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POLLUTION PREVENTION PLAN NTC ORLANDO FL

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RUST ENVIRONMENT AND INFRASTRUCTURE

POLLUTION PREVENTION PLAN
NAVAL TRAINING CENTER ORLANDO
Orlando, Florida

Southern Division
Naval Facilities Engineering Command
Contract N62467-93-D-0662

RUST E&I Project No. 32313.000
June 1995

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DOCUMENT REVISION TRACKING

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This sheet is to be updated with each revision of this document.

REVISION NUMBER	DATE	NAME	INITIALS	PAGES AFFECTED

ACRONYMS AND ABBREVIATIONS

AUL	-	Authorized Use List
BOS	-	Base Operating Support
CHRIMP	-	Consolidated Hazardous Material Reutilization and Inventory Management Program
CBU	-	Construction Battalion Unit
CFR	-	Code of Federal Regulations
CNET	-	Chief of Naval Education and Training
CWA	-	Clean Water Act
DLA	-	Defense Logistics Agency
DOSCDR	-	Deputy On-Scene Commander
DOT	-	Department of Transportation
DRMO	-	Defense Reutilization and Marketing Office
DRMS	-	Defense Reutilization and Marketing Service
EPA	-	Environmental Protection Agency
FDEP	-	Florida Department of Environmental Protection
HAZMIN	-	Hazardous Material Minimization Centers
HICS	-	Hazardous Inventory Control System
HM	-	Hazardous Material
HS	-	Hazardous Substance
HW	-	Hazardous Waste
HWAR	-	Hazardous Waste Annual Report
HWM	-	Hazardous Waste Manager
HMIS	-	Hazardous Material Information System
HSWA	-	Hazardous and Solid Waste Amendments
HWC	-	Hazardous Waste Coordinator
HWMC	-	Hazardous Waste Minimization Committee
HWMP	-	Hazardous Waste Minimization Plan
MIL SPEC	-	Military Specification
MSDS	-	Material Safety Data Sheets
MWR	-	Morale, Welfare, and Recreation
NAVFAC	-	Naval Facilities Engineering Command
NAVSUP	-	Naval Supply Systems Command
NEX	-	Navy Exchange

NFESC	-	Naval Facilities Engineering Services Center
NNPS	-	Navy Nuclear Power School
N.O.S.	-	Not Otherwise Specified
NOSCDR	-	Navy On-Scene Commander
NRC	-	National Response Center
NSN	-	National Stock Number
NTC	-	Naval Training Center
OICC/ROICC	-	Officer in Charge of Construction/Resident Officer in Charge of Construction
OHS	-	Oil and Hazardous Substance
OHSSCP	-	Oil and Hazardous Substance Spill Contingency Plan
OPNAVINST	-	Navy Operations Instructions
ORM	-	Other Regulated Material
OSCDR	-	On-Scene Commander
POA&M	-	Plan of Action & Milestones
POC	-	Point of Contact
POL	-	Petroleum, Oil and Lubricants
PPE	-	Personal Protective Equipment
PWD	-	Public Works Department
PWO	-	Public Works Officer
RCRA	-	Resource Conservation and Recovery Act
ROICC	-	Resident Officer in Charge of Construction
RTC	-	Recruit Training Center
SSC	-	Service School Command
TCLP	-	Toxicity Characteristic Leaching Procedure
WC	-	Work Center

1.0 POLICY STATEMENT

NAVAL TRAINING CENTER
ORLANDO, FLORIDA
HAZARDOUS WASTE REDUCTION AND
POLLUTION PREVENTION
POLICY STATEMENT

This policy statement sets in place NTC's commitment to implement and support the activity Pollution Prevention Plan, which promotes a clean and safe environment. NTC policy is to minimize the generation of hazardous and non-hazardous wastes, to reduce the use of hazardous and/or toxic materials and the volume and toxicity of wastes generated. This policy statement is the first formal step in meeting NTC's waste minimization objective.

This policy applies to all activities on base including contractor activities and requires a commitment from all civilian employees and military personnel to meet this objective. These personnel are encouraged to come forward with any suggestions that will help reduce or eliminate waste and the use of hazardous materials.

A Pollution Prevention Team will be established, which will help this command achieve its pollution prevention objective through implementation of the activity Pollution Prevention Plan. NTC will also establish a program of training and procedures for hazardous material and waste tracking.

This Plan will be reviewed annually by the Public Works Officer for:

- an assessment of the progress toward Plan goals;
- revisions and updating to include pollution prevention technological advances; and
- process modifications.

