

## **INTRODUCTION**

U.S. Naval Ship Repair Facility and Japan Regional Maintenance Center (SRF-JRMC) is strategically located in the Western Pacific at Yokosuka, Japan, with a detachment in Sasebo, Japan. The SRF-JRMC Environmental Divisions at both Yokosuka (Code 106.3) and Sasebo (Code S106.3) provide support services to 18 home ported ships of the Forward Deployed Naval Forces (FDNF) serving the U.S. SEVENTH Fleet. This includes the USS BLUE RIDGE (LCC-19), the flagship of the U.S. Seventh Fleet, the nuclear-powered aircraft carrier USS GEORGE WASHINGTON (CVN-73), the operating forces of Commander Destroyer Squadron 15, and the U.S. Navy's only forward-deployed Amphibious Ready Group, anchored by USS ESSEX (LHD-2).

The mission of SRF-JRMC is to “Keep the SEVENTH Fleet Operationally Ready.” Facilities in Yokosuka support dry docking of most U.S. Navy ships. These facilities include six dry docks with a combined displacement of 530,000 tons, 19 wet berth locations, 10 industrial buildings with combined workshop space of 730,000 square feet, and 15,300 combined feet of pier to support maintenance. SRF-JRMC employs over 350 U.S. Navy and U.S. civilian personnel as well as over 2,000 full-time Japanese National employees, including 230 in our Sasebo detachment, making for a rich and multicultural workforce. The Environmental Divisions are responsible for managing the 22 Environmental Programs at SRF-JRMC for achieving environmental compliance, hazardous waste management, and waste recycling and reduction in waste generation. The Environmental Divisions at Yokosuka and Detachment Sasebo include 18 U.S. and Japanese engineers, engineering technicians, and environmental protection specialists. SRF-JRMC is committed to integrating environmental considerations into ship repair and maintenance activities via implementation and continual improvement of the SRF-JRMC Environmental Management System (EMS).

SRF-JRMC conducts depot-level Selected Restricted Availabilities (SRAs), Docking Selected Restricted Availabilities (DSRAs), and Continuous Maintenance Availabilities (CMAVs) that use hazardous materials and generate hazardous and industrial waste during ship repair and maintenance. These activities generate over one million pounds of hazardous wastes per year. The hazardous materials and the subsequent hazardous waste generated have the potential for significant environmental impacts on the environment of Japan. Potential uncontrolled releases of hazardous substances (spills), and the generation and disposal of wastewater are also significant environmental aspects at SRF-JRMC. With the industrial work conducted on the waterfronts of Yokosuka and Sasebo, SRF-JRMC is committed to mission readiness and environmental stewardship of the natural resources of Japan associated with shipyard activities.

## **BACKGROUND**

The date, 11MAR11, marked a watershed event in the history of Japan, and the U.S.-Japan alliance. The Tōhoku 9.0 magnitude earthquake, subsequent tsunami, and the resulting Fukushima nuclear crisis brought together Team SRF-JRMC (USN, USCS, and Japanese MLC employees) to participate in *Operation Tomodachi* (Operation Friendship). Strict energy conservation measures in support of all of the people of Japan were also implemented by the SRF-JRMC Command. The badly damaged Fukushima nuclear plant released a radioactive plume that contaminated air and water. In the aftermath of the Fukushima nuclear meltdown, radiation precautions were taken for SEVENTH Fleet ships to leave port after radioactive

particulate fallout from Fukushima was detected. Team SRF-JRMC conducted SRA-at-Sea for the USS GEORGE WASHINGTON (CVN-73), SRA at Detachment Sasebo for the USS LASSEN (DDG-82), and the Port Visit (PVST) at Yokosuka for the USS CURTIS WILBUR (DDG-54). The Environmental Team supported the nearly 100 SRF-JRMC shop Master Labor Contract (MLC) workers onboard the CVN-73 to complete the first Nuclear Carrier SRA-at-Sea. The Environmental Team conducted daily environmental and safety surveillance inspections, and established an accumulation point onboard CVN-73 for SRF-JRMC employees to turn in excess hazardous material. During the SRA-at-Sea, there was zero environmental, safety, or space control violations or mishaps. Space control was a particularly sensitive issue for MLCs to work onboard the CVN-73 because nuclear space control restricts MLC access to certain spaces onboard nuclear carriers. The unprecedented SRA-at-Sea assured sustained readiness for the defense of Japan.

