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CONFINED SPACE AWARENESS	
Author: A Holland	

MAPP - Corporate
344 Third Street
Baton Rouge, LA 70801
(225) 757-0111

MAPP – New Orleans
601 Poydras St., Suite 1715
New Orleans, LA 70130
(504) 833-6277

MAPP - Dallas
3131 Turtle Creek Blvd, Suite 500
Dallas, TX 75219
(214) 267-0700

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MAPP employees do not normally perform work in confined spaces and any subcontractor performing this type of work shall be required to submit for approval a Confined Space Program meeting or exceeding regulatory guidelines. If a client has a Confined Space Program MAPP and all subcontractors shall follow that policy. In the absence of any subcontractor or client policies, all workers shall comply with the follow policy.

1. PURPOSE AND SCOPE

1.1. This policy contains the minimum procedures to ensure the safety and health of employees who enter specific “low hazard” confined spaces or perform activities to support confined space operations, such as Stand-by Attendants and Entry Supervisors. This policy applies to all employees and sub-contractors engaged in operations covered on the following types of projects:

1.1.1. New industrial construction projects, which are located outside of an operating unit.

1.1.2. Commercial construction projects.

Any other type of project is required to follow the procedures set forth in an industrial confined space program.

2. RESPONSIBILITIES

2.1. Site Management - Site Management must assume ownership and responsibility for implementation of the policy and procedures found in this policy. Site Management shall be familiar with this policy and utilize expertise at their disposal to ensure employees are protected from confined space hazards. Site Management must evaluate confined space rescue services assigned to site entries.

2.1.1. Entry Supervisor - Supervisors responsible for employees performing work inside and around confined spaces must:

2.1.2. Ensure all confined spaces have been properly evaluated, with hazards being addressed to ensure employees/Entrants are protected prior to entry.

2.1.3. Ensure the proper Confined Space Entry Permit has been completed prior to any entry.

2.1.4. Ensure a properly trained Stand-by Attendant, with the required rescue equipment, is assigned to all entry points of all confined spaces.

2.1.5. Ensure employees/Entrants and Stand-by Attendants are aware of any hazards associated with their work including atmospheric monitoring results, and they are properly trained on this policy, and any job/site specific confined space entry procedures.

2.1.6. Ensure employees/Entrants and Stand-by Attendants adhere to all confined space entry policy requirements, and any site-specific requirements established.

2.1.7. Continuously monitor the work to assure compliance with this policy.

2.1.8. Stand-by Attendants - Confined space Stand-by Attendants provides a vital communications link between those inside of a confined space and conditions outside of the space. Stand-by Attendant responsibilities include:

2.1.9. A Stand-by Attendant shall not be used for any other duties while the confined

- space is occupied. An attendant shall only be responsible for one space at a time.
- 2.1.10. A Stand-by Attendant should be required to wear a vest or some other identification to signify he/she is a Stand-by Attendant.
 - 2.1.11. Each Stand-by Attendant must be equipped with an air horn or some other means of communication to summon help in the event of an emergency. The communication device shall be used only in an emergency.
 - 2.1.12. All personnel inside the confined space must exit upon command of the Stand-by Attendant
 - 2.1.13. The Stand-by Attendant is responsible for maintaining a sign-in/sign-out log on all persons entering and exiting the confined space. The roster must be turned in to Supervisor at the end of each shift.
 - 2.1.14. The Stand-by Attendant will be provided with the same equipment as those entering into the confined space.
 - 2.1.15. Stand-by Attendant will ensure that no unauthorized personnel enter the confined space.
 - 2.1.16. If an emergency occurs inside the confined space, the Stand-by Attendant will summon additional help, but will not enter until help has arrived and it is necessary to enter. The Stand-by Attendant should enter only if he/she has been trained in emergency rescue techniques.
 - 2.1.17. A Stand-by Attendant will not leave his/her station for any reason while personnel are inside the confined space, unless relieved by another Stand-by Attendant.
 - 2.1.18. Each Stand-by Attendant must realize the importance of his/her duties.
 - 2.1.19. Employees/Entrants - Employees/Entrants must know and be able to recognize the hazards associated with confined spaces and ensure these hazards are properly addressed according to this policy and the training received.
 - 2.1.20. Employees/Entrants must know how to use all personal protective equipment involved with the entry.
 - 2.1.21. Employees/Entrants must be able to communicate with Stand-by Attendants. They must alert Stand-by attendants to the warning signs or existence of a hazardous condition and exit as quickly as possible if the need arises.
 - 2.1.22. Employees/Entrants shall have access to initial/periodic atmospheric test results.
 - 2.1.23. Employees/Entrants shall have the ability to observe pre-entry or subsequent testing of the confined space.

