
22. Scaffolds and scaffold components will not be loaded in excess of their maximum intended loads or rated capacities.
23. Shore or lean-to scaffolds are prohibited.
24. Scaffolds will be inspected for visible defects by a competent person before each work shift, and initial the inspection card.
25. Riding a mobile or wheeled scaffold is prohibited.
26. Scaffolds can not be erected with-in ten feet of energized electrical service.

27. Steps and rungs of ladders and stairways type access shall line up vertically with each other.
28. Erecting or dismantling of scaffolding will be under the supervision and direction of a competent person.
29. No work on scaffolds with snow, ice, or other slippery material except as necessary to remove such materials, this must be done using additional fall protection.
30. No debris is allowed on scaffold.
31. Makeshift devices such as, but not limited to, boxes and barrels including ladders will not be used on top of a scaffold platform to increase the working level of employees.
32. Each employee on a scaffold more than six feet (6') above a lower level will be protected from falling to that lower level.
33. On a single-point or two-point adjustable suspension scaffold all employees will be protected by both a personal fall arrest system and guardrail system.
34. Guardrail system must have a two hundred (200) pound capacity.
35. Outrigger beams in the shape of an I-beam or channel will have the web section in a vertical position.
36. Boatswain's chair seat slings will be reeved through all four (4) corner holes and crossed on the underside. Minimum of five-eighths inch (5/8") rope.
37. Counterweights will be made specifically designed as such, and shall be secured by mechanical means.
38. Scaffold safety planks shall be stamped by American Lumber Standard Committee for such use.
39. Top rails: equivalent in strength to two inch by four-inch (2" X 4") lumber.
40. Midrails: equivalent in strength to two inch by four-inch (2" X 4") lumber.
41. Toeboards: equivalent minimum strength to one inch by four-inch (1" X 4") clear lumber.
42. Swing stage rope shall be capable of supporting, without failure, at least six (6) times the maximum intended load.

END PROCEDURE

**VIRTEXCO CORPORATION
HOT WORK PROCEDURE**

PURPOSE:

The purpose of this policy is to ensure that the threat of fire is maintained at an acceptable level of risk.

SCOPE:

This policy applies to all operations involving welding and burning at VIRTEXCO projects in which potential fire loads require extra precautions to be implemented.

- A. HOT WORK Permits (see permit tab) shall be required any time the following cutting or welding operations take place:
 - 1. Within any operating area of any existing facility.
 - 2. Whenever work is performed on or in any tank, vessel, or confined area.
 - 3. Whenever an area is specifically designated as requiring a Cutting and Welding Permit.
 - 4. Cutting or welding on drums, containers, or hollow structures which have contained unknown, toxic or flammable substances.
- B. Persons authorized to sign Hot Work Permits:
 - 1. Specifically named individuals authorized by the superintendent.
 - 2. Personnel authorized by an owner.
- C. The issuing authority of any Hot Work Permit shall inspect the area covered by the permit and note any precautions required.
- D. The original of the Hot Work Permit shall be turned in to the Superintendent and matched up with the copy; both shall be filed with permanent job records.
- E. Any person not following all of the requirements listed on the HOT WORK Permit shall be subject to termination.
- F. A Fire Watch who is knowledgeable in the following will be stationed at HOT WORK operations when required by the permit, Superintendent or the Owner.
 - 1. Responsibilities and duties of a Fire Watch.

2. Selection and use of portable fire extinguishing equipment.
3. How to notify emergency response personnel?
4. The Fire Watch will have at a minimum, one 10 pound ABC fire extinguisher available for use at all times.
5. The Fire Watch will watch for fires in all exposed areas, try to extinguish them only when it is obviously within the capacity of the equipment available, otherwise they will summon emergency response personnel.
6. The Fire Watch shall have no other duties assigned during the hot work operations.
7. A Fire Watch shall not leave their assigned operation for any reason, this includes breaks and lunch; furthermore, the watch must remain one-half hour after the hot work has stopped.
8. A Fire Watch can only be relieved by another individual knowledgeable in the above-mentioned requirements.
9. Fire Watch personnel shall wear an orange vest with, "Fire Watch" denoted on the vest.

END PROCEDURE

APPENDIX Q

VIRTEXCO CORPORATION STEEL ERECTION REQUIREMENTS

SCOPE:

To protect all employees on the worksite during any erection of steel.

GENERAL REQUIREMENTS:

1. A written site specific Steel Erection plan must be agreed upon between the erector and the Director of Safety prior to any mobilization onsite by the erector.
2. The written site specific Steel Erection plan will be in accordance with 1926 Subpart R Appendix A and address each topic, there in, which relates to the subject project. (See Information tab for a copy)
3. The following requirements are to be made a part of the site specific plan.
 - A. Crane
 - a) The Director of Safety must be notified, and a time agreed upon for the crane to be checked out before the crane is to be put to work.
 - b) Must have a current independent annual inspection certificate.
 - c) Must have manufacture's operating manual with the cranes serial number affixed by the manufacturer.
 - d) At least one 10 pound ABC fire extinguisher mounted in a vehicle bracket.
 - e) Manufacturers lift chart for the specific model and serial number machine.
 - f) Have swing radius barricading for the entire swing radius.
 - B. Crane Operator
 - a) Documentation showing the operator has passed a crane operator physical with in preceding 12 months.
 - b) A memorandum signed by an officer of the erector, denoting the operator, by name is qualified OR a current certificate from an OSHA compliant training organization covering the crane to be operated.
 - C. Fall Protection
 - a) 100% fall protection is required of all personnel, including unloading steel from trucks and connectors.
 - b) Horizontal steel members my not be used for hook off, or "cooned" until there are at least two bolts in place in either end, or equivalent welds are made on each end.
 - c) Shock absorbers may not be used where a fall to a lower surface or obstruction is with in 6 feet of the anchorage point.