In the face of these challenges, the dedicated Environmental Team sustains a robust environmental management program that is in full conformance with the International Organization of Standards (ISO) 14001 EMS requirements. The SRF-JRMC EMS is the model for the region. SRF-JRMC promotes EMS resource-sharing and training of host installations and other activities in EMS Plan-Do-Check-Act execution. Through these efforts, activities throughout the Far East have implemented the EMS quality management system approach created at SRF-JRMC. Another resource-sharing effort is that SRF-JRMC leveraged our EMS to implement the Voluntary Protection Program. This was achieved by aligning the SRF-JRMC Occupational Safety and Health Management System to the Occupational Health & Safety Standard (OHSAS) 18001 safety and health management system requirements. The similarity in structure and contents of OHSAS 18001 and ISO 14001 facilitated an integrated implementation approach at SRF-JRMC for Occupational Safety, Health, and Environment. While undergoing ship repair and maintenance at SRF-JRMC, the activities of the afloat forces can potentially have significant impacts on the environment. To engage this challenge, SRF-JRMC has taken a leading role in being close partners with ship's force. The command provides presentations to ship's force prior to ship availabilities to inform them of spill prevention, pollution prevention, waste disposal, and recycling in accordance with DoD and local environmental standards. On a routine basis the SRF-JRMC Environmental Team members conduct environmental safety briefs before refueling and defueling evolutions, and they provide surveillance of the harbor waters during these operations to prevent and respond to spills.

### **PROGRAM SUMMARY**

SRF-JRMC has implemented an EMS in full conformance with (ISO) 14001 and OPNAVINST 5090.1C. Most of the SRF-JRMC ship, shop, and code processes for ship repair maintenance activities are industrial activities that are not similar to any of the other activities in the Yokosuka or Sasebo areas. SRF-JRMC was listed in the Navy Appropriate Facilities List for establishing an EMS in July 2008. SRF-JRMC implemented its EMS conforming to the ISO 14001 requirements in May 2009. The sustainment of our outstanding EMS is supported by CAPT Steven L. Stancy, SRF-JRMC Commanding Officer. CAPT Stancy reissued the SRF-JRMC Environmental Policy Statement on 19 JUN 09 as one of his first actions as the new Commanding Officer. This made a very positive impact on all SRF-JRMC personnel in regards to the Command's commitment to environmental compliance and continual improvement.

One major feature of the Environmental Divisions is that we manage the 22 Environmental Programs at SRF-JRMC through our EMS. The success of the SRF-JRMC EMS and our environmental compliance achievements are attributable to the commitment of top management and deck-plate workers to EMS. Annually the cross-functional EMS Aspect Teams are chartered to facilitate mitigation of EMS significant aspects and impacts for the upcoming fiscal year.

Each year, SRF-JRMC establishes three EMS Aspect Teams with the team members drawn from a cross section of the shops and codes at SRF-JRMC. This diversity helps bring new ideas and approaches and Production shop perspectives to improve environmental compliance and prevent pollution while keeping the Seventh Fleet operationally ready. This also ensures involvement from personnel outside the Environmental Divisions. A bilingual approach is utilized at SRF-JRMC to enhance environmental awareness and to communicate to all personnel how environmental compliance improves performance of the mission and stewardship of the environment. The Team members have, for the past four years, successfully identified and documented SRF-JRMC significant aspects and impacts to the environment; established long term EMS Objectives and short term EMS Targets for achieving environmental compliance and pollution prevention; and identified processes and resources needed to achieve measurable performance goals. These include: increased spill prevention and spill response capability; continual improvement in waste management and environmental protection; and enhanced recycling processes and reduction in waste generation. As part of the successful sustainment of our EMS, all current employees of SRF-JRMC were provided the EMS Awareness training in English and Japanese, as appropriate, and new employees are given the EMS training during orientation. The Environmental Policy is published on the SRF-JRMC external website for external communication. The Environmental Divisions publish a Monthly Environmental Information Bulletin and a quarterly EMS Awareness Bulletin that is distributed to the shops and codes and contractors. The bulletins provide information on current environmental topics such as the status of EMS sustainment, Earth Day events, Ozone Depletion, Waste Management, Recycling, Pollution Prevention, and Go Green initiatives.

Updates on the EMS and environmental compliance are presented to SRF-JRMC top management on a quarterly basis during regularly scheduled Environmental Protection Council (EPC) management reviews. The quarterly reviews provide a regular forum for executive management to be informed about EMS activities, environmental trends, and events and projects targeted at improving our environmental performance. A recent example is the briefing on a project designed to remove hydrocarbons from wastewater generated during ship repair work. The interest that executive management expressed in the technology included inquiries related to available units and purchase cost, was an indication of the commitment to improving environmental performance.

