

## Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility 2000 ENVIRONMENTAL QUALITY AWARD

### **INTRODUCTION**

**Mission.** Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility's (PHNSY&IMF) primary mission is to provide regional maintenance (depot and intermediate levels) to keep the surface ships and submarines of our Pacific Fleet "Fit to Fight." Maintenance capabilities include overhauling, repairing, converting, alteration, refurbishing, defueling, refueling, and decommissioning of Navy vessels.

**Population and Acreage.** PHNSY&IMF's responsive and flexible work force of approximately 4,000 (80% civilian and 20% military) work around the clock to provide high quality maintenance to surface ships and submarines, both homeported and transiting to Pearl Harbor. The unique civilian/military work force combines the long-term corporate knowledge of a stable civilian work force with the up-to-date operational expertise and deckplate-level knowledge of the military members. Through Memorandum of Agreements, PHNSY&IMF also provides environmental support to approximately 3,000 military crew members while their ships are undergoing maintenance availabilities. More than 21 tenant commands also receive environmental support from the PHNSY&IMF Environment Office.



*PHNSY&IMF Intermediate Maintenance Facility*

**Environmental, Geographical, Political, Economic, and Community Setting.** The Pearl Harbor Naval Shipyard was established in the early 1900's. By the middle of 1941, the civilian workforce had grown to 7,300 employees and the Yard was bustling with activity on the *Day of Infamy*, December 7, 1941. Today, the Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility, is the Navy's first regional intermediate and depot level maintenance activity and is the largest industrial complex in Hawaii. Our Command encompasses 300 acres of land, 158 buildings, 4 dry-docks, and 34 piers in the Pearl Harbor Naval Complex.

Pearl Harbor is a large complex natural estuary located on the south coast of Oahu in the Hawaiian Islands. The majority of Pearl Harbor lies within the confines of the Pearl Harbor Naval Complex. Pearl Harbor contains 8 square miles of surface water area and 36 miles of linear shoreline. The strategic location of Pearl Harbor, in the center of the Pacific, makes it an important asset to the fleet as the final non-foreign port to ships heading to the Far East. As the United States continues its role as the leader in the Pacific Rim, the importance of the Pearl Harbor basin as a viable repair facility remains evident.

### **BACKGROUND**

**Environmental Challenges.** PHNSY&IMF is faced with a wide range of environmental challenges due to the myriad of complex industrial operations performed at its sensitive ecological location. Our greatest environmental challenge is integrating environmental controls into our current work practices without adversely impacting cost and productivity. Another major challenge is meeting the nutrient level limitation imposed by our National Pollutant Discharge Elimination System (NPDES) permit for our dry-docks. Our environmental staff is currently working with the State of Hawaii, Department of Health (SOH DOH) to explore possible solutions to this problem.

**Organization and Staffing.** The Environment Division is part of the Occupational Safety, Health and Environment (OSHE) Department. Our Environment Division's staff of 23 dedicated and highly experienced environmental engineers, specialists, and technicians work aggressively to pursue innovative methods to proactively achieve, and when possible, exceed environmental compliance requirements. Environmental programs are distributed between the Environmental Compliance Branch and the Solid and Hazardous Waste Branch. Environmental Programs include:

- *Air Pollution Control*
- *Asbestos*
- *Cultural & Natural Resources*
- *Hazardous Waste Management*
- *Installation Restoration*
- *Mixed Waste*
- *National Environmental Policy Act*
- *Oil and Hazardous Substances Management*
- *Ozone Depleting Substance Elimination*
- *Polychlorinated Biphenyls Management*
- *Pollution Prevention*
- *Solid Waste Management and Recycling*
- *Water Pollution Control*
- *Safe Drinking Water*
- *Environmental Training*
- *Spill Prevention Control & Countermeasures*
- *Underground/Aboveground Storage Tank Management*
- *Emergency Planning & Community Right-to-Know Act*



*Environment Division staff with PHNSY&IMF Commander, Captain J. Conners, receiving Certificates of Recognition for being selected to represent our Command for the 2000 Federal Organizational Excellence Award.*

**Management Approach.** PHNSY&IMF's Leadership Council created the Environmental Policy Council, which is chaired by PHNSY&IMF's Commander and comprised of senior managers and union representatives. Council members meet on a monthly basis to focus on environmental issues such as spill prevention, underwater hull scrubbing, and pollution prevention. This high level support has improved the overall effectiveness and awareness of our environmental programs.

