



# PRECISION TANK TRAINING PROGRAM

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## ABSTRACT

Our objective is to implement training that covers hazard awareness and control measures, atmospheric testing and monitoring, proper use of personal protective equipment, safe entry and exit procedures using the provided Unity Fuel Solutions Grande 68 Tank Simulator.

- This training design will assist in mitigating, monitoring, and managing new risks as they arise.
- A Unity Fuel Solutions Grande 68 above ground tank simulates conditions in a tank of the same or similar capacity and specifications to the tanks operated by Precision Tank Maintenance.
- Our training program will be in accordance with Confined Space Standards.

With employee health and safety being at the forefront of the mission, a thorough tank design and training program will be implemented to eliminate or mitigate hazards within a confined space.

## BACKGROUND

From 2011 to 2018, there has been 1,030 fatalities related to confined space. The average was 128 deaths every year. Training employees will be the only way to decrease confined space related fatalities.

## UNITY FUEL SOLUTIONS GRANDE 68 TANK SIMULATOR



<b>Capacity</b>	18,223 US Gallons
<b>Size</b>	480" x 96" x 114"
<b>Weight</b>	29,917 lbs.

## METHODS

### Entry and Exit

#### Entry Procedure:

- 1) **Communication and Planning:** Clear communication channels must float between entrants and supervisors. Potential risks, evacuation procedures, and emergency response protocols should be looked at.
- 2) **Safety Briefing:** Massive safety briefing shall exist between entrants and supervisors aimed at covering escape plans, oxygen level monitoring devices and procedures for alarming distress.
- 3) **Equipment Preparation:** Make sure equipment is in good working condition this include PPE, gas testers, and communication facilities. It is important to calibrate instruments used to detect gasses so that they give accurate results.

**Entry Execution:** Do not enter the confined space until all other steps have been taken. Monitor conditions inside the confined space area and report unsafe acts or conditions to a responsible person. Follow established work procedures.

#### Exit Procedure:

- 1) **Equipment Accountability:** All equipment used is collected together. Proper de-gowning is done where appropriate.
- 2) **Documentation:** Store records of hazards that were experienced as well as incidents happened in the confined space. Future reference will require gas levels recorded during entry into the confined space, "task performed", and any problems encountered'.
- 3) **Securing Entrances and Exits:** Lock all entries or exits so that people cannot enter without permission later. Close out entry permit correctly.

#### Post-Exit Review:

Conduct a post-entry review to evaluate practices. Lessons learned should be shared in order to improve future safe entries."

### Ventilation

- 1) **Pre-Entry Testing:** Comprehensive atmospheric testing should be done before entering the confined space to determine the presence of oxygen, combustible gases, and toxins as required by OSHA and ANSI standards.
- 2) **Control Measures:** Use mechanical ventilators and make sure all personal protective equipment (PPE) such as attachable gas detectors are in good working condition to effectively deal with hazardous situations.
- 3) **Ventilation Assessment:** Confirmations of sources of ventilation and check adequacy. Calculate Air Changes per Hour (ACH) Required using  $ACH = (CFM \div \text{Volume of Confined Space}) \times 60$ . Establish Cubic Feet per Minute (CFM) Required using  $CFM = \text{Volume of Confined Space} \times \text{Desired ACH} \div 60$ .
- 4) **Mitigation Protocols:** Volume multiplied by desired ACH gives ventilation rates that will reduce vapor concentration hence safer working environments. These measures are vital for worker safety, especially within fuel tanks since there might be potential risks associated with them being enclosed structures.

### Hazardous Material Exposure

- 1) **Assessment:** Evaluate tank condition and history before work. Identify chemicals previously contained and potential hazards.
- 2) **Training:** Ensure that all entrants accomplish Hazardous Materials handling training, laying emphasis on chemicals often seen in tanks.
- 3) **Safety Data Sheets:** Access records for the tank as well as stored substances. Understand how tanks are designed and control hazardous materials with focus on commonly encountered ones.
- 4) **Personal Protective Equipment (PPE):**
  - o Respiratory Protection: Use equipment effective against fuel vapor.
  - o Eye Protection: Wear goggles to prevent eye irritation or vision impairment due to chemicals.
  - o Hand and Body Protection: Do not touch directly, since this may lead to burns or irritation caused by chemical exposure.



## CONCLUSION

The simulator serves as a dynamic tool for risk mitigation and employee education. Through this program, hazards such as ventilation challenges, entrapment risks, and fall hazards are addressed systematically. By emphasizing the correct usage of personal protective equipment (PPE) and imparting thorough training, our initiative significantly reduces the likelihood of incidents within confined spaces.

The benefits of this tailored training program extend beyond compliance with standards, enhancing employee safety and operational efficiency. Precision Tank Operations ensures a safer working environment for all personnel involved in confined space entry activities.

## REFERENCES

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