OPNAVINST 4110.2 set a goal of 50 percent reduction in HW generation by 1992, which was achieved by NTC Orlando. The present Federal agency goal, as established by Executive Order 12856, is a 50 percent reduction in toxic chemical releases and off-site transfers of toxic chemicals by 31 December 1999, when compared to the baseline year of CY 1994. The ability to achieve this goal at NTC may be compromised by the base closure planned for October 1998.

_____
Captain/Date
Commander, NTC
Naval Training Center, Orlando, Florida

2.0 DEFINITIONS

Acutely Hazardous Waste - A waste that has been found to be fatal to humans in low doses, or, in the absence of data on human toxicity has been shown in studies to have an oral Lethal Dose (LD) 50 toxicity (rat) of less than 50 milligrams of waste per kilogram body weight, an inhalation Lethal Concentration (LC) 50 toxicity (rat) of less than 2 milligrams of waste per liter of air, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams of waste per kilogram body weight or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. LD50 and LC50 are doses and concentrations that cause death in 50% of exposed animals. These wastes are identified in 40 CFR 261.31 by the hazard code "H" and listed in 40 CFR 261.33(e) as the "P" list.

Authorized Use List (AUL) - The list of all HM that is required to support the requirements of a command, facility, or activity, developed per OPNAVINST 4110.2 (NOTAL).

Best Management Practices (BMP) - Term commonly used in the environmental field of water pollution control to indicate any number of practical work techniques to limit the introduction of pollutants to public waters. BMP's are established after achieving a compromise between the environmental ideal (no pollution whatsoever) and that which is achievable from an economic and operational standpoint. Emphasis, however, is on the best environmental solution.

Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) - CHRIMP is a successful methodology to achieve life-cycle hazardous material control and management (HMC&M) and pollution prevention at the command, facility, and activity levels. The Navy CHRIMP manual provides a standardized approach and guidance for the development and implementation of centralized HMC&M practices that result in reductions of HM that is procured, stocked, distributed, and eventually disposed of as waste.

Defense Reutilization and Marketing Office (DRMO) - The organization that is responsible for assisting in the disposal and removal of hazardous waste materials when private contractors cannot accept the material.

Hazardous Material (HM) - Any material that is regulated as a HM per 49 CFR 173.2,

requires a material safety data sheet (MSDS) per 29 CFR 1910.1200, or which during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components which meet or have the potential to meet the definition of a HW as defined by 40 CFR 261 Subparts A, B, C, or D. In general, HM is defined as any material, which because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial hazard to human health or the environment. Included in this definition are all extremely hazardous substances, hazardous chemicals, hazardous substances, and toxic chemicals.

Hazardous Substance (HS) - Any substance listed in Table 302.4 of 40 CFR 302.

Hazardous Waste (HW) - Any discarded solid waste (liquid, solid, or gaseous) that meets the definition of HM and/or is designated a hazardous waste by EPA, state HM/HW control authorities, or the Navy. In accordance with RCRA, a solid waste is a listed hazardous waste if it is specifically listed in 40 CFR 261.31, 261.32, or 261.33, or a characteristic hazardous waste if it exhibits the characteristics of ignitability, corrosivity, reactivity, or toxicity per the Toxicity Characteristic Leaching Procedure (TCLP) listed below.

- Ignitability - A solid waste exhibits the characteristic of ignitability if a representative sample has any of the following properties:

  i. It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, that has a closed cup flash point less than 60 degrees C (140 degrees F);

  ii. It is not a liquid and is capable under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes, and when ignited, burns so vigorously and persistently that it creates a hazard;

  iii. It is an ignitable compressed gas; or

  iv. It is an oxidizer.

  Ignitable wastes are assigned an EPA Hazardous Waste Number D001.

- Corrosivity - A solid waste exhibits the characteristic of corrosivity if a representative sample of the material has any of the following properties:

i. It is aqueous and has pH less than or equal to 2.0 or greater than or equal to 12.5; or

ii. It is a liquid that corrodes steel at a rate greater than 6.35 mm per year at a test temperature of 55 degrees C (130 degrees F).

Corrosive wastes are assigned the EPA Hazardous Waste Number D002.

- Reactivity - A solid waste exhibits the characteristic of reactivity if a representative sample of the material has any of the following properties (30 TAC 335.1, 40 CFR 261, Subpart C):

  i. It is normally unstable and readily undergoes violent change without detonating;

  ii. It reacts violently with water;

  iii. It forms potentially explosive mixtures with water;

  iv. When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

  v. It is a cyanide or sulfide-bearing material that when exposed to pH conditions between 2.0 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.

  vi. It is capable of detonation or explosive reaction if it is subjected to a strong ignition source, or is heated under confinement;

  vii. It is readily capable of explosive detonation or reaction at standard temperature and pressure; or

  viii. It is a forbidden explosive or a Class A or Class B explosive as defined in 49 CFR 173.51, 173.53, or 173.88, respectively.