**Community Committees, Boards and Partnerships.** PHNSY&IMF has a strong working partnership with its host, Naval Station, and regulatory agencies. Environment Division staff members meet regularly with the U.S. Environmental Protection Agency (EPA) Region 9, State of Hawaii, Department of Health (SOH DOH), Restoration Advisory Board (RAB), Coast Guard, Oahu Civil Defense, and Clean Isle Council to address environmental concerns arising from industrial operations at PHNSY&IMF.

PHNSY&IMF participates in the Restoration Advisory Board administered by Navy Region, Hawaii. The Advisory Board includes members from Naval activities within the Pearl Harbor Complex, community, business and State government representatives. These meetings provide a mechanism for the community to voice concerns, ask questions, and participate in the decision making process. Relations through the RAB are positive and meetings are informative for all participants.

Close partnering with the State of Hawaii resulted in our Command's donation of three landing craft units (LCU) to the Artificial Reef Program. One of the LCUs was scuttled off the Southern coast of Oahu (Kahala) and the other two were sunk off the Western coast of Oahu (Waianae) to create manmade habitats for marine life. A strong rapport and commitment to find mutually agreeable solutions has greatly benefited PHNSY&IMF, regulators, and the community.

As a participating member of the Hawaii Pollution Prevention Partnership (HP3) Committee, PHNSY&IMF entered into a formal pollution prevention partnership with the State of Hawaii and the U.S. EPA. Through a committed partnership between the Department of Defense and State of Hawaii, HP3 is designed to promote pollution prevention as the first choice of doing business by developing and implementing model initiatives, building trust and validating results that protect our unique island environment while maintaining our national defense and community well-being.



*Hawaii Fishing News Aug '99 cover.*

In a first of its kind agreement, PHNSY&IMF partnered with Hawaiian Electric Company (HECo) to construct a new chiller plant to provide air conditioning to our buildings, dry-dock areas and berthed ships. The entire project was funded by HECo's Energy Conservation Program to reduce electrical demand. The utility company will be "reimbursed" through savings in energy while PHNSY&IMF will be able to cut energy use by 30% by 2005 and another 35% by 2010.

**Environmental Plans and Agreements.** Several environmental plans have been developed and updated by our in-house environmental staff in the past two years. In addition, Memorandums of Agreement addressing environmental compliance between Ship's Force, contractors, and our Command were recently updated. All private contractors and commanding officers of ships undergoing maintenance upkeep enter into formal agreements with PHNSY&IMF to ensure environmental compliance in areas such as solid and hazardous waste management, air and water pollution control, and spill prevention. PHNSY&IMF's Environment Division has also directly negotiated permits with the State of Hawaii, Department of Health and Federal regulators to facilitate maintenance operations. These permits include the Clean Water Act, National Pollutant Discharge Elimination System (NPDES) permit for operation of the dry-docks, NPDES permit for operation of Dockside Chlorinators, Stormwater General NPDES permit, Clean Air Act Title V Covered Source permit, Resource Conservation and Recovery Act storage permit for Mixed Waste, and a Polychlorinated Biphenyl long-term storage permit.

