1 Status
   1.1 Update of existing policy, effective 12/06/10.

2 Purpose
   2.1 To define the circumstances under which Cianbro will provide its own confined space rescue services. In addition, provide guidance necessary for the proper training of team members, the proper equipment to use and the proper protocols to follow in the event of an emergency.

3 Applicability
   3.1 This policy applies to all subsidiary companies and departments of The Cianbro Companies.
   3.2 All organizations are required to comply with the provisions of this policy and procedure. Any deviation, unless spelled out specifically in the policy, requires the permission of the Corporate Safety Officer or designee.

4 Definitions
   4.1 Confined Space Entry Rescue: Designated and trained responders enter a confined space to remove team members who have become injured or incapacitated.
   4.2 Confined Space Non-entry Rescue: Injured or incapacitated team members inside of a confined space are removed by someone external to the confined space.
   4.3 Confined Space Rescue Team Member: Cianbro team members who volunteer for and meet the requirements of rescue team membership and who serve in a pool of qualified people who, when assigned to a project will be part of the designated rescue team.
   4.4 Confined Space Rescue Training Requirements: Complete initial twenty-four hour Basic Confined Space Rescue course, which includes First Aid/CPR/AED certification, attendance at Annual Refresher training, participation in periodic rescue drills.
   4.5 Qualified Confined Space Rescue Instructor: An instructor with formal training/certification in instructional methods who is competent through training and experience in all rescue skills included in the curriculum. Instructors should be provided with opportunities to attend outside training and to develop and maintain a high skill level.
   4.6 Regional/Business Unit Confined Space Rescue Coordinator: A team member designated by the Business Unit or Regional Vice President to be the person to whom inquiries about rescue equipment, rescue requirements and rescue protocols is directed in that region or business unit. The Regional Coordinator is responsible for working with the Cianbro Institute to coordinate all new and refresher training. The Rescue Coordinator is also responsible for the purchase, deployment and maintenance of confined space rescue equipment. The Regional Coordinator will designate qualified instructors, evaluate outside instructional resources when necessary and will oversee the rescue drills which take place at projects in actual confined spaces.

5 Policy
   5.1 Any time Cianbro team members enter confined spaces there must be a plan to rescue those team members in the event of an emergency.

6 Responsibilities
   6.1 The top Cianbro manager on the affected job site is responsible for the implementation of this policy on the project.
   6.2 The corporate safety department is responsible for maintaining this document.
7.1 Rescue Requirements

7.1.1 Any time Cianbro team members enter Confined Spaces there must be a plan to rescue those team members in the event of an emergency. Options include a) Non-entry Rescue or b) Entry Rescue.

- Non-entry Rescue means that any team member who enters the confined space may, at any time be removed from that confined space by someone external to the space. Typically this would involve the entrant being connected to a device such as a tripod where an attendant upon recognizing the need to extract the entrant uses the mechanical advantage created by the hoist and removes that team member.

- Entry Rescue means designated and trained responders enter the confined space to remove team members who have become injured or incapacitated. Designated and trained responders may be Cianbro team members, responders supplied by the client, public sector responders, or responders contracted to provide rescue services.

7.2 Rescue Evaluation and Planning

7.2.1 Any time work involving confined space entry is being estimated and the work is being planned, the confined space rescue needs must be evaluated.

7.2.2 The first issued to be determined is if non-entry rescue techniques may be employed. If non-entry rescue is practical and will be effective for all entrants, the Activity Plan for the work shall convey this to all team members conducting the work and shall spell out the specific equipment needed and the methods to be employed to provide this service should it become necessary.

7.2.3 If Entry-Rescue is required the people estimating/planning the work must determine first, the availability of local Confined Space Rescue resources such as a client- or facility-based team, a local municipal/public sector-based team such as the local Fire Department, Ambulance Service or County Rescue Team, or a private rescue standby service. If one or more of these non-Cianbro rescue services are available, they must be contacted and evaluated to determine that they can, in fact, affect a successful rescue if needed as well as assessing their availability and any cost associated with their response. If an outside Service is selected, they must be given an opportunity and be encouraged to examine the entry site and perform a practice rescue. For any work involving IDLH atmospheres, rescuers must be onsite full time during the entry. Utilize 9.1 Appendix A for evaluating outside Rescue Services.