3. DEFINITIONS

Confined Space	<p>A space that:</p> <ul style="list-style-type: none"> ▪ Is large enough and so configured that an employee can bodily enter and perform assigned work ▪ Has limited or restricted means for entry or exit (for example; tanks, vessels, silos, storage bins, hoppers, vaults and pits or spaces that may have limited means of entry). ▪ Is not designed for continuous employee occupancy
Confined Space Entry Permit	The form provided by the Company (Attachment 1) to allow and control entry into a confined space with required information completely filled out as required by this procedure.
Emergency	Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the confined space that could endanger Entrants.
Entrant (Authorized Entrant)	An employee who is authorized to enter a confined space.
Entry	The action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the Entrant's body breaks the plane of an opening into the space.
Entry Supervisor	The person responsible for determining if acceptable entry conditions are present in a confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this procedure.
Stand-by Attendant	An employee stationed outside the confined space, who monitors the Entrants, and who performs all Stand-by Attendant responsibilities assigned by this procedure.

4. PROCEDURE

- 4.1. Coordination of Confined Space Entry Activities
- 4.2. Entry Supervisors and all employees who may be required to enter confined spaces shall review this instruction to ensure compliance with all applicable paragraphs.
- 4.3. Supervision over the area in which confined spaces to be entered are located and supervision responsible for other work conducted in such areas shall coordinate and regulate operations of their organizations in a manner which reduce hazards to personnel entering such vessels. No deviations from the safety requirements specified in these instructions will be permitted.
- 4.4. Procedures for Confined Space Entry
- 4.5. Prior to personnel entering any confined space that falls within the description in the above scope, a Confined Space Entry Permit (Attachment) must be properly executed by the Supervisor of the personnel entering the confined space and the MAPP Superintendent.
- 4.6. When there is doubt as to whether or not a particular location is covered by the above

- scope, the Corporate Health, Safety and Environment Department is to be consulted.
- 4.7. The executed Confined Space Entry Permit is valid only for one shift, and for the specified work, location and time period indicated on the permit.
 - 4.8. The Confined Space Entry Permit must be posted near the entry point of the confined space.
 - 4.9. A secondary method of exit should be considered during the planning stage in order to execute a quick, safe exit, should an emergency situation arise during occupancy of the confined space.
 - 4.10. If the confined space is equipped with a grounding cable, a firm mechanical joint should be verified.
 - 4.11. If lighting and power requirements cannot be met by the use of battery lights and pneumatic equipment, reduced voltage at a maximum of 12 volts must be used. Higher voltages may be used only with a ground fault circuit interrupter (GFCI). The ground fault circuit interrupter, transformer and disconnects must be located outside of the confined space.
 - 4.12. All persons entering the confined space, stand-by attendants and rescue personnel shall be instructed in the hazards involved, the precautions to take, the use of protective and emergency equipment and the use of rescue equipment.
 - 4.13. At least one Stand-by Attendant must be at each point being used to enter the confined space. The Stand-by Attendant must have an air horn or some other reliable method for summoning additional assistance. The Stand-by Attendants primary responsibility is to be attentive to the personnel inside the confined space. Each Stand-by Attendant must be trained in accordance with this policy.
 - 4.14. Entry into a confined space, which contains or will likely develop into an IDLH atmosphere, must have stand-by rescuers present during the entry.
 - 4.15. All confined space shall be protected from external factors such as pedestrians, vehicles, and equipment by the use of red do not enter barricades around the confined space. It is also the responsibility of the CSA to only allow authorized personnel into the area of the confined space.
 - 4.16. Upon completion of work, the Supervisor and Stand-by Attendant shall close out the permit by verifying that all personnel have exited the space and sign off of the entry log.
 - 4.17. Isolation Requirements
 - 4.18. All energy sources such as pipelines, electrical services, agitators and any other services leading to the confined space must be physically disconnected, blanked off, valved off and locked, tagged and tried prior to personnel entering.
 - 4.19. Radioactive sources must be shielded or removed.
 - 4.20. Environmental Requirements
 - 4.21. Review of the confined space and its previous contents must be made by the Client Representative, MAPP Superintendent and the Supervisor responsible for the work to ascertain that the necessary ventilation, protective clothing, respiratory equipment, emergency stand-by equipment and fire prevention precautions have been specified and provided.