<b>PHNSY&amp;IMF Environmental Plans and Agreements</b>	<b>Date of Completion/ Update</b>
Occupational Safety, Health & Environmental Work Specifications (OWS) Program	December 2000
Mixed Waste Storage Area Operating Requirements and Contingency Plan	October 2000
Controlled Industrial Facility Operating Requirements and Contingency Plan	October 2000
Qualified Recycling Program (QRP)	September 2000
Mixed Waste Policy and Procedures	July 2000
Memorandum of Agreement (MOA) for Environmental Guidelines for Contractors on Ship Projects	March 2000
MOA for Environmental Guidelines for Contractors	March 2000
MOA for Environmental Surveillances with Navy Region Hawaii	March 2000
Oil and Hazardous Substance Contingency and Emergency Response Plan	January 2000
Environmental Controls and Procedures for Shipboard Hydroblasting	January 2000
Spill Prevention Control and Countermeasures Plan	August 1999
Used Oil Management Plan	August 1999
Hazardous Material Control and Management Plan	July 1999
Hazardous Waste Management Plan	June 1999
Polychlorinated Biphenyl (PCB) Program Management	January 1999
Facility Response Plan (OPA 90 Required Response Plan for Oil)	January 1999
Operations Manual (US Coast Guard Required Instruction for Transfer of Oil and Hazardous Materials from a Vessel)	January 1999

### **PROGRAM SUMMARY**

**Environmental Management Program Objectives.** PHNSY&IMF is committed to pursue a high standard of environmental excellence which will protect and improve the quality of our environment and conserve our resources. Our Environment Division developed an environmental mission, vision, and strategic goals that are used to guide our Command's environmental programs.

### **MISSION OF THE ENVIRONMENT DIVISION**

*We provide world class environmental services to keep our ships of the Pacific Fleet "Fit to Fight."*

### **VISION OF THE FUTURE FOR THE ENVIRONMENT DIVISION**

- *We are an aggressive, proactive, and innovative team working together to develop and manage insightful environmental programs to enhance Fleet readiness and protect the quality of our fragile island environment.*
- *We successfully integrate new environmental requirements into our work processes such that they either improve or do not adversely impact the productivity and efficiency of our work force.*
- *We are a recognized leader in environmental excellence and provide the innovative and effective use of pollution prevention to enhance environmental quality and resource conservation.*
- *We actively promote environmental education and responsible stewardship of Hawaii's natural resources in our local community.*
- *We provide an environment where our workers and customers are knowledgeable and aware of environmental requirements and their role in protecting our environment.*

### **STRATEGIC GOALS**

*We will integrate pollution prevention throughout all environmental compliance programs to achieve or exceed regulatory compliance requirements, minimize procedural burdens, reduce costs, improve productivity, conserve resources, and enhance safety. We will extend this program into our community by entering into a partnership with the State of Hawaii.*

PHNSY&IMF meets this strategic goal by reviewing all industrial processes and incorporating pollution prevention initiatives such as process changes, hazardous materials substitution/elimination, and recycling, where applicable. In addition, pollution prevention projects such as the plastic media blast and dry filter paint spray booths, plural component paint system, etc. have reduced waste generation, reduced costs, and greatly increased productivity. PHNSY&IMF was the first shipyard to develop metrics for various environmental programs such as hazardous waste generation, spills, etc. to measure the effectiveness of the programs, identify areas for improvement, and assess the effectiveness of the solutions. Key environmental metrics are prominently displayed in the PHNSY&IMF Commander's and Code 106's conference rooms, and periodically disseminated to employees via *Environmentalgrams*.

PHNSY&IMF entered into a formal pollution prevention partnership with the SOH and EPA to share innovative processes and technologies that can reduce environmental costs while achieving compliance. The Hawaii Pollution Prevention Partnership (HP3) will promote pollution prevention as the first choice to achieve compliance. Future potential projects for the Hawaii P2 Partnership include used oil and tire management, construction and demolition waste recovery, and artificial reef enhancement using recycled material.

*We will effect a cultural change wherein all employees strive to meet and exceed their environmental responsibilities. We will create a workplace that encourages each individual to improve our work procedures and practices thereby increasing our knowledge base exponentially.*

PHNSY&IMF meets this strategic goal by providing environmental awareness training to all new employees to promote employee involvement in our environmental programs. A recently developed, interactive computer-based environmental training has received high praise by trainees. "*E Malama Kakou I Ka Aina (Let's all care for the Land)*" was printed on 2,000 breakaway badge holders and distributed to employees as incentive awards to increase environmental awareness. OSHE staff members "become part of the solution" by forming teams which include waterfront production personnel, planners, facility engineers, trainers, etc. to address OSHE concerns and develop solutions. This close working relationship with other departments has increased employee participation in our Environmental Programs.

