

NAS NORTH ISLAND - NAVY REGION SOUTHWEST NAVY ENVIRONMENTAL LEADERSHIP PROGRAM

POLLUTION PREVENTION

ELECTRIC VEHICLES - S-10 PICKUPS

LEAD ACTIVITY

Naval Air Station (NAS) North Island

STATUS

Complete

MISSION

Reduce air emissions by replacing gasoline and diesel vehicles with electric vehicles

REQUIREMENT

Fuel consumption and air emissions are two major concerns regarding vehicle use on Navy bases. In order to reduce fuel consumption and air emissions, the Navy requested that alternative-fuel vehicles be introduced to the fleet.

DESCRIPTION

NAS North Island began integrating zero emissions alternative-fueled-vehicles (ZEV) in 1993 in order to comply with the goals of the Clean Air Act. In 1997, 10 Chevrolet S-10 electric pickup trucks were added to the existing fleet of 3 electric vans, 5 electric carts, and more than 100 electric utility vehicles. The trucks are used for interbase travel between NAS North Island, Naval Station San Diego, and Commander Naval Base (COMNAVBASE) San Diego.



S-10 Electric Vehicle Fleet

The ZEV project provides NAS North Island's fleet with low or zero-emission vehicles. The pickups are clean burning, as they produce no air emissions. However, they do require an overnight battery charge. The batteries are maintenance free. The electric vehicles have an average cost of approximately 60 percent less per mile over gasoline-powered vehicles. The S-10 electric pickup truck can cruise for approximately 60 miles at a constant speed of 45 miles per hour (mph) or for 40 miles for stop-and-go driving.

In July 1997, 10 exterior, inductive-charging stations were installed at the following locations: Staff Civil Engineer (2 vehicles), Aircraft Intermediate Maintenance Department (AIMD) Airframes, Operations Department, HS-10 Warhawks, Supply Department/Galley, Naval Aviation Depot (NADEP) Environmental Department,

COMNAVBASE San Diego, Public Works Center (PWC) Zone 1, and PWC Transportation. These locations coincide with the S-10 electric vehicle assigned to each of these locations. Costs for installation, including the cost of each charging station (\$3,300), trenching, labor, equipment, and meters totaled \$80,000. From September 1997 to September 1998, the 10 S-10 electric vehicles logged over 23,000 miles and used over 14,000 kilowatt-hours (kWhr).

NAS North Island is experiencing some problems associated with this program. Initially, it was to be a one-to-one substitution; an electric vehicle would replace a fossil fuel-burning vehicle. However, due to the unreliability of the electric trucks, this one-for-one exchange is not yet possible. At any one time, up to three electric vehicles in the fleet may be non-operational. The problems, related to issues such as vehicle recharging and vehicle computer systems, have all been associated with the electric drive train. In addition, there have been problems with the charging stations. Problems with the electric S-10 pickup trucks are brought to the attention of PWC Transportation maintenance department at NAS North Island, which has two mechanics trained to handle electric vehicle problems. When a problem is beyond the scope of these mechanics, NAS North Island takes the vehicle to City Chevrolet in San Diego, where the vehicles are serviced under warranty. The charging stations are also under warranty, although the manufacturer is not always able to remedy problems in a timely manner.



S-10 Recharging Station

Monthly usage data are being collected to evaluate how the pickups are being used. In addition, surveys of users and mechanics will be conducted.

BENEFITS

- Electric vehicles are economical to operate because electricity costs much less than petroleum fuel on a per mile basis
- The electric vehicles are much quieter than gasoline-powered vehicles
- Since the vehicles produce no emissions, the total air emissions associated with base activities are reduced

ACCOMPLISHMENTS/CURRENT STATUS

Date	Activity
JUN 1997	Ten Chevrolet S-10 pickups acquired by NAS North Island
JUL 1997	Ten exterior charging stations installed
JAN 1999	Conducted user and mechanic surveys
APR 1999	Prepared plans to expand NELP Electric Vehicle Program

FUTURE PLAN OF ACTION & MILESTONES

Not Applicable

COLLABORATION/TECHNOLOGY TRANSFER

NAS North Island procured the electric vehicles from the General Services Administration.

BIBLIOGRAPHY

- NELP Bulletin, June 1998.

RELATED GOVERNMENT INTERNET SITES

[DOE Office of Transportation Technologies - Electric Vehicle Program](#)

[Clean Cities](#)

[GSA Vehicle Acquisition & Leasing Services](#)

[EV World](#)

[DOE Idaho National Engineering & Environmental Laboratory - Electric Vehicle Field Operations Program](#)

RELATED NAVY GUIDEBOOK REQUIREMENTS

None available

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