Upon completion of the evaluation of outside rescue services a formal decision will be made as to their use and a plan put in place to clarify all expectations and responsibilities.

7.2.4 If local Confined Space Rescue resources are not available or not capable of meeting the rescue needs of our work, Cianbro team members will be selected from the pool of
rescue trained team members and used to staff the job making up the Rescue Team for that job.
Note: Cianbro Rescue Team members will be utilized to provide Rescue capability for other Cianbro Team Members working on the project. All other entrants into the confined space ie. Client Representatives, Manufacturer’s Representatives and Sub-contractors need to make arrangements for their own rescue service and those arrangements need to be clear prior to entry. If Cianbro is to provide rescue services for other than Cianbro team members a Liability Waiver must be signed and in hand prior to entry into the Confined Space.

7.3 Cianbro Confined Space Rescue Team Membership

7.3.1 All members in the Cianbro Confined Space Rescue Pool are volunteers who have met minimum requirements. Team members do not receive any financial compensation for membership other than occasional opportunities for overtime pay arising from training and work opportunities.

7.3.2 Minimum Requirements for Team Membership

• Team members who wish to become members of the Confined Space Rescue Pool must:
  • Complete a Cianbro Respirator Questionnaire. On the questionnaire they must write on Page one “Requesting Clearance for Confined Space Rescue Team.”
  • A Pulmonary Function Test (P.F.T.) must be scheduled for the team member if he/she has not had one for three or more years or has never had one. If a P.F.T. has been conducted within the last three years, Cianbro’s medical director will review those results and after reviewing the Respirator Questionnaire will either grant or deny approval to be on the team.
  • Upon approval by Cianbro’s medical director, the team member must take the Cianbro Twenty-four Hour Basic Confined Space Rescue class or show proof of completion of an equivalent class.
  • Each Business Unit will be responsible for identifying Confined Space Rescue Team members and to work with the Cianbro Institute in order to complete any necessary training.

• Team members shall stay current in Confined Space Rescue skills by meeting the following requirements:
  • Attend the annual company-sponsored 8-hour refresher training.
  • Maintain certifications in First Aid and CPR/AED.
  • Participate in job-specific, periodic Confined Space Rescue drills.

7.4 Confined Space Rescue Team Administration

7.4.1 Each of the Cianbro Companies Business Unit or Regional Vice Presidents shall designate a Regional/Business Unit Confined Space Rescue Coordinator. This person must be someone with experience and knowledge of Confined Space Rescue and will be the person to whom inquiries about rescue equipment, rescue requirements and rescue protocols are directed in each region. This coordinator shall be responsible for working with the Cianbro Institute in scheduling and coordinating training, as well as the purchase, deployment and maintenance of confined space rescue equipment.

7.4.2 Any time a Cianbro Confined Space Rescue Team is utilized at a job site, a team leader shall be designated by the Project Manager. The team leader will be responsible to insure that adequate equipment is on site, properly deployed, properly maintained, inspected, and that on-site team members have a plan and know how to implement that plan in the event of an emergency.

7.5 Confined Space Rescue Equipment

7.5.1 Cianbro Supply in Pittsfield will maintain rescue equipment kits that are available for deployment where and when needed. These kits will contain a standardized list of equipment which Supply will ensure is present prior to shipping out to a jobsite. If
additional or special equipment is needed for a particular job, but is not in the standard kit, purchase of this equipment shall be done at the project location where it is needed in coordination with the Regional/Business Unit Coordinator through traditional purchasing protocols.

7.5.2 At least one confined space rescue instructor kit is to be maintained and kept in a central location, determined by the Regional/Business Unit Coordinator, to be available for use in training. The Regional/Business Unit Coordinator shall be responsible for the maintenance of this instructor kit.

7.6 Respiratory Protection Equipment

7.6.1 Cianbro Supply in Pittsfield shall have available the proper respiratory protection equipment for the Confined Space Rescue Team. If there is any possibility of a hazardous atmosphere in a confined space, the rescue team shall have on site with the Confined Space Rescue Kit either an adequate number of Self-Contained Breathing Apparatus (SCBA) with spare cylinders or a complete Supplied-air Respirator setup. Self-contained Breathing Apparatus and Supplied-air Breathing Apparatus have specific and detailed inspection and maintenance protocols.
- Cianbro Supply will be responsible for the annual regulator flow test maintenance and the cylinder hydro-test (every 3 years for composite cylinders and every 5 years for aluminum cylinders) maintenance.
- The jobsite where the respiratory protection equipment is deployed is responsible for the monthly inspections of the equipment and the cleaning and disinfecting of the equipment after use.