  Reactive materials are assigned EPA Hazardous Waste Code Number D003.

- Toxicity - A material exhibits the characteristic of toxicity, as determined by the Toxicity Characteristic Leaching Procedure (TCLP), if the extract from a representative sample of the material contains any of the contaminants in 40

CFR 261.24 at a concentration greater than the respective value given in the table. Some of the contaminants are chromium, cadmium, lead, mercury, barium, silver and certain pesticides and solvents. A solid waste that exhibits the characteristics of TCLP, but is not a listed hazardous waste, has an EPA Hazardous Waste Number corresponding to the toxic contaminant causing it to be hazardous (30 TAC 335.1, 40 CFR 261, Subpart C).

Hazardous Waste Unit - Each maintenance contractor, department, tenant command, other tenant activity, or station activity whose activities or processes create or originate hazardous wastes.

Hazardous Waste Handler - The Unit Hazardous Waste Manager's assistant who handles, collects and transfers HW under supervision of the Unit Hazardous Waste Manager or Assistant Manager.

Hazardous Waste Wastestream - A description based on analytical testing and/or generator knowledge of a specific hazardous waste. Wastestreams for specific hazardous wastes are assigned a wastestream number.

Incompatible HM/HS/HW - Any two materials that will react with each other to produce undesirable products, violent reactions, and/or toxic fumes.

Industrial Source Reduction (Source Reduction) - Any practice which:

- Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, and disposal;

- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

Industrial Pollution Prevention - A combination of industrial source reduction and toxic chemical use substitution. It does not include any treatment of pollutants, off-site recycling, disposal, or transfer of pollution from one medium to another.

Listed Hazardous Wastes - Listed hazardous wastes are identified in 40 CFR 261.31, 261.32 and 261.33.

Other Regulated Materials (ORM) - "ORM-D material" means a material such as a consumer commodity, which, although otherwise subject to Subpart D of 49 CFR Part 173, presents a limited hazard during transportation due to its form, quantity and packaging. It must be a material for which exceptions are provided in the 172.101 Table. Each ORM-D material and category of ORM-D material is listed in the 172.101 Table.

Plan of Action and Milestones - Designed to develop pollution prevention goals and deadlines for completion of those objectives.

Pollution Prevention - Source reduction and other practices that reduce or eliminate the creation of pollutants through:

- Increased efficiency in the use of raw materials, energy, water, or other resources;

- Protection of natural resources by conservation.

Reclaimed - A material is considered reclaimed if it is processed to recover a usable product or to regenerate a material.

Recycled - A material is recycled if it is used, reused or reclaimed.

Toxic Chemical - Any substance listed in 40 CFR 372.65.

Toxic Chemical Use Substitution - Replacing toxic chemicals with less toxic chemicals. Examples include substituting a toxic chemical in an industrial process with a material of lower toxicity or reformulating a product to decrease the use of chemicals associated with risks to human health or the environment.

Toxic Chemical Use Reduction - The reduction, avoidance, and elimination of the use of toxic chemicals in processes and/or products to reduce overall risks to the health of workers, consumers, and the environment without shifting risks between workers, consumers, or parts of the environment.

UN/NA - Department of Transportation identification numbers assigned to hazardous materials are preceded by either a "UN" or "NA". The identification numbers are indexed to response instructions for use in the event of an accident. Those preceded by a "UN" are associated with descriptions considered appropriate for international shipments as well as domestic shipments. The "NA" designation is limited to use in the United States and Canada only.

Waste Minimization - Reduction in wastes generated through source reduction and recycling activities. This term excludes treatment of wastes and energy recovery.

3.0 EXECUTIVE SUMMARY

Naval Training Center (NTC) Orlando, which is located in Orlando, Florida, covers approximately 2000 acres and includes the Naval Training Center, Navy Annex, Herndon Annex and Area C. The Center conducts specialized training for United States Navy personnel including undersea ordnance, signalmen, quartermaster, nuclear propulsion and electronics. The base is scheduled to close in October 1998. NTC's Naval Construction Battalion Unit and Recruit Training Command closed during calendar year 1994.

This Plan has been prepared to assist NTC Orlando in meeting its hazardous waste reduction goals as directed by the Chief of Naval Operations. The CNO has directed all Naval activities to implement a Pollution Prevention Plan. The requirements for this program are presented in Chapter 3 of the Environmental and Natural Resources Program Manual, OPNAVINST 5090.1B dated 1 Nov 1994 (Appendix A).