*We will use innovative environmental controls and initiatives to incorporate the ever-changing environmental requirements into our work process planning, engineering, and execution.*

PHNSY&IMF's OSHE Department meets this goal by participating in the development of process instructions, technical work documents, training plans, memorandums of agreements, and contracts to ensure incorporation of OSHE requirements. In addition, our Command recently implemented the OSHE Work

Specification (OWS) Corporate Program to integrate OSHE requirements into standard work processes for all shipyards.

***Outstanding Features of our Environmental Program***

***Spill Reduction.*** One of our successes has been the reduction of spills. Because our Command experienced approximately 50 reportable and non-reportable spills annually, the Environmental Policy Council took action to reduce spills. The leading causes of spills were identified and action was taken to prevent these types of spills. In addition, our Environment Division emphasized spill prevention awareness throughout our Command by conducting training at waterfront production meetings and Hazardous Waste/Materials Coordinator meetings and by publishing spill prevention and awareness articles in our *Environmentalgrams* and Command newsletter. In FY99 and 00, we were able to reduce our spills by 71% and 23%, respectively, by analyzing the source of spills and taking corrective actions. In both fiscal years, there was only one reportable spill per year.

***Customer Service.*** Well-functioning work teams are critical to our organization's success. The Environment Division's staff is committed to environmental excellence and delighting their customers. They have been highly successful in interpreting and integrating the vision and core values of our Command into an organizational structure that provides responsive, flexible and innovative support to waterfront production shops. By establishing strong working relationships through OSHE Committees, pollution prevention working groups, and production group meetings, they have enhanced personnel awareness of environmental responsibility to ensure compliance and improved production efficiency.

***Recognition.*** PHNSY&IMF received the following awards in recognition of outstanding environmental stewardship during 1999-2000.

- 2000 Federal Organizational Excellence Award, Certificate of Recognition (Environmental)
- 1999 White House Closing the Circle Award in Waste Prevention
- 1998 Secretary of the Navy Pollution Prevention Award - Industrial Installation
- 1998 Department of Defense Pollution Prevention Award - Honorable Mention
- 1998 White House Closing the Circle Award - Certificate of Achievement

***Unique Features and Cost Effectiveness.*** The most unique feature of the OSHE program is the high level of claimant and command support to perpetuate environmental stewardship throughout the entire organization. As a result, we are able to fully integrate OSHE requirements in project management of ship repair availabilities.

In FY99-00, P2 projects funded by the Chief of Naval Operations have greatly reduced or eliminated the generation of waste and subsequent disposal costs in many waste streams. Renegotiation of our spent grit disposal contract resulted in annual savings of \$1 million. P2 initiatives have reduced waste generation by more than 28 million pounds and air emissions by more than 40,000 pounds, resulting in cost and cost avoidance savings of more than \$4 million. In addition, re-negotiation of waste disposal contracts to obtain more favorable rates have resulted in cost savings. The optimal utilization of in-house environmental personnel and materials enabled the Environment Division to return funds from its budget over a two-year period to the Comptroller for use in other areas of the Command.

***Beyond Compliance.*** To ensure OSHE compliance, OSHE personnel conduct briefings for all contractors and Ship's Force personnel prior to commencement of any work. This has been an effective means of raising their level of environmental awareness and ensuring compliance. The extensive use of metrics to measure the effectiveness of the programs, identify areas for improvement, and assess the effectiveness of the solutions is one of the proactive management techniques used.

**ACCOMPLISHMENTS**

***AIR POLLUTION CONTROL***

PHNSY&IMF submitted a Clean Air Title V Covered Source Permit to the SOH DOH, identifying 31 significant sources and 102 insignificant sources. The SOH DOH recently issued the air permit to

PHNSY&IMF but reduced the number of significant sources from 31 to 2. To standardize the data and develop monthly and semi-annual air permit compliance reports and annual emission reports, a Ship Coating NESHAP Database was developed in-house. The database contains information on the types of paint, paint uses, manufacturers, Material Safety Data Sheet identification numbers, and Volatile Organic Compounds (VOC) content.

