



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:
PRV Stations

ID #
N/A

LOCATION:
Citywide (11)

EP # 3

DATE: November 2012

HAZARDOUS ATMOSPHERIC RATING: **Moderate**

SCOPE OF WORK (From Hazard Assessment)

This Hazard Assessment (HA) refers to entry for the purpose of inspection, regular maintenance on piping and PRV's (i.e., flushing) and minor repairs of PRV's with manual tools. Rare and minor patchwork repairs to concrete walls may occur with manual tools and ready mix cement.

Hot work and other atmospheric contaminant generating activities are not included in this Hazard Assessment.

SUMMARY OF POTENTIAL HAZARDS

	Hazards	Undisturbed Space	Work Tasks	Additional Comments
ATMOSPHERE	Oxygen (O ₂) Deficiency	Yes	No	See Hazard Assessment for additional details.
	O ₂ Enrichment	No	No	
	Chemical	Yes	No	
	Biological Hazards	Yes	No	
	Fire/Explosion	No	No	
SAFETY HAZARDS	Structural	No	No	
	Engulfment	Yes	No	
	Entrapment	No	No	
	Electrical	Yes	No	
	Access/egress	No	No	
	Fall	Yes	No	
	Slip/Trip	Yes	Yes	
	Visibility/Light Level	Yes	No	
	Baffles/internal arrangement	No	No	
	Floor openings in space	No	No	
PHYSICAL AGENTS	Noise/Vibration	No	No	
	Temperature	Yes	No	
	Non/Ionizing Radiation	No	No	
	Laser	No	No	
OTHERS	Ingestion/Skin Contact	No	Yes	
	Mechanical	Yes	No	
	Traffic Hazard	Yes	No	
	Hydraulic/ Pneumatic	No	No	

COMPLETED
BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC,
November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH,
CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Dave Cooper

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:
PRV Stations

ID #
N/A

LOCATION:
Citywide (11)

EP # 3

DATE: November 2012

HAZARDOUS ATMOSPHERIC RATING: **Moderate**

Topics	No.	Tasks/ Equipment Required
Prior to Entry		
Equipment Required	1.	<p>Ensure the following is available:</p> <ul style="list-style-type: none"> Pick up gas detector (with pump). Gas detector must be bump tested and/or calibrated prior to use and have the following sensors: <ul style="list-style-type: none"> oxygen (O₂), flammable/combustibles (LEL), carbon monoxide (CO), and hydrogen sulphide (H₂S) <p>(City standard)</p> <ul style="list-style-type: none"> Blower with a minimum of 360 cfm Two-way radio and/or cellular telephone (for Standby Person and Entry Supervisor) Sucker truck/vacuum truck (if required) Portable lighting (flashlight or portable lighting with GFCI) Fall protection (harness and lifeline) Portable ladder (if fixed ladder condition is poor) Primary barriers/pylons
	2.	<p>General PPE:</p> <ul style="list-style-type: none"> Coveralls Safety boots Work gloves Hard hat Safety glasses with side shields <p>Concrete wall repair:</p> <ul style="list-style-type: none"> Wear General PPE <p>If mixing large amounts of cement product is necessary (outside the space), monogoggles and a disposable dust mask are recommended (e.g., N95 type).</p>
	3.	<p>Rescue equipment:</p> <ul style="list-style-type: none"> Harness (worn) Lifeline (attached at all times) Tripod Winch
Entry Permit/Gas Testing Log	4.	Complete and post the Confined Space Entry Permit at the entrance. (NOTE: Update the Permit accordingly.)
	5.	Entry Supervisor to sign Confined Space Entry Permit once all equipment is ready to be installed and observe initial entry.
Space Preparation	6.	Erect primary barriers around opening to the space to isolate space from vehicular and pedestrian traffic.

COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Dave Cooper

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:
PRV Stations

ID #
N/A

LOCATION:
Citywide (11)