Another aspect of executive management commitment to environmental compliance and continual improvement is taking on the challenge of engaging ship's force personnel to ensure ship personnel are maintaining vigilance in being compliant with environmental regulations. SRF-JRMC personnel participate in ship fueling operations and provide resources to help ship's force mitigate any environmental impacts. Ship's force is also assisted by SRF-JRMC's Environmental Divisions as our personnel provide guidance to ship's force regarding the proper disposal of solid waste and recyclable material. The Environmental Office also provides

guidance and equipment (designed by the Environmental Team) such as an attachment for man lift baskets, to prevent pollution during ship's force painting and preservation work.

As part of environmental management for our own operations, Environmental Team personnel routinely conduct over 2,500 environmental walkthrough surveillances annually of SRF-JRMC shops, surrounding areas, ships, piers, contractor facilities, and all land area within the SRF-JRMC fenced areas, storage facilities and outlying facilities under the operational control of SRF-JRMC. In FY09, environmental deficiencies attributable to SRF-JRMC Production Shops totaled 61 and contractors totaled 24 deficiencies. At the conclusion of FY11, the Environmental Team had identified six deficiencies attributable to the Production Shops and eight against contractors. This 90% reduction in Production shop deficiencies and 66% reduction in contractor deficiencies is proof positive that SRF-JRMC's EMS is effective and that management and personnel at SRF-JRMC are fully committed to reducing our environmental footprint by continuously achieving compliance and preserving our host country's natural resources.

### **ACCOMPLISHMENTS**

The success of our EMS is demonstrated by the following aspect/impact success stories. Three significant aspects were addressed during FY10 and during FY11. Objectives, target goals and POA&Ms for the significant aspects were established. The EMS Aspect Teams for each significant aspect worked throughout each FY to achieve their established goals.

**Spills of Hazardous Substances.** One FY10 EMS target was a "25% reduction of Spills by the end of FY10 compared to FY09." For FY10, there was a **48% reduction** in reportable spills compared to FY09. For FY11, there was a **77% reduction** in reportable spills compared to FY09 and a **52% reduction** compared to FY10. Our Environmental Team took the following steps during FY10 and FY11 to promote spill prevention and awareness at SRF-JRMC: pollution prevention (P2) devices assigned to ships in Selected Restricted Availability or offered for use; environmental personnel continued to attend liquid transfers (fuel, defueling, lube oil, etc.) operation off/on load safety briefs aboard ships to serve as advisors regarding spill prevention; and a de-watering bag for the oil skimmer and self-bailer for secondary containment were procured for pollution reduction. In addition, the SRF-JRMC Environmental Team leveraged their expertise in spill management to develop and provide a two-day hands on small spill response training for 48 attendees from: SRF-JRMC; Installation NAVFAC Environmental Office; Fleet Logistics Center (FLC); and Commander, Naval Region Japan (CNRJ) Fire Department personnel.

**Wastewater Management.** The FY10 EMS Aspect Team/Wastewater Group objective was to "Reduce industrial wastewater treatment operating costs by contractors, improve the facility's environmental performance, minimize environmental risk, and sustain continual improvement in wastewater treatment capability of SRF-JRMC." The FY11 Team's objective was to "Sustain continuous improvement in Wastewater Treatment Capability of SRF-JRMC and Reduce Industrial Wastewater Disposal Cost paid to contractors." Three special projects related to these objectives of reducing SRF-JRMC environmental impact from wastewater *go beyond simply meeting regulatory requirements.*

1) Initiation of an “Advanced Biological Process” pilot project to demonstrate the use of “dissolved oxygen augmentation” through a partnership with NAVSEA and NSWCCD. The Environmental Division obtained over \$100,000 from the Qualified Recycling Program to manage the logistics of receiving and staging the project equipment at our facility. SRF-JRMC contributes 75% of total scrap metal to the QRP. Phase I and Phase II of the project to degrade hydrocarbon compounds in wastewater generated during SRF-JRMC ship repair operations was completed in Nov 2010. Although Phase III was not executed, this project greatly enhanced the knowledge and skill set of our wastewater program managers and Production Shop bilge and oily water treatment system (BOWTS) operators. It was an enhancement that sparked advancement in our wastewater treatment capabilities that resulted in a cost avoidance of approximately \$11,000.

