



Navy Region Center, Singapore (NRCS) is located on the island nation of the Republic of Singapore (ROS) at the southern tip of the Malaysian Peninsula, one degree north of the Equator. The mission of NRCS is to provide Fleet liaison between the host nation and naval, joint, or coalition military units conducting business in Singapore. NRCS provides facilities management in one of the most dynamic theaters and directly supports Pacific Command (PACOM) regional engagement and security plans, Forward Deployed Logistics Task Force Commander (CLWP/CTF-73). Including regional assignments, NRCS supports a total of 148 military members, 243 civilians, and 343 family members in an area covering 105 acres.

NRCS operates mainly in Sembawang and has regional responsibilities in Paya Lebar Air Base and Changi Naval Base. NRCS provides shore-side and administrative support to 22 military tenants:

- Commander, Logistics Group, Western Pacific
- Military Sealift Command (MSC), Sealift Logistics Command, Far East
- Naval Supply (NAVSUP), Fleet Logistics Center Site Singapore
- Navy Criminal Investigative Service, Greater Southeast Asia Field Office
- Naval Meteorology & Oceanographic Command, Far East Regional Office
- MSC Ship Support Unit, Singapore
- Special Boat Team Maintenance Facility
- Defense Contract Management Agency
- U. S. Coast Guard, Far East Detachment
- 497th Combat Training Squadron
- Naval Medical Research Unit 2 (NAMRU)
- Naval Computer and Telecommunications Area Master Station, Singapore
- Navy Exchange Singapore
- Defense Logistics Agency - Energy
- Naval Facilities Engineering Command (NAVFAC) Far East, Singapore
- Special Operations Command Logistics Support Facility
- Air Mobility Squadron Detachment 2
- Customer Service Detachment Singapore
- Western Pacific Veterinary Command, Detachment Singapore
- Surface Deployment and Distribution Command
- Navy Federal Credit Union
- U. S. Embassy

With the implementation of the Environmental Management System, NRCS has identified two major aspects; energy and solid waste reduction. The motto at NRCS is that environmental compliance is everyone’s responsibility with NRCS Environmental as the lead. All tenants and commands are committed to:

- (1) Implement pollution prevention and environmental management practices
- (2) Ensure adherence to applicable policies
- (3) Emphasize reduction, reuse, and recycling
- (4) Continually review, measure, evaluate and improve
- (5) Provide outreach and partnership when possible
- (6) Minimize the impact to mission readiness

NRCS Environmental Sustainment Team

The NRCS Environmental Sustainment Team consists of:

- Environmental Program Focus Areas**
- EMS
 - Radon
 - Air Quality
 - Storm Water Mgmt
 - Solid Waste
 - Water Quality
 - HAZMAT
 - Hazardous Waste
 - Asbestos
 - Wastewater
 - POL
 - Medical Waste
 - Pesticides
 - Lead Based Paint
 - SPCC
 - UST/AST
 - PCB



- One Environmental Engineer, Ms. Alice Wilson (Team Lead), NRCS (DoD Civil Service)
Primary Duties: Ensure environmental compliance of all environmental programs per Overseas Environmental Baseline Guidance Document including EO12114, Environmental Management System, Shipboard Generated Industrial Waste Program, Radon, Other Accrued Environmental Liability, Contracting Officer Representative
Received 4 Special Act Awards and 1 Performance Award and 3 Letters of Appreciation
Membership: American Civil Works Association, Association of Civil Engineering Corps
- One Environmental Specialist, Mr. Teo Kok Sing, NRCS (DoD Host Nation Civil Service)
Primary Duties: Shipboard Generated Industrial Waste Program, Environmental Management System Implementation, Data Management, Training, Quality Assurance Evaluator
Received 2 Letters of Appreciation and 1 nomination for Cash Award
- One Environmental Specialist, Mr. Latt Aung Zaw, NRCS (NAVSUP Contractor)
Primary Duties: Environmental Management System Implementation, Internal assessment, Quality Assurance Evaluator, Hazardous Material Management, Training, File Management
Received 1 Letter of Appreciation and many accolades from supported commands and tenants

Program Summary

Supporting all facets of operations ranging from permits and compliance to cradle-to-grave management of hazardous materials, NRCS Environmental Sustainment Team is committed to being a model steward in the environmental arena and provides world-class customer-focused installation and facility support to operating forces in the Pacific Area of Responsibility (AOR). Through program leadership and proactive planning efforts, the team ensures mission accomplishment and protection of natural assets and human health through implementation of the environmental management systems in everyday operations, waste management and safe drinking water. Successful execution of these potentially competing tasks requires dedicated work and innovative solutions. The main objectives of the Environmental Strategic Plan at NRCS are to integrate all regulatory requirements and compliance through:



- Promoting Pollution Prevention (P2) as an integral part of supporting mission readiness and achieving local pollution reduction goals
- Reducing environmental liabilities and protecting public health and the environment by eliminating or minimizing the volume and toxicity of hazardous substances used on the installation
- Actively implementing and evaluating innovative methods and technologies to prevent resource depletion and adverse impacts to achieve DoD Measures of Merit (MOM)
- Actively integrating Environmental Management System (EMS) principles into all work processes on a continual basis

Through the team, the Environmental Management System is integrated into all environmental processes by using established procedures to identify significant environmental aspects. The team fosters an atmosphere that capitalizes on effective teamwork to promote and advance program objectives. The team strongly emphasizes compliance with all shore-side environmental programs, and exceeds requirements where possible with the Overseas Environmental Baseline Guidance Document (OEBGD). Program areas include air, water resources management, solid and hazardous



waste management, spill prevention, asbestos management, and discharge monitoring for both U. S. and host nation requirements. Other focus areas under the team’s responsibilities include conducting natural and cultural resources reviews, overseeing pest management services, providing training to NRCS and tenant commands, overseeing P2 program initiatives, performing environmental quality assessments, and implementing applicable Executive Orders (EO) and Navy policies. All department heads, program managers participate as EMS cross-functional team members.

EMS Conformity
 Achieved EMS conformance with no major or minor discrepancies – First in the Navy in 2009

Orientation to Mission – Environmental Management System (EMS), Environmental Compliance & Waste Reduction Efforts

Working closely with NRCS and its 22 regional tenants, the environmental team ensures EMS concepts and P2 tools are integrated down to the lowest level to support military readiness and all civil work. This has been demonstrated through cooperative screening of hazardous material purchased including those that were locally purchased and transshipped throughout the region. Inspection standards and compliance evaluations have been strictly enforced and corrective actions were tracked. Operation risk management principles were applied to all work processes to further evaluate potential impacts, reduce liability, and achieve cost savings, where possible. All the processes (host as well as tenants) were documented in Standard Operating Procedures (SOP) under EMS guidance together with their operational controls.

Annual self-assessments are performed and monitored to ensure corrective actions are continuously implemented. Annual evaluations provided information and feedback in a closed loop system to the team to allow budget adjustment and best resource allocation. Root cause analysis is used to direct overall program strategic efforts and to ensure long-term sustainability of the environmental program with EMS implementation.

In the past few years, the team, in consultation with NAVFAC Pacific, fully implemented EMS starting with the gap analysis, establishing criteria and evaluating environmental aspects, setting goals and milestones, devising operational controls, to implementing an internal assessment plan. In FY10/11, the team continued to refine the system to better define the requirements for all environmental areas in the OEBGD and established EMS checklists for each building under the Command. The team was able to rank environmental aspects, update the electronic database, and complete the required

annual audit. This data was then used in EMSWeb to establish a more effective tracking system and to allow accessed by other departments/major claimants.

All renovations and new projects were reviewed by the team based on EMS and environmental requirements including how to effectively manage significant environmental aspects to achieve environmental objectives and long-term mission sustainment. All contractors were trained prior to the start of their projects to provide supporting data and means to achieve EMS goals.

The team firmly believes that the best innovative solutions involve prevention by using the environmental/waste management hierarchy: First, prevent pollution at the source; then recycle and reuse. Pollution that cannot be prevented or recycled is treated in an environmentally safe manner. In order to achieve environmental objectives and long-term mission sustainability, NRCS environmental personnel reviewed all work processes together with tenants to promote



environmental awareness and offer mitigations, where possible.

Our waste minimization initiatives undertaken in the past two years have strengthened the team's efforts in solid waste reduction and NRCS Qualified Recycling Program (QRP). In FY11, NRCS was able to achieve an impressive recycling/composting rate of nearly 363 pounds per person per year (13% higher than FY10) and met the 50% solid waste reduction goal. Last but not least, all the buyers in NAVSUP Contracting Department, credit card holders, and BOS contractors, were all trained in Affirmative Procurement. The team routinely has also had open sessions with contractors routinely to receive feedback on sustainable recommendations and greening the environment issues. This type of enthusiasm and involvement has been critical to the success of the program.