A substantial portion of ship's preservation work consists of painting Naval vessels. The paints contain VOCs which evaporate and pollute the atmosphere. In an effort to reduce VOC emissions, PHNSY&IMF began using high solid, low VOC paints that have a longer service life. To support effective application of the high solids marine coatings, plural component pumps are used to catalyze the two-part paint as close as possible to the worksite to prevent waste. In addition, to facilitate paint application operations, six dehumidifiers and a 150-ton chillwater unit were purchased to control relative humidity and temperature within the containment areas erected for painting and blasting operations. PHNSY&IMF recently installed two abrasive blast booths at the Corrosion Control Shop to support powder-coating operations. PHNSY&IMF has been steadily increasing powder coating of components vice spray painting in an effort to reduce VOC emissions. In addition, a plastic media blast booth and dry filter paint spray booth were also erected to prevent emissions into the atmosphere. These process changes have prevented approximately 40,000 pounds of VOCs from being emitted to the atmosphere.



*Dehumidifiers used to control relative humidity to support high solids marine coatings application.*

#### ***WATER POLLUTION CONTROL***

PHNSY&IMF has NPDES permits for its dry-docks, storm water system, and dockside chlorination units (DCUs). Since water pollution control and compliance is a critical aspect of our Command's ability to perform its ship repair mission, aggressive efforts are made to identify and implement pollution prevention initiatives.

Recently our Command has encountered problems meeting the nutrient level limitation imposed by our NPDES permit because ambient background conditions (harbor waters) are already above the permit limits. Because groundwater seepage water into the dry-docks has been identified as the primary cause of high nutrient levels, PHNSY&IMF has embarked on a \$5 million facility improvement project to repair and seal Dry-dock #4 to minimize seepage water entering the dry-dock. If successful, similar projects will be initiated for the three remaining dry-docks.

Our Command has been the NAVSEA leader in operation of DCUs, which are used to minimize seagrowth in the ship's seawater-cooled heat exchangers and condensers. Use of DCUs eliminates waterborne and dry-dock cleaning of the heat exchangers and condensers and the subsequent generation of waste. PHNSY&IMF is in the process of obtaining an NPDES permit to use dockside chlorination/dechlorination units, which are designed to dechlorinate the chlorinated water prior to discharge into the harbor.

Implementation of our stormwater pollution prevention plan has been highly effective in reducing nonpoint source pollutants from entering Pearl Harbor. Environment Division staff perform weekly zone inspections to identify potential stormwater pollution concerns. In the past two years, best management practices such as indoor storage of hazardous materials, painting awareness messages on storm drains, erecting protective coverings over outdoor industrial operations, and diking have been implemented. A recent clean-up of the regional recycling center resulted in a significant reduction in pollutants such as aluminum, zinc, and iron. To increase the level of awareness of our personnel, water pollution prevention training is conducted periodically and a stormwater training video is available on the Environment Division's Intranet site.

An ultra high-pressure hydroblast (UHPH) closed-loop system was procured to improve our paint and non-skid removal operations on surface ships. A similar system is being reviewed for submarines. Previous hydroblasting methods required the construction of containments to capture spent hydroblast water. The new UHPH closed-loop design captures all spent hydroblast water at the blasting head thereby eliminating the need to setup containments on the dry-dock floor. The captured spent water is routed through a filtration system

removing all solids and is recirculated back to the hydroblasting head. Potential annual cost savings of \$270,000 can be realized by eliminating the containment and minimizing the volume of hydroblast water generated for disposal.



*Paint removal and application operations are performed in "shrunk wrapped" enclosures, both in the dry-dock and at the pier.*

While restricting dry blasting to fully contained, negative ventilated enclosures in our dry-docks, PHNSY&IMF also performs needlegunning, grinding, and painting of ship superstructures in negatively ventilated, "shrink-wrapped" enclosures in our dry-docks and at our piers. These initiatives prevent paint chips and other pollutants from entering our harbor waters and littering our dry-dock floors.

