



Engineering Services

Our engineering staff has process experience in propellant manufacturing, storage and distribution, contract packaging, chemical manufacturing, foam blowing, and plastics manufacturing facilities. We design, build, and operate aerosol propellant, LP gas storage and handling facilities, and advanced analytical laboratories. We provide technical and analytical assistance, and engineer and construct projects for customers throughout the world.

Engineering services include:

- Engineering Design
- Engineering Drafting (CAD), (3D Process Design)
- Turn-Key Construction Projects
- Propellant Storage, Unloading, and Supply Systems
- Propellant Recovery Systems
- Solvent Storage, Unloading, and Supply Systems
- Compounding rooms
- Commissioning of systems
- Decommissioning of systems
- Conversion of systems
- Decontamination of systems
- Safety Audits
- Safety and Operational Training
- Regulatory Compliance Programs for:
 - OSHA Process Safety Management (PSM) including Process Hazard Analysis (PHA)
 - EPA Risk Management Plan (RMP)
 - OSHA Hazard Communication Standard



Propellant Storage Tanks



Manifolds - Rotary and Bulk Loading Unloading



Solvent Storage and Batch Compounding

Regulatory and Environmental Services

Our Regulatory and Environmental Services Staff are available to assist you in developing Regulatory Compliance Programs for:

- **EPA Risk Management Plan (RMP)**

If more than 10,000 lbs of a listed substance are stored on site then a Risk Management Plan (RMP) needs to be filed with the USEPA and OSHA Process Safety Management (PSM) procedures need to be in place.

Risk Management **came into effect in 1999**. If a filing was completed, renewal is required every five (5) years.

RMP contains the Worst Case Scenario that was so widely publicized. The areas surrounding certain industries had large areas of impact when a catastrophic event occurred.



• **OSHA Process Safety Management (PSM) including Process Hazard Analysis (PHA)**

- Employee Participation
- Mechanical Integrity
- Hot Work
- Incident Investigation
- Management of Change
- Prestart-up Review
- Process Hazard Analysis
- Training
- Contractors, and
- Audits

OSHA PSM requires an Internal Audit every Three Years

The internal audit is verification that the PSM program is current, utilized, and understood. Several areas are covered by the audit:

- The PSM procedures are audited for completeness and content
- Documentation of mechanical integrity
- Training is current, complete, and documented for employees and contractors
- Plant changes are completely complete, including Process Hazard Analysis
- Any incidents are documented and actions taken to resolve any issues noted

All employees are protected under the OSHA General Duty Clause even if the 10,000 lb criterion is not satisfied for the RMP. Employers are responsible for protection of their employees.

• **OSHA Hazard Communication Standard**

Training must be completed for employees that are new to the job, transferred to a new job, and when job performance shows a need for review.

Plant and process changes require a training review. If retraining is completed on a yearly basis, all line changes, new equipment, and procedural changes can be incorporated into the retraining.

OSHA Training Review Topics for each employee	Reference	Required Review
HAZWOPER	29 CFR 1910.120	Yearly
Respiratory Protection	29 CFR 1910.134	Yearly
Blood Borne Pathogens	29 CFR 1910.1030	Yearly
Hearing Conservation	29 CFR 1910.95	Yearly
Basic Confined Space Rescue	29 CFR 1910.146	Yearly
Fire Training - Extinguisher	29 CFR 1910.157	Yearly
Fork Truck	29 CFR 1910.178	Every 3 years
Recommended Review		
Lockout/Tagout	29 CFR 1910.147	Yearly
Confined Space	29 CFR 1910.146	Yearly
Hot Work/Cold Work	29 CFR 1910.252	Yearly
Hazard Communication	29 CFR 1910.1200	Yearly
PPE	29 CFR 1910.132	Yearly
Fall Protection	29 CFR 1910.67	Yearly
Emergency Action Plans	29 CFR 1910.38	Yearly

• **Basic Propellant Training, and Tank Farm, Operator, Maintenance Training**

Basic propellant properties, hazards, emergency situations, normal/day-to-day procedures, breakdown procedures, and at-risk behaviors are training issues. Training improves plant operations and profits via information exchanged with the employees.

• **Fire Safety Analysis**

NFPA 58 required a Fire Safety Analysis to be completed by 2004. This is completed on a tank farm installation both new and existing.

• **Fire Training for the local fire department**

Get the department comfortable to come onto your site and mitigate a fire rather than setting up a post a mile away and waiting for the fire to go out.

If the fire department is not comfortable with your plant and products, they will act conservatively and the plant becomes a salvage operation and an insurance claim.



Optical Gas Imaging Thermography



Many industrial gases and chemical compounds are invisible to the naked eye. In a complex industrial facility there may be many thousands of potential leak paths. Diversified CPC now offers our FLIR Optical Gas Imaging Thermography services!

The FLIR Gas Detection cameras are infrared cameras which are able to visualize gas by utilizing the physics of fugitive gas leaks. The camera produces a full picture of the scanned area and leaks appear as smoke on the camera's viewfinder or LCD, allowing the user to see fugitive gas emissions. The image is viewed in real time and can be recorded in the camera for easy archiving.

The key success factors for businesses today are safety, efficiency and profitability. When carrying out maintenance, it is of vital importance that maintenance engineers are able to obtain as complete a picture as possible of the condition of the plant.

Using the Gas Detection camera allows us to examine many potential leaks sources in a short time and from a distance. Conventional leak detection methods such as a Volatile Organic Compound meter (or sniffer) mean that the operator must visit and test each potential leak site. Each item must therefore be accessible or made accessible to be tested. A full survey by this method would clearly be significantly longer and more expensive than with the gas detection camera.

 <p>Infrared Image of Petrochemical Facility.</p>	<p>Environmental Protection! Tracing Gas Leaks! High Temp Ind. Apps! Enhanced Site Safety! Spot Hard to Find Leaks!</p>	 <p>Image of Vapors leaking when filling up your tank.</p>
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Contact us today and find out more about Diversified CPC's Optical Gas Imaging Thermography Services!