D. Rigging

- a) Steel unloaded from trucks by hook is to be choked, no shake out hooks.
- b) Shake out hooks are only to be used on individual pieces of steel or assembly's where the bottom of the steel is lifted no more than waste high.
- c) A four foot long tag line is required on every lift at each point it will be landed by a person.

END PROCEDURE

APPENDIX R

VIRTEXCO CORPORATION CRANE SUSPENDED PERSONNEL PLATFORMS REQUIREMENTS

(a) Use of a suspended personnel platform shall be approved by the VIRTEXCO Regional Manager, Project Manager and Senior site or location Manager in accordance with the following criteria:

1. Cranes may be used to hoist and suspend employees on a personnel platform or to provide access and egress in unique work situations when such action results in the least hazardous exposure to employees.
2. If it is not safe to erect and use, a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, then using a crane suspended personnel platform is permitted.

(b) Cranes used to lift personnel platforms shall meet the following criteria:

1. Be equipped with power up and power down for the boom, and the personnel platform load line (brakes are not acceptable to control speeds).
2. Be equipped with an anti-two blocking device for the personnel platform load line.
 - (aa) The device will prevent contact of the overhaul ball or the block to the point section.
 - (bb) Device must de-activate the hoisting action.
3. Be equipped with a boom angle indicator visible to the operator from the seat.
4. On telescoping booms:
 - (aa) Be equipped with a device to indicate to the operator the boom's extended length or,
 - (bb) In lieu of the preceding device, determine the boom length and radius to be used during the lifting of the personnel platform prior to the lift.
5. Utilize personnel platform load line capable of supporting seven times the maximum intended load (personnel platform) except when rotation resistant wire rope is used, and then it must be capable of supporting ten times the maximum intended load.
6. Shall be set up on firm footing within one percent of level to ground.

7. Cranes equipped with outriggers shall have them fully extended and set on firm footing.

8. Operators shall:

(aa) Raise, lower, swing, and boom in a slow, controlled manner with no sudden movements of the suspended personnel platform.

(bb) Shall engage the load and boom hoist drum brakes, swing brakes, and locking devices when the personnel platform is in a stationary working position.

(c) Suspended personnel platforms shall meet OSHA 1926.550 (g). including:

1. Designed by a qualified engineer using the following criteria, plus any other pertinent criteria contained in 1926.550(g):
2. The suspension designed to minimize tipping of the personnel platform due to movement of employees.
3. The personnel platform and suspension below the load line connection shall be capable of supporting five times the maximum load.
4. A plate shall be affixed to the personnel platform indicating the weight of the platform and its rated load capacity.
5. There shall be a standard guardrail at 42" and a mid rail at 21".
6. There shall be a standard 4" toe board.
7. Expanded metal with no greater opening than 1/2" shall extend from the toe board to the top guardrail.
8. A grab rail set out from the top guardrail and capable of holding 5,000 lbs shall be installed inside the entire perimeter.
9. The access gate shall swing inward and have a positive latch to prevent accidental opening.
10. Head room shall allow employees to stand upright in the platform.
11. The roof or overhead protection shall be of expanded metal with openings of no greater than 1/2".
12. All rough edges shall be smoothed to prevent punctures or lacerations.
13. A qualified welder shall do all welding.

(d) At each jobsite when a suspended personnel platform arrives on the site and before lifting any employees and after any repair or modification,

1. The platform and rigging shall be proof tested to 125 percent of the platforms rated capacity with test load evenly distributed.
 2. After proof testing, the responsible superintendent shall inspect the platform and rigging.
 3. Each year the basket is in service, it has to be certified on the in-service date located on the data plate. It must meet all guidelines as listed above each time inspected.
- (e) The VIRTEXCO Regional Manger must approve a crane traveling while an occupied crane suspended personnel platform is raised, using the following criteria:
1. On a case-by-case basis.
 2. Must be the **least** hazardous way to perform the work.
 3. Travel restricted to a runway. This means a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane. An existing surface may be used as long as it meets these criteria.
 4. Travel shall be limited to the load radius of the boom to be used during the lift.
 5. The boom must be parallel (pointed towards) the direction of travel.
 6. A complete trial run should be performed using simulated weight of employees and materials before employees are permitted to occupy the platform.
 7. If rubber-tired crane used,
 - (aa) Check condition and pressure of tires.
 - (bb) Use the chart capacity for lifts on rubber, and then reduce the rated capacity by 50%.
 - (cc) Outriggers be partially retracted for travel.