Additional best management practices include: 1) requiring all materials handling equipment such as manlifts and forklifts to be parked on herculite to contain any potential oil leaks from hydraulic or fuel systems; 2) covering all dry-dock drains with foam filters to prevent debris from being discharged into the harbor; and improving housekeeping practices by cleaning the dry-dock floor after every shift.

To protect our drinking water, our Command has completed two backflow prevention surveys of more than 125 facilities to identify and correct deficiencies. More than 175 backflow preventers on the waterfront are inspected on a quarterly basis to identify illegal cross connections and leaking backflow preventers.

Our Command has actively pursued equipment and process modifications to conserve water. Replacement of a water curtain paint spray booth with a dry filter paint spray booth reduced annual potable water consumption by 100,000 gallons. A high pressure water system used for hydroblasting of shipboard piping, heat exchangers and pressure vessels systems was modified by shop personnel at a cost of \$152 to reduce water usage by 1.5 million gallons, resulting in annual cost savings of \$225,000. Initiatives are currently underway to evaluate high potable water usage equipment, such as high-pressure air compressors and vacuum pump cooling systems, to reduce water consumption.

#### ***WASTE MANAGEMENT AND RESOURCE RECOVERY***

***Solid Waste Management.*** Our Environment Office recently took over the management of our Command's Recycling Program. New recycling containers were purchased and strategically placed to encourage recycling. Centralized recycling pick-up areas have been established throughout our buildings and dry-dock areas. A convenient bulky item pick-up service is also available for large recyclable items. Due to the success of our recycling program, the number and size of municipal waste dumpsters and frequency of pick-ups were reduced. Non-hazardous waste with significant BTU values is sent to H-Power for energy resource recovery. PHNSY&IMF diverted more than 5,350,000 million pounds of non-industrial and industrial waste from our landfills and incinerators, resulting in a 52% diversion rate.

***Underground/Aboveground Storage Tanks (UST/AST).*** PHNSY&IMF has removed all of its 34 USTs and installed 3 ASTs as replacements to meet Federal UST regulatory requirements. ASTs are identified in our Command's Spill Prevention Control and Countermeasures (SPCC) Plan, and are inspected on a regular basis.

***Toxic and Hazardous Waste Management.*** PHNSY&IMF operates a *less than 90-day facility*, which processes hazardous waste generated by our Command. All hazardous waste is accumulated on site, collected, sampled, packaged, and shipped out from this facility. Process improvements in the management of waste and materials, better characterization of waste streams, and renegotiation of disposal contracts have resulted in significant cost and cost avoidance savings.

Management and disposal of spent blast grit was improved by better segregation of the waste streams to identify batches that would potentially result in the generation of hazardous wastes. The abrasive grit contains arsenic, which naturally occurs during mining and production of new abrasive. Spent abrasive grit generated by our Command contains levels of arsenic just below the RCRA regulated limited but high enough that alternative land use applications such as "fill material" is prohibited. By renegotiating our abrasive grit disposal contract and the use of innovative packaging, our Command realized savings of over \$940,000 and 166 mandays during a seven month period.

Our Command continues to improve the management of hazardous materials by extending shelf-life, diverting reusable products to Defense Reutilization and Marketing Service (DRMS) for resale vice disposal, and providing hazardous materials procurement and storage training. These initiatives have resulted in cost avoidance savings of more than \$50,000.

PHNSY&IMF continues to target source reduction of harmful VOC emissions by increasing the usage of VOC compliant paints and low VOC high solid paints. This has resulted in a three-year decreasing trend for both xylene and n-butyl alcohol. In 1999, our total releases of toxic chemicals were below the EPCRA reportable threshold limits.

#### ***ENVIRONMENTAL RESEARCH AND EDUCATION***

***Environmental Ethics and Awareness Programs.*** Environmental information updates and training are provided to our 80 Hazardous Materials/Waste/Minimization coordinators at quarterly workshops to stress environmental awareness and compliance. Environmental information is also disseminated in our monthly *Environmentalgrams*, and the *Log*, PHNSY&IMF's bi-weekly newspaper. Environmental training, which include briefings on specific environmental controls and requirements are conducted for the crew of every vessel that docks at PHNSY&IMF. In addition, all contractors that perform work at our Command are required to attend an OSHE briefing to ensure compliance. Environment Division personnel attend pre-work briefings and establish strong working relationships with the projects, production shops, and contractors to prevent environmental discrepancies and inadvertent releases.