2) Two in-house Industrial Wastewater Treatment processes were tracked by the FY10 EMS Aspect Team. For FY10, the cost for disposal of *X-41 shop-generated wastewater* **decreased by more than 80%** compared to FY09. A contributing factor to this reduction was the completion of an in-house treatment system where SRF-JRMC started treatment of this shop-generated wastewater, instead of turning it over to a contractor for disposal. Also in FY10, the disposal cost per job for wastewater loaded into the SRF-JRMC YWN-82 barge decreased by 24%, partly due to improved operations at the BOWTS during treatment of the wastewater.

3) The FY11 EMS Aspect Team for oily wastewater established a target goal of reducing disposal cost by 25% as compared to FY10. To reduce the amount of suspended solids in oily wastewater, SRF-JRMC tested a pre-treatment filtering system to reduce the dependency on contractors and improve in-house wastewater treatment capability. The “Super filter” was installed at the SRF-JRMC BOWTS and was incorporated into routine wastewater processing operations. The “Super filter” allowed SRF-JRMC to reduce the amount of suspended solids in wastewater in order to improve the in-house wastewater treatment capability and improved the operation of the BOWTS. This initiative saved over \$140,000 in waste disposal cost and resulted in increased maintenance dollars for the maintenance of Seventh Fleet ships. In addition to savings in wastewater disposal costs, the Team also saved on Tank Cleaning Service Costs. The Team obtained a 41% reduction in FY11 tank cleaning costs as compared to FY10 that resulted in an additional savings of \$21,000. The savings that the Team has generated in FY11 will be additional costs savings for the SEVENTH Fleet in FY12.

**Energy Conservation.** The FY11 Energy Use/Conservation Team objective was to, “Reduce the use of electricity, the consumption of natural resources, and the generation of hazardous waste.” Initially, the Team targeted a few activities that would help achieve energy reduction: reduce mercury lamp usage; replacement of mercury lamps with LED lamps; and clothes dryer replacement. On 11MAR11, the Environmental Team expanded their focus to reduce electricity consumption for the entire facility through an aggressive campaign that included: weekly energy conservation tips; banning space heaters in office workplaces; securing elevators; setting thermostats to 78<sup>o</sup>F or higher; reliance on ambient lighting during the day; and policing workplaces for “lights out” after work. When the Government of Japan issued a 15% reduction goal in electricity use for large consumers because of the Fukushima nuclear crisis, SRF-JRMC

met and exceeded the challenge by reducing electricity use by 24% for FY11 compared to FY10. This was a cooperative effort by all to help the people of Japan as recovery from the aftermath of the earthquake and tsunami continues.

**Improved Hazardous Material Management.** The FY11 Hazardous Material (HM) Management Team consisting of C106.3 SRF-JRMC Environmental Division and C106.1 SRF-JRMC Safety Division personnel were challenged to correct a significant deficiency finding identified during the 2010 NAVFAC PAC External Environmental Compliance Assessment. The Team accepted the challenge and established their objective to, “Ensure Storage and Handling of HM in a Safe and Compliant Manner.” The target goal was to provide training on HM Incompatibility and Storage to 18 production shops and four support codes that store and use HM. The three person team worked hard to establish the training guidelines, schedules, and put together the staff to execute the training to over 1,300 employees in a short period of time. The Team worked over a period of six months and managed to train 97.5% of the targeted shop and code personnel. This effort resulted in increased knowledge of HM management, improved HM locker management, corrected a NAVFAC PAC ECA deficiency, and most importantly, created a much safer workplace.

**An Integrated Cultural Approach.** Early in our efforts to implement our EMS at SRF-JRMC, the Environmental Division team learned the importance of communicating environmental awareness and EMS implementation from a cultural perspective. Our EMS training in Japanese is not a Japanese translation of an English-language presentation. The Japanese EMS training was developed by SRF-JRMC Environmental Office Japanese-speaking environmental professionals with a strong grasp of environmental engineering and a strong understanding of Japanese communication techniques. This approach was successfully presented to Group Masters and Shop Heads during the initial implementation phases of EMS, and it is now offered annually as an integral part of Knowledge Retention Training (KRT) for shop and code personnel. The integration of personnel and processes from non-environmental shops and codes with existing environmental programs was used to help build the EMS and promote pollution prevention.

