



GENERAL DYNAMICS
NASSCO

The NASSCO Tidepool

A Collection of Environmental News from the Shipyard and Our Community

Environmental Engineering Mission Statement

General Dynamics NASSCO Environmental Engineering is dedicated to maintaining an Environmental Management System that continually strives to go beyond regulatory compliance.

General Dynamics NASSCO Environmental Engineering is committed to conducting all operations in a manner that safeguards the health and safety of all employees and the public, preserves natural resources, and protects the environment. This commitment to protecting the air, water, and land is carried out through energy conservation initiatives, recycling programs, and on-going process improvements.

Air Quality Corner – Part 3

By Kacey Christie, Environmental Engineering Specialist



Shipyard processes and equipment produce air emissions that can affect the environment. NASSCO is committed to continuously evaluating our operations to identify Pollution Prevention opportunities.

Best Management Practices (BMP's) are cost effective means of improving air quality. BMP's are low cost, low technology, common sense measures that result in improved housekeeping and the prevention of air pollution. Benefits include improved employee health, safety, environmental awareness and cost savings via waste minimization.

Air Quality BMP's – Painting

Surface coating involves surface preparation, coating preparation, coating application, curing, and equipment clean-up. It is performed with a variety of chemical and mechanical methods including: solvent degreasing, alkaline/caustic cleaning, grinding, sanding and abrasive grit blasting.

Coating preparation involves mixing paints and catalysts. Coatings are applied to products by brushing, rolling, spraying, or dipping. Finally, organic solvents are generally used for clean-up operations for spray guns, lines, mixers, containers and brushes.

Coatings are made up of solvents and solid pigments. The solvent produces the majority of hazardous air pollutants released from shipyards. Emissions occur during evaporation of the paint solvent and can happen during storage, surface preparation, application and clean-up. The pigment portion of coating systems can contain toxic metals and resins such as zinc, chromium, crystalline silica, copper, lead and epoxy.

Releases of coating pigments are a function of paint transfer efficiency and the quantity of airborne paint that becomes uncontrolled and carried off-site by wind. In order to keep air clean, the amounts of particulate emissions from painting operations must be reduced by following these environmental practices:

Good Environmental Practices for Painting Operations:

- Ensure proper mixing by following the manufacturer's instructions.
- Do not allow paint thinning of any kind.
- Maintain accurate paint and solvent usage record keeping.
- Keep work and hazardous materials/wastes storage areas neat/orderly in order to minimize accidental releases.
- Keep lids on liquid volatile material containers when not directly in use.
- Practice clean-up procedures to ensure spilled solvents or paints are cleaned-up immediately.

Increase Transfer and Solid Control Efficiency and Minimize Waste

- Minimize over-spray through training on perpendicular painting techniques.
- Small parts should be painted with spray patterns appropriate for the size of the part.
- Rack parts in a manner that allows over-spray to land and adhere to other parts.
- Reduce spray-gun air pressure to maximize transfer efficiency and reduce over-spray.
- Minimize painting in cross-draft wind, especially on large flat surface areas where wind velocities can severely reduce transfer efficiency.
- Install and utilize containment screening (tarps) to contain paint over-spray.
- Measure paint job sizes to mix only the proper amounts of paint necessary in order to minimize emissions & hazardous waste.
- Paint in enclosed areas to contain paint over-spray whenever possible.

Material & Waste Storage Improvements

- Store solvent contaminated rags, cloths, materials in a covered container.
- Segregate paint, solvent, and rag waste and store in separate containers.
- Equip drums with tight fitting lids and keep closed when not in use.
- Use funnels when filling, replace cap, and latch the funnel once filling is complete.

Solvent Surface Preparation

- Used solvent-wipe rags should be disposed immediately in a covered container.
- Apply volatile solvents directly to the rag and avoid spraying solvent directly on the surface.
- Whenever possible avoid the use of VOCs for surface preparation (i.e. aqueous cleaners)
- Investigate using non-VOC surface preparation techniques (i.e. grinding, sanding, blasting, steam cleaning).

Self-Inspection Procedures for Surface Coating Operations

- Develop a self-inspection program to maintain the following:
 - Proper storage (cover paint and solvent containers)
 - Complete recordkeeping
 - Product labels (easy access and legible)
 - Equipment is in good operational condition (no leaks or poor spray patterns)
 - Secondary containment kept free of spills
 - Spill clean-up and response equipment readily available in each HazMat storage area.
 - Proper waste storage and segregation through the shipyard.
 - Containment curtains and screening are placed in critical areas.

Future Emission Reductions

- Where practicable, install a thermal oxidizer
- Investigate more efficient transfer efficiency equipment such as airless, electrostatic spraying, roll-coating, dip-coating, and brush-coating).



APCD Quarterly Inspection Audit Results

Air Pollution Control District inspectors Peter Crayne and Willia Jacques conducted a Quarterly Inspection of NASSCO on Oct. 27.

This unannounced inspection focused on subcontractor operations in the shipyard. Inspectors reviewed the asbestos removal operations of the M-Lane demolition project by Marathon Construction. They also investigated subcontractor blasting and painting repair operations being conducted in the floating dry dock by Naval Coatings, Inc. All of the subcontractor's permits, activities, and recordkeeping were found to be in compliance with APCD rules and regulations.

In addition, NASSCO blasting and painting operations on Prime Line #1 were also investigated. There were no violations found by the inspectors. This marked the 6th inspection in a row that an inspector hasn't found a violation.

A special thanks to the following Designated Air Quality Coordinators who assisted with this inspection:

- Mary Whitney, Facility Subcontractor Operations
- Marc Metzler and Juan Saludes, Repair Subcontractor Operations
- Dave Samudio, NASSCO Blast & Paint Operations