This policy is driven by federal laws and regulations, which require pollution prevention measures be adopted by all generators of hazardous wastes. Under the Resource Conservation and Recovery Act (RCRA) of 1976, generators are required to certify on hazardous waste manifests and annual reports that they have undertaken efforts to minimize the generation of hazardous wastes. In addition, minimization efforts must be reported to the U.S. Environmental Protection Agency (EPA) in biennial reports of hazardous waste generation data. A full description of regulatory requirements is provided in Section 4.0.

More recently, the Executive Order 12856 of August 1993 requires that all federal facilities have a written Pollution Prevention Plan by the end of calendar year 1995 regarding each generator's steps to achieve HW reduction. Many states are now passing hazardous waste minimization regulations of their own, some of which are more stringent than federal regulations. However, the State of Florida has adopted EPA regulations.

There are several reasons behind this trend towards pollution prevention legislation. One is the diminishing capacity of a limited number of waste disposal sites. Due to regulatory restrictions and adverse public opinion, the number of permitted HW disposal sites has decreased over the years. Conversely, the amount of HW has been on the increase. The result is rapidly increasing costs for disposal of these wastes. The more hazardous waste NTC produces, the higher the potential for contamination of the environment. The methods

of HW minimization are summarized as follows:

1) Eliminate or reduce the hazardous materials used at the source;
2) Substitute a less hazardous material in the process;
3) Change the process or the equipment to reduce hazardous waste generated;
4) Recycle, recover and/or reuse the hazardous materials;
5) Eliminate or reduce expired shelf life and excess hazardous materials;
6) Improve housekeeping in and around the waste generating process; and
7) Dispose only as a last resort. The ultimate goal is to eliminate hazardous waste disposal by eliminating the use of hazardous materials in the process.

The amount of hazardous waste generated by NTC today is less than 50% of what it was in 1991. The trend presented in Figure 1 should be continued. The costs to dispose of HW are also decreasing as shown in Figure 2.

However, in 1992 NTC generated the lowest amount of HW in four years, but reported the highest cost for disposal. This inconsistency may be due to a cost carry over from 1991, when the amount of waste generated was at a four year high. In addition, there may have been more waste disposed in 1992 than was reported that year.

A historical comparison of the wastes generated by category is shown in Figure 3. This graph presents the specific types of wastes that were generated in the last four years. There has been much progress made by NTC to reduce the quantity and toxicity of wastes generated on base.

There were three types of waste of which NTC generated over 5,000 pounds per wastestream in 1991 and 1993, and which have now been greatly reduced, eliminated or recycled as presented in Figure 3. The three types of waste were:

- Petroleum Naphtha
- Waste Paint

Figure 1 - NTC Orlando

Total Pounds of Hazardous Waste Generated Per Calendar Year

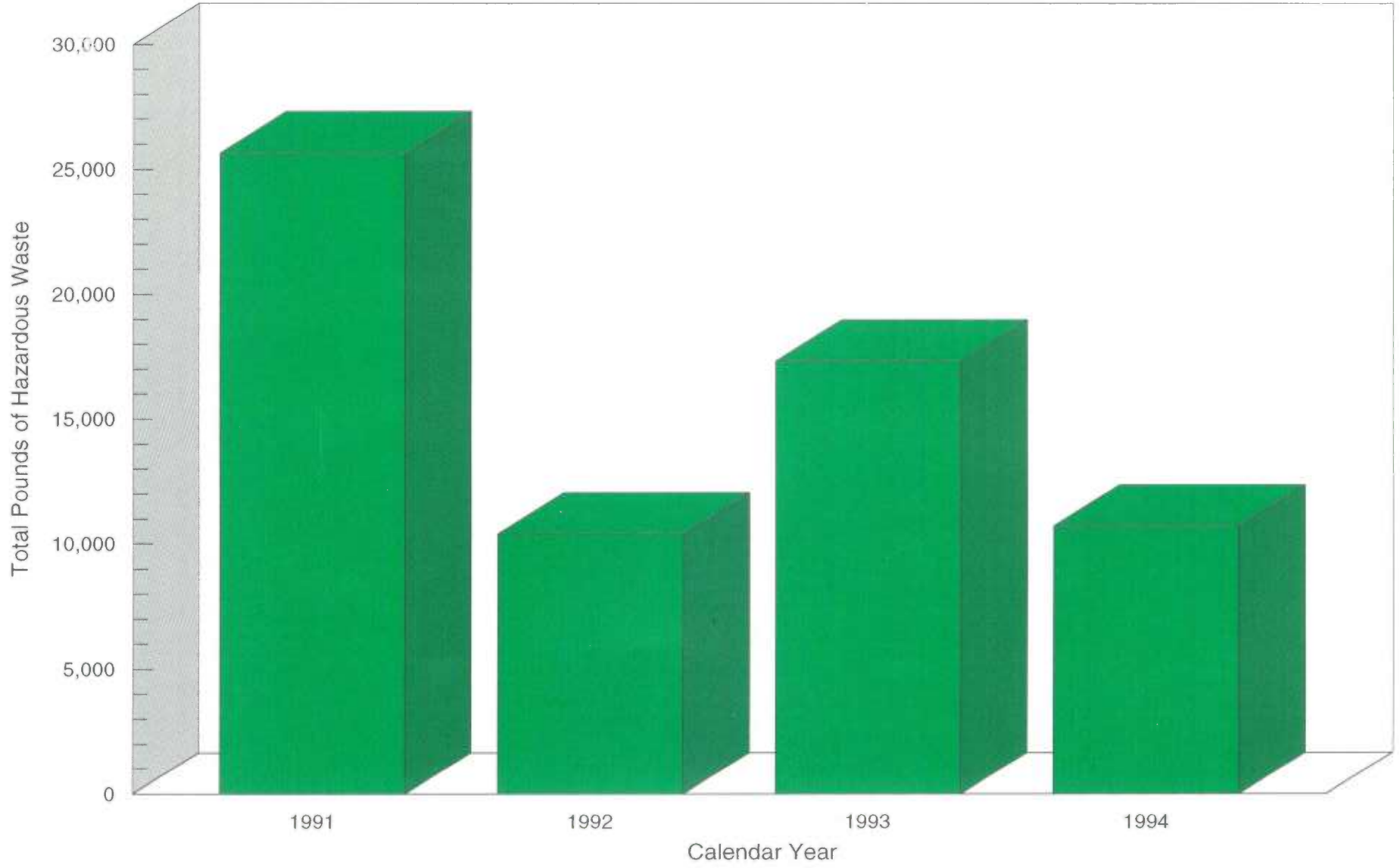


Figure 2 - NTC Orlando

Total Hazardous Waste Disposal Costs Per Calendar Year