***Research, Development and Technology Demonstration.*** An installation restoration project at Building 394 is currently underway to remove lead contamination from soil resulting from submarine battery disassembly and disposal operations. The project is part of the EPA's Superfund Innovative Technology Evaluation (SITE) program. As an innovative technology demonstration site, the project's goals are to reach the lead clean-up level of 2,000 mg/kg or less and be less costly than an ex-situ treatment process.

PHNSY&IMF is currently working on a joint project with Naval Sea Systems Command (NAVSEA), Commander Submarine Forces, U.S. Pacific (COMSUBPAC), Naval Research Laboratory, and CHEMCorr to develop and test chlorination and dechlorination units for ship's cooling systems. Chlorination is required to prevent biofouling of the cooling water system heat exchangers while the submarine is pierside. The chlorinated water is then discharged into the harbor. The project is focused on dechlorinating the water to minimize chlorine discharges into the harbor.

PHNSY&IMF is working closely with Graco Inc. and Advanced Finishing Systems to modify a plural component system to improve paint application of high solids paint. The new modifications will reduce paint waste and improve paint spray application. PHNSY&IMF is also an active participant in pursuing a new painting technology known as Automated Paint Application, Containment and Treatment System (APACTS). APACTS consists of a semi-automated robot designed to paint the sides of Navy ships up to 100-foot in height. This new system will not only reduce paint usage and waste generation, but also increase productivity, contain excess paint and collect heavy metal contaminants and noxious fumes that would otherwise pollute the air and harbor waters.

Inland Technology recently demonstrated a paint gun washer system that utilizes a cleaning compound designed as a substitute for mineral spirits. The low VOC, low toxicity, high flash point formulation is highly effective in removing high solids paints from the paint guns and spraylines. Plans are underway to purchase several washers to support painting operations. Other equipment validation projects include sodium bicarbonate blasting, steel grit deck blasting, plural component paint dispensing, and power sweepers for dry-dock cleaning.

***Community Involvement and Activities.*** The Environment Division staff is actively involved with community activities such as conducting environmental training and science fair judging at local schools, beach and highway clean-ups, and recycling. In addition, personnel participate in community and Command Earth Day activities. On Earth Day, storm drains located in the Pearl Harbor Naval Complex are stenciled, "Dump No Waste, Goes to Ocean." Personnel also join with the local community to clean the ocean by diving to recover trash and other debris.



*Teaching children the importance of protecting our environment*

***Cooperation with Federal, State, and Local Agencies.*** PHNSY&IMF continues to maintain a strong, positive working relationship with Federal and State regulators. We have reinforced this relationship by entering into a formal P2 partnership with the U.S. EPA and State of Hawaii. Working Groups, formed to address specific environment concerns, provide information updates to other members at the quarterly HP3 meetings. By leveraging our resources and technology, HP3 is effective at achieving and exceeding compliance requirements.

During the past two years, our Command's School To Work (STW) Program has provided employment opportunities for over 244 high school students and 48 teachers from 28 public and private high schools across the state. The students and teachers were exposed to various occupations within the ship repair industry by working side by side with journeymen, mentors and/or supervisors. This allows students and teachers to see and experience first-hand, the knowledge and skills necessary to successfully work in today's technical work environment and give the students the necessary information that will allow them to make an informed career decision regarding post high school endeavors. The Environment Division employed five students who were actively involved in various environmental projects.

### ***ENVIRONMENTAL COMPLIANCE ASSESSMENT AND MANAGEMENT PROGRAM***

***Self-Assessments.*** In conjunction with the Environment Division, the Quality Assurance Department conducts annual self-assessments of all environmental programs. All deficiencies, responses, and corrective actions are tracked on an automated system. In addition, the multi-disciplinary environmental staff performs weekly zone surveillances and periodic program audits to identify and address potential environmental problems. By using established environmental metrics, program managers can measure the effectiveness of the programs, identify areas for improvement, and assess the effectiveness of the solutions.