- 4.22. If the confined space has previously been in use, cleaning and decontamination must be performed prior to personnel entering.
- 4.23. Appropriate tests of the atmosphere shall be made before entering the confined space. In all cases an oxygen and flammability test will be performed. The person performing the test, who will initial the permit, will record the test results on the Confined Space Entry Permit. The atmosphere inside the confined space must meet the following conditions and be tested with a calibrated direct reading instrument in the following order:
 - 4.23.1. . Oxygen (O₂) - Atmospheric oxygen content must be between 19.5% and 23.5%.
 - 4.23.2. . Flammables - Flammable gases and vapors must be less than 10 % of the LFL.
 - 4.23.3. . Radioactivity - Not to exceed State or Federal regulatory limits.
- 4.24. If work being performed inside the confined space could generate any toxic or flammable vapors or produce any oxygen deficient atmosphere, testing should be done continuously while work is being performed. Any space shall be re-tested upon request or changed conditions.
- 4.25. Burning and Welding
- 4.26. Burning and welding in confined space entails unusual hazards and a detailed analysis shall be made of each specific case to insure safe performance of the work.
- 4.27. When burning, welding or heating operations are required in a confined space, either a mechanical method of ventilation (such as a blower) or local exhaust ventilation method (such as an exhaust hood) must be provided to ensure adequate ventilation. When sufficient ventilation cannot be obtained without blocking the means of access to the confined space, employees in the confined space shall be protected by air supplied respiratory equipment.
- 4.28. When burning or welding is required in any confined space, the gas cylinders and welding machines shall be located outside. Hose connections shall be checked for leakage prior to entry into confined spaces. Hoses shall be removed from the confined space at the end of work, during lunch periods, breaks or whenever all personnel leave the confined space.
- 4.29. Emergency Alarms
 - 4.29.1. The Confined Space Entry Permit will be automatically canceled in the event that a major alarm, gas/vapor release, area fire alarm, or site emergency is sounded, with the exception of a test alarm. Personnel inside the confined space must exit and follow emergency procedures. When the all-clear signal is sounded, the Confined Space Entry Permit can be reinstated or reissued after atmospheric tests are retaken and noted on the permit.
- 4.30. Rescue
 - 4.30.1. Each entrant must wear a full body harness with rescue type lanyard when entering a confined space.
 - 4.30.2. Where access is by man way, manhole, or other tight opening, an extrication device may be required to expedite rescue.

- 4.30.3. Client shall provide the rescue services for all entries unless otherwise noted. Any outside service used for rescue purposes shall have the ability to review the space and provide a rescue plan.
- 4.30.4. Only those persons trained in proper rescue techniques are allowed to perform rescue duties in a confined space. All first aid responders may provide first aid treatment OUTSIDE of the space and in a safe area. All IDLH situations shall have rescue personnel on standby at the site.
- 4.31. Review
 - 4.31.1. The permit confined space program shall be reviewed at least annually, utilizing retained copies of permits for verification of effectiveness.
- 4.32. Training
 - 4.32.1. All confined space Entrants, Stand-by Attendants, and Entry Supervisors must be trained in the hazards of confined space work, the permit system being used and their specific duties and responsibilities as part of the entry team.
 - 4.32.2. Training must be completed before any confined space duties are assigned, when there is change in assigned duties, or when there is a change that presents a hazard about which employees have not been trained.
 - 4.32.3. Re-training shall be provided whenever there are deviations from the confined space entry procedures or there are inadequacies in the employee's knowledge or use of these procedures.
 - 4.32.4. Documentation of training must be maintained including date of training, trainee signature, trainer signature, and material trained upon.



Confined Space Entry Permit

New & Renovated Commercial Construction Projects	
Name and Location of Confined Space:	
Description of work to be performed:	
Craft/Group to enter:	
Date of Entry:	
Previous contents of confined space:	
Any Hazardous Materials or fumes to be generated by work:	

VESSEL OR SPACE PREPARATION REQUIREMENTS					
	Yes	No	N/A	Supervisor (Initial)	Safety Rep (Initial)
Drain, Flush, Clean					
Lock, Tag and Try:					
Disconnect Lines:					
Blank Lines:					
Open Manholes:					
Forced Ventilation:					
Agitator out of Service:					
Radioactive sources removed or shielded:					
Ground Cable Meggered					
GFCI on Voltage >12V					
Lifeline and harness available for entrance:					
30 min Air Pack or air supplied respirator available for entrance:					

ATMOSPHERIC ANALYSIS

	Results	(Initial) Person Testing
Oxygen (O2 19.5% min.)		
Carbon Monoxide (CO2):		
Carbon Dioxide (CO2):		
Explosivity		
Other - specify:		



Authorized and Trained Entrants:	Stand-by Person(s):
	Rescue Provided by:

Approvals:

MAPP Superintendent _____

HSE Representative (if applicable) _____

Client Representative _____

Other _____



Confined Space Authorized Entrants Sign-in/Sign-out Log

Stand-By Attendant Name: _____ Date _____

Project#: _____ Project Name: _____

NAME	Permit Authorized Entrant?		Time In	Time Out	Time In	Time Out	Time In	Time Out
	Yes	No						