(f) Rigging Personnel Platforms

1. Wire rope slings used to connect the personnel platform to the load line must be inspected prior to use by a competent person.
2. Only alloy anchor-type shackles with bolt, nut, and retaining pin may be used.
3. Each wire rope sling used to connect the personnel platform to the load line is to be connected to a master link or shackle to ensure the load is evenly divided among the legs of the slings.
 - (aa) Thimbles are required in the eyes of all wire rope slings.

- (bb) Slings and rigging used to attach the personnel platform to the load line shall not be used for any other purpose.
 - 4. The suspended personnel platform shall be shackled to the lifting line with an anchor type shackle with nut and retaining pin or wire the shackle pin so it cannot be unscrewed unintentionally.
 - 5. All rigging must be capable of supporting five times the maximum load applied to that component. When rotation resistant cable is used, the factor is ten times.
- (g) The following procedures shall be carried out at the beginning of each shift or prior to hoisting employees, whenever the crane is moved and set up in a new location or returned to a previously used location or, any time new employees are assigned to an ongoing operation.
- 1. A pre-lift meeting shall be held,
 - (aa) to be attended by the responsible foreman, the crane operator, the employee(s) to be lifted and employee(s) signaling
 - (bb) All procedures applicable to the lift contained in this VIRTEXCO Crane Suspended Personnel Platforms procedure shall be reviewed.
 - (cc) The VIRTEXCO Pre-lift Check list shall be completed. Original to the VIRTEXCO field office, copy on the crane (see Permit Tab).
 - 2. A trial lift shall be performed immediately prior to placing employees on the platform.
 - (aa) A single trial lift may be performed at one time for all locations that are to be reached from a single set up position as long as the platform is lifted and held at each location at which it is to be positioned.
 - (bb) Repeated, whenever the crane is moved and set up in a new location or returned to a previously used location.
 - (cc) Repeated, when the lift route is changed.
 - (dd) The platform shall be loaded with weight, such as sandbags, to the anticipated lift-weight including tools.
 - (ee) The trial lift will be made from the ground or at whatever location employees will enter the platform.
 - 3. During the trial lift, the operator shall,
 - (aa) Determine that all systems, controls and safety devices are functioning properly.
 - (bb) That no interference exists.
 - (cc) Determine that he can stay within 50 per cent of the crane's capacity.
 - 4. After the pre-trail lift and just prior to hoisting personnel, the responsible foreman shall insure:

- (aa) The platform is hoisted a few inches and inspected to see that it is secured and properly balanced.
- (bb) Multiple part lines are not twisted around each other.
- (cc) The hook up on the top of the personnel platform is centered.
- (dd) Lifting and boom cables checked to insure they are free of kinks and that they are tracking on shives and reeving on drums properly.
- (ee) Make final visual inspection to make sure any deficiencies that developed or became evident during the pre-trial lift are corrected.

(h) The following safe work practices shall be followed by the employees engaged in the lifting of the personnel platform:

1. The platform shall not be loaded in excess of the rated load on the capacity plate.
2. The number of employees on the platform is not to exceed the number required for the work being performed.
3. Personnel platforms are to be used only for employees, their tools and the materials necessary to do the work.
4. Personnel platforms may not be used to hoist materials or tools when not hoisting personnel.
5. Materials and tools are to be evenly distributed within the platform and secured to prevent displacement.
6. Except for the person signaling, body parts shall be kept inside the platform during raising, lowering and positioning.
7. Each employee on the platform is to hook their Safety Harness off to a structural member of the personnel platform (not the grab rail).
8. Before employees exit or enter a hoisted personnel platform that is not landed on the ground, the platform must be secured to the structure where the exit or entry is to take place.
 - (aa) Unless securing to the structure creates an unsafe situation.
 - (bb) Regardless of whether the platform is secured to the structure or not, employees exiting or leaving shall use double safety lanyards. When exiting the platform, while hooked to the platform with one lanyard, reach out and hook off to the structure with the second lanyard – then, unhook from the platform. When entering the platform from a structure, reverse the process. The object is for the employee to be hooked off 100% at the time.
9. At least one, ½” tag line shall be tied near the toe board to one of the corner uprights (one half inch)

- (aa) Ideally, the tag line should be long enough for a person on the ground or floor to control the movement of the personnel platform.
 - (bb) The tag line may be as short as 4 feet for ground personnel grab hold of when landing the personnel platform.
10. The operator shall not leave the controls while the personnel platform is suspended.
 11. Hoisting of employees shall not be attempted, or be promptly discontinued, upon indication of any dangerous weather conditions or other impending danger.
 12. Employees being hoisted shall remain in continuous sight of or in direct communication with the operator. Signals shall be visible or audible to the operator at all times.
 13. Standard crane hand signals shall be used unless telephone, radio or the equivalent is used.
 14. No other lifts shall be made on any of the cranes' load lines while the personnel platform is hooked up.

END OF CRANE SUSPENDED PERSONELL PLATFORM REQUIREMENTS

END PROCEDURE