7.7 Cianbro Confined Space Rescue Site-Specific Plan Guidelines

7.7.1 Define and describe the Confined Space(s) into which Cianbro crews will be entering to conduct work.

7.7.2 Designate the Cianbro team members who are to serve as the rescue team.

7.7.3 Describe how rescue team members on site will be notified in the event of an emergency.

7.7.4 Define where team members are to report upon notification of an emergency and how and by whom “Command” will be established.

7.7.5 Designate where all confined space rescue equipment will be stored and describe the means for getting it to where needed in the event of an emergency.

7.7.6 Describe the location of and protocol to deploy rescue checklists to ensure that each of the following takes place:
- Conduct a primary assessment
- Conduct a secondary assessment
- Make the general area safe
- Secure the rescue area
- Enter confined space to remove victim(s)
- Assess victim(s)
- Package and remove victims
- Get victim(s) care as needed
- Conduct incident termination protocols

7.7.7 Describe the process used to ensure that all rescue team members are protected by our company Zero Energy/Lockout Tagout procedures

8 Budget / Approval Process

8.1 It is the responsibility of each jobsite to procure and provide all materials and PPE required and provide necessary training.
9 Related Documents

9.1 See attachments.

9.2 Documents available on Cianbro.net/Resources/Forms.

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9.1 Appendix A

Non-Cianbro Rescue Service Evaluation

1. What is the name of rescue service?
2. Where is the rescue service located?
3. How is the rescue service notified?
4. Will rescuers be off-site or on-site?
5. Are rescuers or volunteers available 24/7?
6. What is the response time to the work location?
7. Are all the rescuers trained in entry confined space rescue?
8. When was the training?
9. What has been done to maintain competency?
10. Is the rescue service familiar with the work location?
11. Is the rescue service familiar with the work and the specific space(s)?
12. Is the rescue service familiar with entry permits?
13. Is the rescue service familiar with lockout/tagout procedures?
14. Are all rescuers First Aid/CPR certified?
15. Does the rescue service have the equipment necessary to affect a rescue in this space?
16. Does the rescue service have the training and experience to properly evaluate and respond to all hazards that could be confronted in our confined space?
17. Does the rescue service have a written program or policy for responding to confined space emergencies?
18. Can a demonstration of competency be set up for Cianbro to witness?
19. Will the rescue service charge any type of fee? For rescue standby? For an actual rescue? How much?
Purpose

The purpose of this procedure is to establish general guidelines for conducting confined space rescue operations at a Cianbro jobsite. Job-specific issues need to be addressed in the job planning.

Notification

A. Staff the job with a minimum of four Confined Space Rescue Trained/Certified Team Members. Use site-specific PMP or Major Activity Plan to ensure that a protocol is in place to ensure that two members of the rescue team are outside of the confined spaces at all times.

B. Notify all Team Members, sub-contractors and visitors during orientation that an on-site rescue service is present and who that Rescue Team consists of.

C. Give periodic reminders of the Rescue Protocols at a Weekly Safety Meetings

D. If a Confined Space Emergency arises, the attendant is to immediately notify the Rescue Team members either verbally, by cellular telephone, or in person.

E. The Attendant, or other designate person, will call the designated emergency telephone number to report the emergency. When reporting this confined space emergency give as much information as possible including:
   a. Confined Space Emergency exists
   b. exactly where the emergency is
   c. the nature of the emergency
   d. the approximate number of victims or potential victims

F. Rescue Team members, upon notification, will respond to the designated location and begin the assessment of the emergency.

The Primary Assessment.

A. Rescue Team members are to designate a Leader and that Team Leader(Incident Commander) will now be referred to as “Command.” Command must confirm that the site emergency number has been called and outside resources are notified and responding.

B. Upon arrival of outside resources, the Cianbro Incident Commander can relinquish Command to the local authority having jurisdiction (A.J.H.) or establish a Unified Command Structure with that A.J.H.

