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**NAS NORTH ISLAND - NAVY REGION SOUTHWEST**  
**NAVY ENVIRONMENTAL LEADERSHIP PROGRAM**

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**POLLUTION PREVENTION****POWDER COATING****LEAD ACTIVITY**

Naval Air Station (NAS) North Island

**STATUS**

Active

**MISSION**

Reduce hazardous waste disposal and air emissions from painting processes

**REQUIREMENT**

The Navy operates many paint booths for painting ground support equipment. A cost-effective method to reduce volatile organic compound (VOC) emissions is required to reduce the impact on local air quality. A successful technology also can be exported to other Navy and Department of Defense (DoD) activities operating similar paint booths.

**DESCRIPTION**

Powder coating consists of applying paint electrostatically by grounding the part to be painted and spraying electrically charged paint powder onto it. Surface preparation is required for optimal adhesion of the powder to the part. After powder coating, the painted part is oven cured to melt the paint surface as the electrical ground is maintained. This technology can be used in processes that paint small parts to tow tractor frames. Typical shops that can use this technology include automotive and aircraft parts painting, ship part painting, support equipment parts painting, and facilities painting.

The objective of implementing the powder coating process at NAS North Island is to substitute the conventional VOC-producing polyurethane topcoats with the powder coating to reduce VOC emissions on the base. NAS North Island began testing the powder coating system on small parts using a small booth and oven. A full-scale facility is currently under construction and will include the application equipment, a booth enclosure, and an oven. Site preparation for the facility was initiated by the Public Works Center (PWC) and cost approximately \$150,000. The cost covered both the facility and the utilities required to conduct the powder coating process. Naval Air Weapons Center (NAWC) Lakehurst is providing engineering support for the project as well as the equipment for the facility. It is anticipated that the facility will be completed by March 1999 and will be used to paint aviation and weapon ground support equipment. Shore Intermediate Maintenance Activity (SIMA) has been using the powder

coating system to paint removable components. The system provides corrosion control for the components.

**BENEFITS**

- Reduces air emission control equipment requirements
- No air permit is required as VOC emissions are less than 10 percent as required by the San Diego Air Pollution Control District (APCD)
- Reduces application time
- Reduces painting frequency by creating a superior finish
- Reduces use and disposal of solvents and paints
- Eliminates worker exposure to harmful paints and solvents

**ACCOMPLISHMENTS/CURRENT STATUS**

Date	Activity
DEC 1998	Site preparation for full-scale facility
MAR 1999	Facility complete

**FUTURE PLAN OF ACTION & MILESTONES**

Date	Activity
Ongoing	Continue to investigate other commands to export the technology

**COLLABORATION/TECHNOLOGY TRANSFER**

The powder coating technology could be used at most Navy sites to replace conventional VOC-containing paints.

**BIBLIOGRAPHY**

None Available

**RELATED GOVERNMENT INTERNET SITES**

None available

**RELATED NAVY GUIDEBOOK REQUIREMENTS**

- 01005 VOC and PMO Emission Control on Paint Spray Booths

*UPDATED: 01/23/02*