EP # 3

DATE: November 2012

HAZARDOUS ATMOSPHERIC RATING: **Moderate**

Topics	No.	Tasks/ Equipment Required
	7.	If required, rinse space prior to entry if space contains large amounts of sludge or bacteria/fungi/mould growth. Remove objects (needles/sharps) from outside the space at all times with sucker truck, if feasible.
Pre-Work Coordination	8.	If required, space must be emptied prior to entry by sucker truck.
	9.	Inspect fixed ladder condition. Use portable ladder if fixed ladder is insufficient.
	10.	Inspect all equipment for damage before use. Remove damaged equipment from service.
	11.	Standby and Entry Supervisor must have a two-way radio and/or cellular telephone.
	12.	Standby must have training in monitoring duties, initiating emergency response, operation of retrieval equipment and removal of injured victims using this equipment.
	13.	Rescue personnel must have training in first aid and CPR.
	14.	Rescue equipment must be available.
	15.	Harness and lifeline must be worn at all times.
Isolation and Lockout	16.	Space must be isolated and locked out <ul style="list-style-type: none"> Follow space specific lockout and isolation document. Document must be available on-site prior to work.
Gas Testing	17.	Persons calibrating/bump testing and operating the instrument must have appropriate training.
	18.	Test the atmosphere no more than 20 minutes prior to entry; continuously during entry and if the space is left vacant for more than 20 minutes. Record the results on the Confined Space Entry Permit every 20 minutes.
	19.	Measure gas concentrations at the top, middle and bottom of the space (using pump and tubing). <i>Remember there is a delay in response as air is pumped into the instrument (approx. 1 sec per foot) and there is additional sensor response time.</i>
	20.	Allowable gas concentrations (before and during entry): Entry and work in the space can occur only if the following conditions are met: <ul style="list-style-type: none"> O₂: 19.5 – 23 % LEL: ≤ 10 % CO: ≤ 25 ppm H₂S: ≤ 10 ppm If these criteria cannot be met then the space must be evacuated. NOTE: The space cannot be re-entered until levels are brought within the acceptable concentrations listed above (adjust ventilation, re-calibrate gas tester etc.). <i>If the problem persists contact Entry Supervisor for further instructions, see Entry</i>

COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

SOURCE: Paul Elsoff & Dave Cooper

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).



CONFINED SPACE ENTRY PROCEDURES

CONFINED SPACE NAME:
PRV Stations

ID #
N/A

LOCATION:
Citywide (11)

EP # 3

DATE: November 2012

HAZARDOUS ATMOSPHERIC RATING: **Moderate**

Topics	No.	Tasks/ Equipment Required
		<i>Permit.</i>
	21.	The entrant must wear the atmospheric testing instrument (gas detector).
Ventilation	22.	Set up blower (minimum 360 cfm) with duct through the entrance hole discharging at approx. 2 feet from bottom of the space. Air intake of blower must be positioned away from and upwind from nearby combustion exhaust. Minimum ventilation requirements are based on achieving 20 air changes per hour. Ducting may be temporarily removed to allow entrant access – replace ducting inside space immediately after entry.
	23.	Ventilation must be operating for a minimum of 20 minutes prior to entry to allow 'clean respirable air' to circulate throughout the space.
During Entry		
Gas Testing	24.	Continuous monitoring required – as above.
	25.	Record the gas testing results on the Confined Space Entry Permit at least every 20 minutes.
Ventilation	26.	Ventilation must be running during the entire entry. Ducting may be temporarily removed to allow entrant from exiting/entering– replace ducting inside space immediately after exiting/entering.
Standby Person	27.	Standby person must remain at or near the entrance to the space during the entry.
	28.	Standby person or designated traffic crew must monitor traffic in the area.
	29.	Standby must order the evacuation of the confined space if an alarm sounds.
Personal Protective Equipment (PPE)	30.	All entrants must wear General PPE (see equipment required list above).
	31.	Harness must be worn and lifeline attached at all times during entry.
Task/Additional Requirements	32.	Portable lighting (flashlight or portable light with GFCI) required. Be aware of sump/drain location and identify it (if possible) with temporary marker (pylon).
Rescue Plan	33.	To activate the emergency response, Standby Person contacts 911 if first aid is required.
	34.	Standby Person contacts the Entry Supervisor using radio/cell phone and advises them of the situation and Entry Supervisor will respond to the scene.
	35.	Ventilation can be removed temporarily to allow extraction from space since there is only one entry point.


COMPLETED BY:

Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012

SOURCE: Paul Elsoff & Dave Cooper

Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).

	CONFINED SPACE ENTRY PROCEDURES		EP # 3 DATE: November 2012	
	CONFINED SPACE NAME: PRV Stations	ID # N/A		LOCATION: Citywide (11)
	HAZARDOUS ATMOSPHERIC RATING: Moderate			

Topics	No.	Tasks/ Equipment Required
	36.	Self-rescue if possible
	37.	If self-rescue is not possible: Lifeline attached: <ul style="list-style-type: none"> Standby Person removes person from space using lifeline and winch.
After Entry Has Been Completed		
Gas Testing	38.	After the entry, record the peak, TWA, STEL, occurrence of alarms on the Confined Space Entry Permit.
	39.	Entry Supervisor to return the completed Confined Space Entry Permit to the Confined Space Program Administrator for filing (must be kept for 1 year).
Work Coordination	40.	Ensure all entrants and tools have been removed from the space and secure the opening.
Equipment	41.	Return all equipment to its proper location.
	42.	Return gas detector to the storage location.

COMPLETED BY:	Prepared by: Peter Bergholz, BSc, CIH, AMEC, November 2012	SOURCE: Paul Elsoff & Dave Cooper
	Reviewed by: Victor Leung, MSc, CIH, ROH, CRSP, AMEC, November 2012	

This Entry Procedure pertains to the activity and confined space listed above. This entry procedure is required to be reviewed within 3 years of preparation. Any change in activity requires a review of the related HA and a review of the entry procedures (especially when contaminants will be generated by an activity such as welding, radiation or chemical usage).