C. Determine exactly what has happened. If no there are no witnesses present, look for clues at the incident location.

D. Assess the potential hazards to rescuers

E. Attempt to make contact with the victims from outside the space or conduct a quick visual assessment of victims, if possible.

F. Determine numbers of victims involved
G. Determine how long the victims have been down, the mechanism of injury, and the survivability profile of the victims.

H. Determine whether this response is a rescue or recovery.

I. Locate confined space permit and any other valuable information about the space such as last time atmospheric monitoring was conducted.

J. Determine the best place to stage equipment, conduct the rescue operations and maintain control of the area by keeping people who don’t belong out but in a place where they can be called upon for assistance if necessary.

The Secondary Assessment, Command should:

A. Determine what products are present in the confined space

B. Determine what types of hazards exist in the space, i.e., atmospheric, mechanical, electrical, etc.

C. Determine the number and location of victim(s)

D. Determine entry and exit points

E. Get the Confined Space Rescue equipment to the location.

Pre-Entry Operations

A. Make the General Area Safe

B. Remove obstacles, interferences and make a path to the exit

C. Stop all unnecessary traffic and shut down any equipment that interferes with the rescue or communication

D. Establish ventilation to the general area, if necessary

Secure the Rescue Area

A. Prepare to enter the space to perform the rescue

B. Determine hazards and products contained in the confined space

C. Conduct atmospheric testing in the space to determine oxygen level, flammability, and toxicity. Based on readings, determine the proper level of personal protective equipment. Remember: At O₂ readings below 12%, the LEL reading will not be accurate.

D. Verify that all utilities, including electrical, gas water, or other liquids, and manufacturing/processing equipment are locked out. If it is not possible to lockout/tagout, post a guard to assure utilities/equipment is not turned on during the operation.

E. Evaluate the structural stability of the confined space. If there is a potential for collapse, appropriate measures must be taken to assure the structural stability of the space.

Ventilation

A. Determine the ventilation needs for the confined space and select the proper type of ventilation.

B. Consider the effects on the atmosphere that positive or negative ventilation will have (i.e., increase or decrease flammability of atmosphere). Positive or negative ventilation (pushing or pulling) may be necessary.
C. Consider negative pressure ventilation if there is only one entry point. Atmospheric monitoring will be required to ensure a non-explosive environment is present in the exhausted vapor area.

D. Consider the effects the exhaust is having on the operation.

**Entry Operations - Victim Removal**

**I. Selection of Personnel**

A. Designated rescue-trained personnel shall make entry into the confined space. A minimum of two persons should be assigned to make entry.

B. Command shall assure that for every person making entry into the confined space, there is at least one rescuer appropriately dressed and ready as a back-up or are on the way.

**EXAMPLE:** Two rescuers; two back-ups.

C. If the atmosphere is I.D.L.H. a two person back-up team MUST be dressed and ready to enter prior to any rescuer entry into the confined space.

**II. Selection of Personal Protection Equipment**

A. Adequate personal protective equipment will be worn by all entry and back-up personnel. This shall include hard hat or helmet, gloves, proper footwear, full-body, Class III rescue harness and eye protection. Additional potential hazards identified in advance will dictate additional PPE that might include goggles and/or Nomex jumpsuits.

B. All entry and back-up personnel shall wear Supplied-air Breathing Apparatus or Self-contained Breathing Apparatus when making entry into the confined space to perform a rescue unless there is no atmospheric hazard AND no potential for an atmospheric hazard.

C. If entry personnel use an SCBA, they shall enter no farther than one half the amount of supplied air minus 500 pounds.

**EXAMPLE:** 2216PSI tank gauge pressure – ½ = 1,108 PSI minus 500PSI = 610 PSI usage.

D. Entry personnel shall carry at least one 4-gas air monitoring device

**III. Communication and Lighting**

A. If the confined space has a flammable atmosphere or the potential for a flammable atmosphere has been identified in advance, entry personnel shall have intrinsically safe or explosion proof communication equipment. If this equipment is not available, the rescuers may decide to use a tag line for communication or a message relay person.

B. If the entry team is entering a dark confined space the proper type of lighting is used. If explosion proof lighting is not available, then cyalume type lights must be used by the entry team.