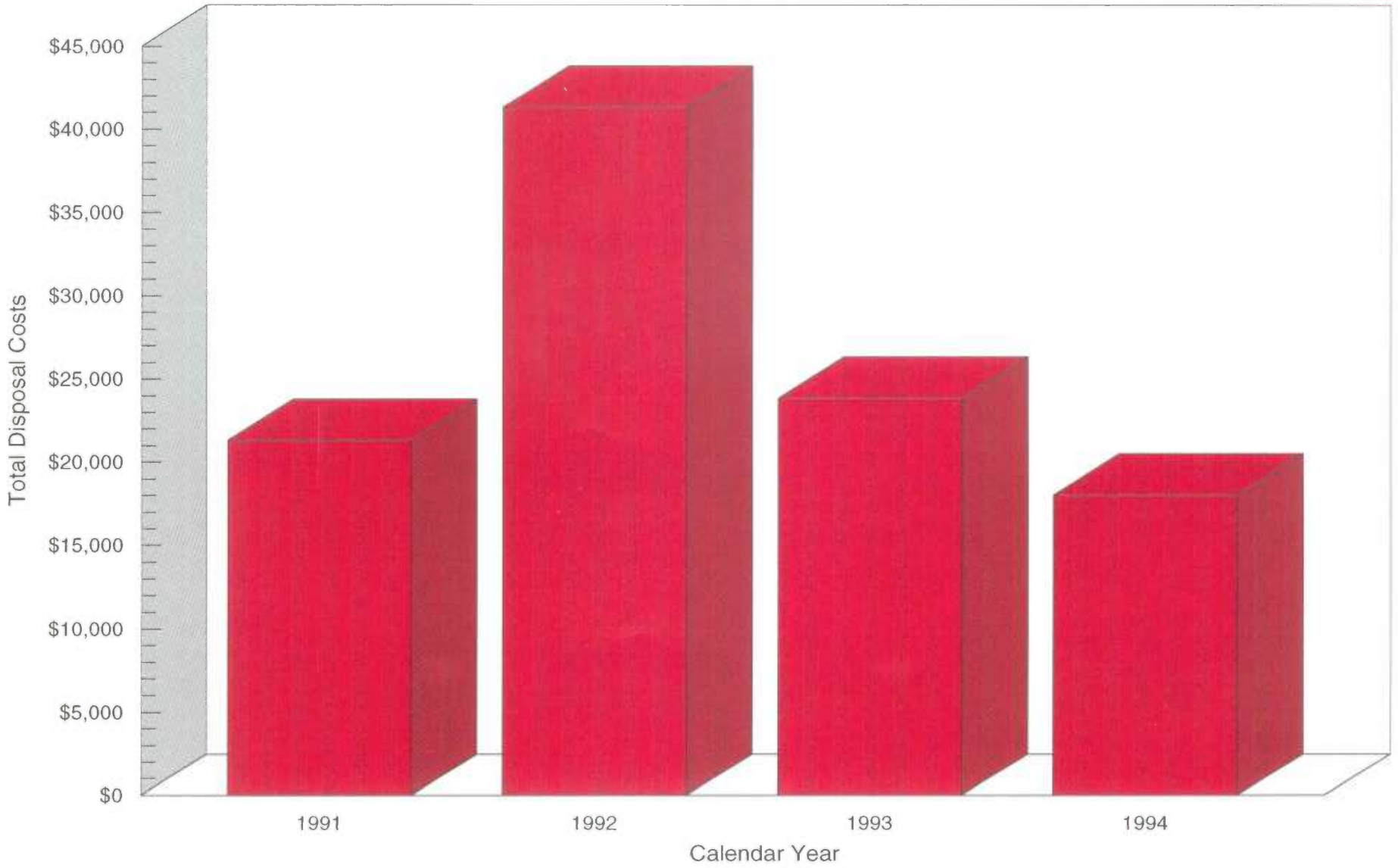
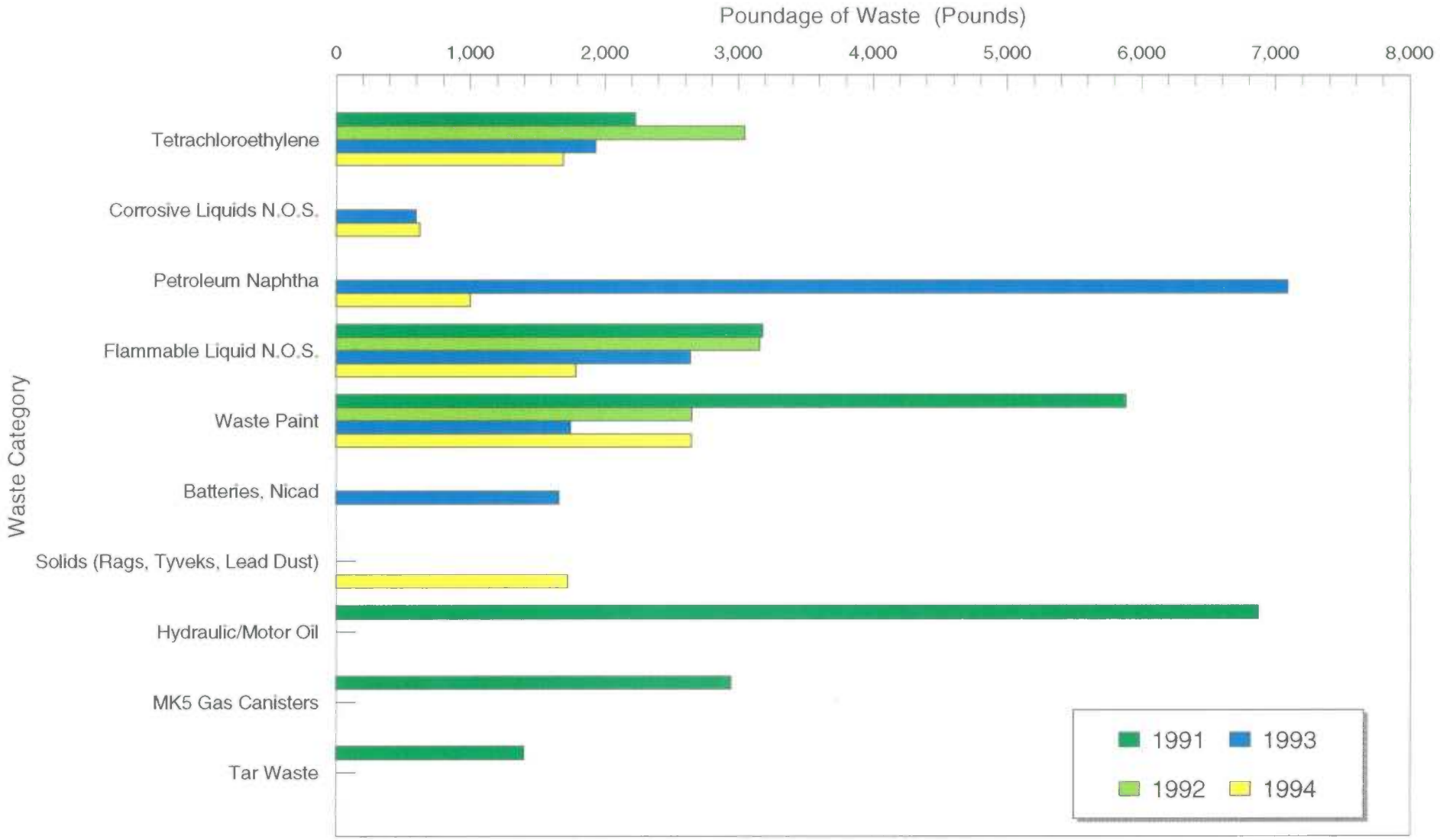


Figure 3 - NTC Orlando

Historical Comparison of Hazardous Waste Generated By Category



Note: Only Generated Wastes In Excess of 500 Pounds Are Shown.