In FY10/11, the team was able to achieve the following:

- Met objectives and goals in promoting long-term operational sustainability on process review and operations
- Evaluated fully all major and minor aspects of all processes at NRCS including those of the tenants
- Developed and reaffirmed 18 work processes under EMS, 8 Standard Operating Procedures, 17 Management Procedures, and verified over 400 items in the Authorized Use List (AUL)
- Streamlined all work processes based on cost and mission benefits and tracked using the corrective action/preventive action (CA/PA) procedure to allow better oversight of all environmental aspects and deficiencies
- Completed third annual EMS review
- Integrated environmental quality assessment into all work centers and

upgraded building checklists to ensure sustainability of the program

- Transitioned data into EMSWeb in preparation for the external audit in FY12
- Reviewed and updated all required plans (per OEBGD) including overseas environmental liability and in coordination with Public Works, program managers, and real estate planners
- Achieved command savings through cost avoidance and well planned missions. All savings realized were redirected to other unfunded environmental projects to further enhance NRCS environmental efforts

Technical Merit

The team's primary objective was to go above and beyond basic compliance and remain customer-focused at all times.



The program preferentially targeted the reduction of waste and discharge, while improving overall mission and environmental safety and health performance. The NRCS Environment Program continued to be diverse and covered all applicable areas within program budget and resource allocation.

Through the team and support personnel from Public Works, major accomplishments and programs implemented on the shore side within the past 2 years include:

- No notice of violation or citation from both U. S. and local standards
- Achieved environmental compliance on one MILCON and four Special Projects ensuring sustainability. Mitigation measures were used to minimize impacts in toxics
- Through rigorous process control and monitoring, achieved a 78% solid waste reduction (2nd Top EMS Aspect). (Recycled 4,061 tons out of



5,196 tons) and 46% reduction of shore-side hazardous waste (Recycled 10 tons out of 21.61 tons)

- Recycled 28,886 lbs of lead acid batteries, printer cartridges, and used oil (an 80% increase from the previous two years)
- Achieved energy reduction (Top EMS aspect) of 39% based on 2003 baseline. This is equivalent to a savings of over 227K
- Completed 60% of heat pump installation in all Bachelor and Visitor Quarters in the Housing Area. The goal is to achieve a 66% energy efficiency with this new system
- Completed 70% of solar heaters in all Duplex and Bungalows with an anticipated 33% savings in energy efficiency
- Completed installation of all water reduction devices in wash basins and toilets in Bldg 7-4 as part of our water reduction initiatives
- Enforced Freon recovery of air handling units prior to disposal
- Diverted 8,596 lbs of aluminum cans, 71,067 lbs of scrap, and 123,199 lbs of paper from the solid waste stream resulting in avoided cost savings of \$6,200 and \$11,130 in revenue
- Completed asbestos, radon and lead based paint comprehensive survey in both Housing and Industrial areas
- Ensured installation of backflow preventors at potential cross connection points and correction of identified deficiencies to protect our water supply
- Reviewed host nation sites on national monuments and world heritage web to ensure historical and cultural compliance. Applied for applicable waivers at CNIC
- Established a Memorandum of Agreement with Public Health Environmental Laboratory for

drinking water and waste testing thereby ensuring all analyses are certified to U. S. standards

- Focused planning with the use of EO 12114, EMS principles and operational sustainability in all new projects and in developing mitigations
- Performed the full range of drinking water testing required by the OEBGD including coliform, inorganic chemicals, synthetic organics, total trihalomethanes, pesticides, lead and copper, etc. and verifying that our local water quality meets the Clean Water Act using the same U. S. protection standards for our sailors and personnel. Singapore was one of the few areas that met all standards in the last Navy wide assessment of Overseas Potable Water Systems with the Naval Inspector General Office
- Significantly increased our spill response capability. Put in service 1,080 feet of preventive booming equipment from the Oil Spilled Equipment Program. Negotiated with PSA and Royal Navy Liaison Office to enhance our joint spill response capability for U. S. Navy and MSC vessels while in port. Conducted joint exercises with British, PSA and Singapore Navy
- Continually sought process change/source reduction to enhance long-term sustainability and to prevent resource depletion and adverse impacts on natural assets and human health
- Exceeded expectations in supporting training to U. S. military and tenants and certified all appropriate personnel to ensure technical competency. This included: Facility Response Team,





Pesticide Applicator Recertification, Spill Response, Tabletop Exercise, EMS Implementation Course, Hazardous Substance Incident Response and Management, and web based modules (ECATTS)