***Regulatory Interaction.*** PHNSY&IMF hosted 15 visits and inspections by regulatory agencies in FY99-00 with **NO** Notices of Violations (NOV). PHNSY&IMF has received only two NOVs in its 92-year history, and none in the past five years. In addition, our Command's Environment Management Program also earned high praise in a recent Command Performance Inspection (CPI) conducted by NAVSEA. Regulators often look to PHNSY&IMF as experts in ship maintenance and leaders in environmental excellence. Our Command's extensive interaction with regulators has resulted in mutually beneficial permit conditions, greater understanding of our operations, and a stronger working relationship.

***Budgeting and Long-Term Planning.*** Diligent budget management is a continual process for our Environmental Program Managers. Budgetary requirements are submitted and tracked to ensure adequate funding for sustained compliance. PHNSY&IMF spent \$4.5 million in FY99-00 to maintain and sustain full environmental compliance. In addition, more than \$2 million of equipment has been received from the CNO's

P2 Equipment Program. Due to costs savings realized through P2 initiatives and reduced hazardous waste disposal costs in FY 99, the Environment Division returned \$390,285 to our Comptroller.

**Training Programs.** The keys to sustained environmental awareness and compliance are training, training, and training! The Environment Division provides various training opportunities for employees which include: Hazardous Waste Awareness, Hazardous Waste Operations and Emergency Response, Department of Transportation Hazardous Materials Management, Land Disposal Restrictions, and Washington State Dangerous Waste Characterization. During the past two fiscal years, more than 500 people have attended these classes. In addition, all employees receive annual environmental awareness training. A new interactive computer based training to promote OSHE awareness and compliance has received high praise from users. OSHE instructions, forms, and training videos are also readily available on the OSHE Department's web site.

### ***NATIONAL ENVIRONMENTAL POLICY ACT PLANNING, ANALYSIS & IMPLEMENTATION***

Although PHNSY&IMF has the in-house capability of developing environmental impact statements (EIS), the necessity of developing them has not yet arisen. All facilities projects are routinely forwarded to the Environment Division for NEPA screening. More than twenty projects were analyzed for NEPA compliance during the two-year period. Our Command is currently working on two environmental assessments (EAs) to demolish unsafe buildings.

In FY00, PHNSY&IMF embarked on a new frontier by leasing one of its dry-dock and the surrounding laydown areas to private contractors to perform ship repair and hull preservation work on 1,021-passenger cruise ship, SS Independence. In order to classify this initiative as a categorical exclusion, a "Finding of Suitability to Lease (FOSL)" and "Environmental Baseline Survey (EBS) Findings" were required. The documents were developed by in-house environmental experts at a cost saving of \$380,000. Based on these supporting documents, the categorical exclusion was upheld. The \$5 million repair package created 700 jobs, involved 26 local businesses and added a boost to the island's ailing commercial ship repair industry.



SS Independence entering Dry-dock #4 for repairs.

### ***SUMMARY***

PHNSY&IMF continues to be a leader in environmental quality by maintaining and, in some instances, exceeding, environmental regulatory requirements. Our Environmental Programs are highly successful in:

- Establishing credible working relationships with the regulators and community
- Obtaining workable permits for Air, Water, and Waste
- Minimizing emissions and pollutants to the environment
- Identifying and reducing waste streams and minimizing associated disposal costs
- Recycling and implementing cost effective pollution prevention initiatives
- Removing potential liabilities associated with Underground Storage Tanks
- Educating the workforce, ship's personnel and contractors on environment requirements and enhancing awareness
- Identifying and cleaning up contaminated sites
- Implementing new requirements for NESHAPs

In addition, our Environmental Programs have improved production efficiency, reduced maintenance cost, and prevented violations and negative publicity for the Navy. By proactively managing our Environmental Programs, PHNSY&IMF's Environment Division is at the forefront of implementing new technologies and processes. The personnel of PHNSY&IMF are fully committed to working towards realizing the Navy's vision of environmental leadership while effectively executing Naval operations.