- Hydraulic/Motor Oil

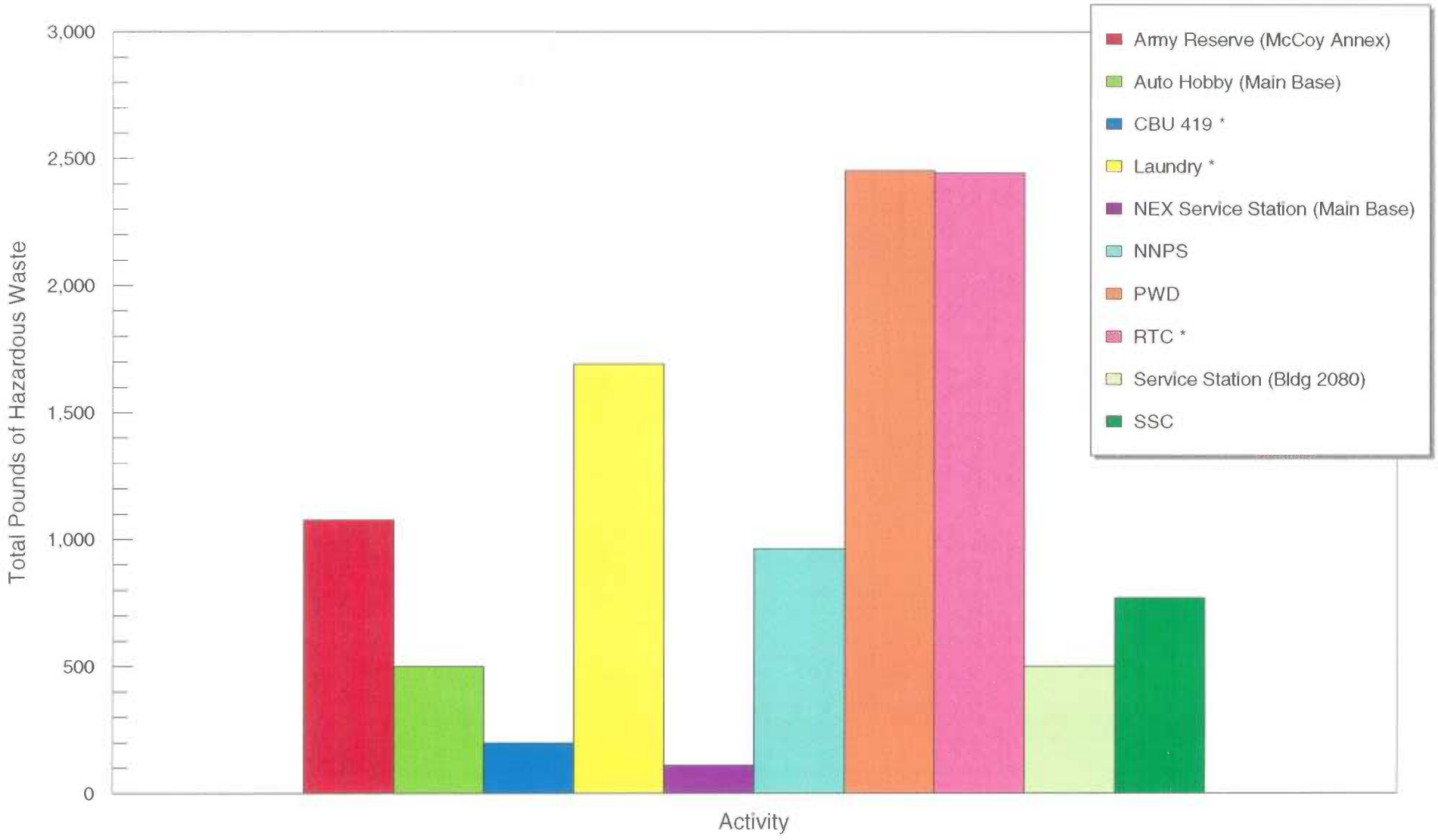
For 1994, the total hazardous wastes that were generated by each activity are presented graphically in Figure 4. Correspondingly, the percent of HW generated on base by each activity is presented in Figure 5. Figures 4 and 5 both indicate the activities that have now closed and that accounted for 40% of the HW generated at NTC. The major contributors to the HW stream targeted for reduction assessment are the Public Works Department (PWD), the Army Reserve, the Navy Nuclear Power School (NNPS), the Service School Command (SSC) and the Auto Hobby Shop.