**IV. Orientation of Confined Space**

A. Part of rescue pre-planning and prior to the entry into the confined space, the rescue team with the help of the responsible party, should obtain a blueprint or diagram of the space. All entry and back-up personnel should be made aware of the layout of the space to be entered.

B. All entry and back-up personnel, Command, and Safety shall be made aware of the action plan and the back-up plan prior to entry.

C. Rescuer tag lines may or may not be appropriate in the confined space, depending on the specific layout. There could be an entanglement hazard. Whenever possible the entry team should trail masonry string as a means to find their way back out.
V. Victim Removal Equipment

A. If possible, the entry team should bring a supply of breathable air for the victim.

B. Rescuers should not remove their breathing apparatus and give it to the victim.

C. Entry team should consider the necessary victim retrieval equipment prior to entry. This includes respiratory protection for the victim.

VI. Assessing Condition of Victim

A. Upon reaching the victim, entry personnel should do an immediate primary survey of the victim. If appropriate, treatment should be started immediately.

C. A quick but thorough secondary assessment of the victim should be done. If time permits, entry personnel should attempt to treat serious injuries prior to removal. Realize, however, that the type and extent of treatment you can provide can be severely limited depending on the level of protective clothing and equipment worn by rescuers.

D. If indicated, complete C-spine precautions should be administered. NOTE: Because of the difficulty removing the victim from the space, optimum C-spine precautions may not be possible.

E. If the victim is conscious, he/she should be encouraged to wear the appropriate breathing apparatus if a respiratory hazard is present or could become present.

VII. Patient Packaging

A. After treatment of immediate life threatening injuries, the victim(s) should be packaged for removal. This may include using a backboard, stokes basket, SKED stretcher or some other similar device designed for extrication.

B. Prior to removal from the space, the entry team should secure any loose webbing, buckles, straps, or any other device that may hinder the extrication process.

VIII. Victim Removal System

A. Prior to removal of the victim, the entry team, either through pre-planning or while rescuers are approaching the victim, should have determined the appropriate method of extrication.

B. As a general rule, entry personnel should never allow the victim between the rescuer and the point of egress. This may not always be possible, as in the case when one rescuer has to pull the victim while the other rescuer pushes the victim. NOTE: If the victim is obviously deceased, the Rescuers need to notify Command and a decision can be made as to whether or not to leave the body and related equipment in place for investigative purposes.

IX. Transfer to Treatment Sector

A. Immediately after reaching the point of egress, entry personnel shall transfer the victim to the medical treatment personnel.

B. If the victim is contaminated with any type of chemical, the victim shall be decontaminated prior to transport.

X. Termination

I. Preparation for Termination

A. Assure all personnel are accounted for.

B. Remove tools and equipment used for rescue/recovery.
C. If entry personnel and/or equipment have been contaminated by a hazardous material, decontamination procedures shall be followed

D. Secure the scene. Prior to turning the property back over to the responsible party.

E. Conduct an incident debriefing prior to dismissing involved personnel.

F. Command may consider activating the CISD Team.

Additional Considerations.

I. Establish Command Early

A. Assure Safety Sector responsibilities are accomplished.

B. Assign Access Control Officer from bystanders or on-site Non-rescue personnel.

C. Assure Ventilation Sector responsibilities are accomplished.

D. Assure Extrication Sector responsibilities are accomplished.

E. Assure Hazard Sector responsibilities are accomplished

F. Assign Treatment Sector when medical resources arrive.

G. Assure Staging Sector responsibilities are accomplished.

H. Assure Resource Sector responsibilities are accomplished.

II. Consider Ambient Conditions

A. Heat - Consider rotation of crews.

B. Cold - Consider effects of hypothermia on victim and rescuers.

C. Rain - Consider the effects of rain on the hazard profile.

D. Time of day - Is there sufficient lighting for operations extending into the night?

E. Consider the effect on family and friends; keep family informed.

F. Consider news media; assign a Public Information Officer to be the sole Media Contact

G. Command should call Corporate and/or an OSHA representative if there has been a serious injury or death.
Emergency Command Flowchart

Unified Command
- Public Information Officer
- Safety Officer

Operations Sector
- Extrication Group
  - Entry
  - Backup
- Retrieval Group
  - Lowering
  - Hauling
  - Belay

Hazard Sector
- Ventilation
  - Monitoring

Treatment Sector

Resource Sector
- Staging
  - Access Control