**Proper Waste Disposal and Waste Reduction.** The Environmental Office led the first SRF-JRMC Earth Day event in 2010, themed “Amnesty Day,” for the turn-in of hazardous material no longer usable for its intended purpose. The purpose of the event was to increase disposal awareness and allow shops and codes the opportunity to dispose of waste without fear of reprisal. The event collected 1,200 pounds of hazardous and solid waste that included 300 pounds of recyclables. SRF-JRMC Environmental Office also placed informational posters on all solid waste trash bins and dumpsters assigned to SRF-JRMC Yokosuka. The bi-lingual posters have also been placed on pier shacks and along the SRF-JRMC fence-line area to serve as a daily reminder of proper disposal methods. SRF-JRMC reduced improper waste disposal findings as compared to FY09 from 30 to 27 in FY10 for a 10% reduction and further reduced the amount of findings to 11 in FY11 for a 63% reduction compared to FY09. The reduction percentages could not be achieved without the vigilance of all SRF-JRMC employees to fight “Improper Waste Disposal” in the SRF-JRMC Area of Responsibility. The second major Solid Waste collection event for SRF-JRMC was conducted in FY11 and was themed the “Hai-Hin Kaishu-Sha” (“Recyclable Material Pick-up Vehicle” in Japanese). The SRF-JRMC Environmental Office led

the event and executed it over a three day period that also involved pre-screening and collection. SRF-JRMC Environmental Office working jointly with personnel from the SRF-JRMC Facilities Division to collect solid waste from various shops throughout SRF-JRMC. The event collected over 8,118 pounds of recyclable material. In addition to the benefit of collecting recyclable material, a larger, longer lasting benefit was the education of SRF-JRMC personnel and Ship's Force personnel on the proper management of solid waste.

**Keep the SEVENTH FLEET Operationally Ready during a Crisis.** The date, 11 March 2011, marked a tragic and devastating event in the history of Japan and a strengthening point in the U.S.-Japan Alliance. The Tohoku 9.0 magnitude earthquake and tsunami, and subsequent Fukushima nuclear crisis, brought together Team SRF-JRMC (USN, USCS, Japanese MLC employees and Contractors) to participate in Operation Tomodachi (Operation Friendship).

In the aftermath of the Fukushima nuclear plant meltdown, radiation precautions were taken for the SEVENTH Fleet ships to leave port after radioactive particulate fallout from Fukushima was detected. The U. S. Navy authorized USS GEORGE WASHINGTON (CVN-73), the first and only forward deployed nuclear aircraft carrier, to continue her Selected Restricted Availability (SRA) at sea and USS LASSEN (DDG-82) to continue her SRA in Sasebo, Japan. This raised additional challenges for the SRF-JRMC Environmental Office. To respond to these challenges, the SRF-JRMC Environmental Team deployed one of its personnel to join the Occupational Safety, Health and Environment (OSHE) Team to support the operations at-sea for the USS GEORGE WASHINGTON. The Environmental representative led the environmental operations while at sea and provided guidance to contractors and MLC employees. During the SRA-at-Sea there were no environmental violations or impacts to the waters of Japan. The Environmental staff collected over 1,120 pounds of hazardous, solid, and recyclable waste during a nine day underway period. Simultaneously, the Environmental Division deployed a member to Sasebo to integrate with the Detachment Sasebo Team and provide support to USS LASSEN (DDG-82). USS Lassen began her SRA in January 2011 and continued through May 2011. The interruption as a result of the March earthquake and tsunami forced the U.S. Navy to relocate her to Detachment Sasebo to finish the SRA. SRF-JRMC employees from many different shops and codes deployed to Sasebo to support the SRA. SRF-JRMC Environmental Division deployed a member to Sasebo to ensure continued support of the ship to meet the SRA milestones with no environmental impacts. Both SRAs were extremely challenging for all SRF-JRMC employees and a sacrifice for their families. The support from the Team SRF-JRMC ensured that deployed SRF-JRMC personnel could concentrate on keeping the SEVENTH Fleet Operationally Ready and relieve the stress on family members.

### **Continual Improvement**

SRF-JRMC is committed to the sustainability of the environment through environmental compliance as well as sustainability of the SRF-JRMC mission by mitigating environmental vulnerabilities. Our goal is to effectively communicate our strong environmental commitment, and promote environmental awareness and stewardship. These efforts have supported sustainment and strengthening of the U.S. - Japan Alliance. SRF-JRMC Environmental Team members are stewards of the environment for the next generation. As the SRF-JRMC motto goes, **Nan Demo Dekimasu - We Can Do Anything!**