Stakeholder Interaction

NRCS is in a very unique situation in that the command is smaller than some of the tenant commands it serves. This uniqueness allows the team to run the environmental program at a regional level while consolidating resources, maximizing program effectiveness, and overcoming many challenges with one voice. The team has created opportunities to ensure the full implementation of the Environmental Strategic Plan and drawn in stakeholder involvement through partnerships, in-house training and outreach programs to promote public involvement and 2-way communications. In FY10 and FY11, the environmental team achieved much success. Some examples follow:

- Open training opportunities for seven classes to host nation personnel and surrounding militaries in hazmat, spill response, EMS, and incident planning to allow cross-organizational partnerships
- Enhanced environmental support for all tenant commands and visiting vessels under Seventh Fleet AOR and offered briefings to ship personnel
- Used the local newspaper – Merlion, bluescreen with closed circuit television, command website as means to disseminate special bulletins and invite participations
- Provided EMS awareness to over 600 individuals and surrounding communities including co-located foreign militaries
- Used the Command Bulletin Boards and Commander, Navy Installation Command (CNIC) Gateway and

websites to post specific events, EMS information, newsletters, and Consumer Confidence Report to communities (public and in-house)

- Set up Environmental Fairs and EMS Information Booths at various events to promote awareness. Topics included environmental awareness and completed environmental projects including asbestos removal, energy projects, water testing, etc. Over 6,000 participants were at our National Day Celebration Event
- Reviewed new host nation regulations to ensure compliance with Singapore environmental regulations
- Conducted joint pesticide research project with NAMRU-2 and Singapore environmental agency
- Established community outreach services and volunteer partnership programs with host nation in special events such as Waterways Cleanup during World Water Day, Beach Cleanup

The team routinely met with local regulatory agencies and had developed great working relationships with Singapore authorities and other nations' regional offices, co-located in our area.

Transferability

A key facet of the NRCS mission is to ensure programs are well maintained and can be successfully transitioned through the change of commands and personnel. Instructions/standard operation procedures, CA/PA plan and meticulous record keeping were used by the team to conduct root cause analysis and as the primary means of communication to ensuring transferability of lessons learned. A copy of the CA/PA plan was made available by the team at the Installation's shared drive and CNIC Gateway computer network and EMSWeb. Self-



assessments and follow-up actions are fastidiously scheduled to ensure all facilities and processes are covered and reviewed at least once a year. The team also ensured continual training and act as a single point of contact for all environmental matters further enhanced effective information dissemination. From the pitfalls, the team disseminated lessons learned to local commands and regional safety so they apply appropriate

corrective actions to their programs. To further minimize adverse impacts of transient personnel, team members received cross-functional training and are required to keep up with state-of-the-art information. Last, but not least, data transfer to EMSWeb as the official repository for all environmental data was initiated by the team in Sep 2011 to ensure program success.



Other Mission Accomplishments

Over the past several years, the Environmental Sustainment Team has demonstrated exceptional achievement in merging support to mission and having a successful environmental protection program. Their dedication has strengthened NRCS relationship with the host nation. With this trust, the approval time from local regulators for our Shipboard Generated Industrial Waste (SGIW) Offload Program was reduced from two weeks to mere hours.

Excelling as a Force Multiplier

In the past two years, the team supported over 321 USN and USNS ships and processed over 444,000 lbs of shipboard

hazardous waste and biomedical waste for local disposal - over 17% volume increase from previous period. By eliminating the need to retrograde these materials to Japan or CONUS, the program enhanced personnel safety and minimized spills. More importantly, this program had greatly enhanced the combat effectiveness of CTF-73 and CTF-74 by allowing ships and submarines to properly manage waste and remain excellent stewards of the environment.

Other noteworthy milestones for the past two years include:

- NRCS had the cheapest shipboard waste disposal cost across the Navy at an average of \$0.20 per lb
- Completed an annual external audit of six treatment and disposal facilities with the Defense Logistics Agency to ensure regulatory compliance with U. S. and host nation standards
- Continued dialogue with National Environment Agency to accept used oil from Diego Garcia
- Liaised with Hong Kong (HK) Environmental Protection Department on biomedical and flammable waste
- Completed a painting SOP for HK

The success of this program could allow other surveyed ports to offload shipboard generated wastes and would greatly enhance U. S. Fleet’s capabilities in the future. Additionally, our noteworthy Fleet Support programs did not sacrifice shore compliance efforts resulting in increased regulatory scrutiny or operating expense. All the program areas were reviewed based on full life-cycle costs of the processes prior to implementation thereby ensuring continued savings into the future.