Opportunities for reduction of hazardous wastes are presented in Section 5.0. Methods for minimizing material use are presented in Appendix B in the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP), which NTC is implementing by developing and using a Hazardous Material Control System. The driving force behind the requirements for this Plan, Executive Order 12856, is provided as Appendix C.

The subsequent Sections of this Plan present Plan Management, shop specific recommendations, Plan of Action and Milestones, and Training Program requirements.

Figure 4 - NTC Orlando

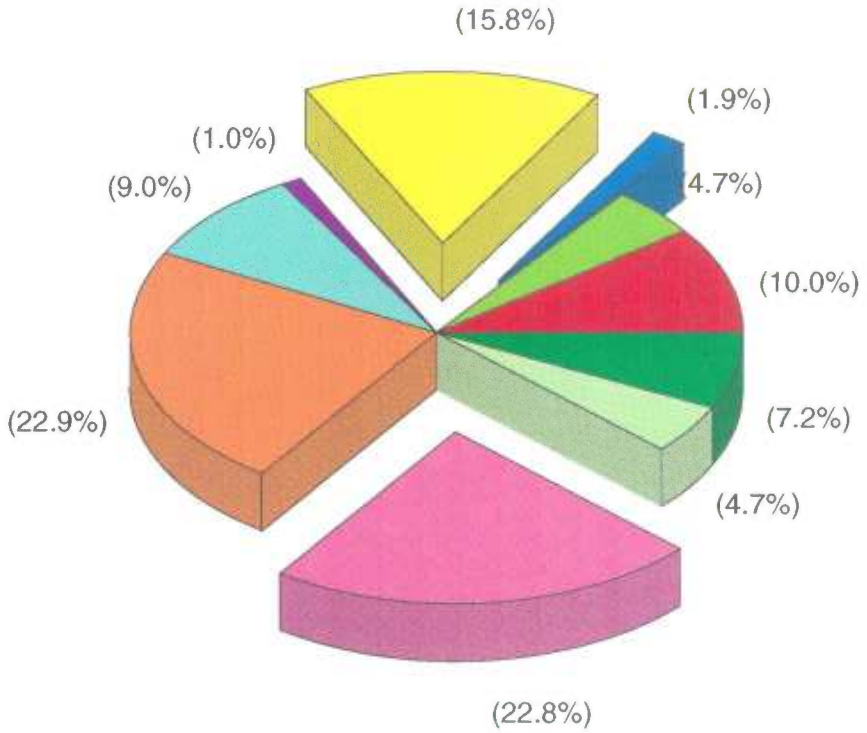
1994 Total Hazardous Waste Generated by Activity



* These facilities closed during calendar year 1994 and will no longer be generating waste.

Figure 5 - NTC Orlando

Percent of Hazardous Waste Generated in 1994 By Activity



* These facilities closed during calendar year 1994 and will no longer be generating waste.

4.0 PLAN MANAGEMENT

The development of this Plan includes input from all levels of management and operations and implements the Commander, NTC's policy presented in Section 1. This section describes the administrative procedures associated with the Plan as well as the objectives, regulatory requirements, and strategy of this Pollution Prevention Plan. This Plan also meets the requirements for a hazardous waste minimization plan.

4.1 Hazardous Waste Minimization Committee

All base personnel share the responsibility of participating in NTC's Pollution Prevention Program. NTC's Hazardous Waste Minimization Committee (HWMC) will ensure that all personnel are participating in the implementation of the Pollution Prevention Plan. This committee will act as the supervisors for ensuring that the POA&M's for recommendations and training and awareness are carried out on schedule. The Hazardous Waste Minimization Committee has been organized to include the same members as are on the Hazardous Material Control and Management Committee including but not limited to HAZMAT coordinators, Public Works, Supply, Environmental, and Occupational Safety and Health Department. NTC has already reduced their hazardous wastes by 50% since 1991, and with the implementation of the recommendations described in this Plan, the amount of hazardous wastes can be reduced even further.

The following is a list of the present and new duties of the Hazardous Waste Minimization Committee. Pollution Prevention will be an additional task added to the Committee's responsibilities.

- Review all hazardous waste minimization activities on base
- Provide management support of hazardous waste minimization activities
- Take actions to continue to achieve the Department of the Navy waste reduction goals
- Approve and implement selected hazardous waste minimization measures
- Review all recommendations in the Pollution Prevention Plan
- Track the POA&M's and ensure the deadlines are being met
- Measure the progress in waste reduction/emission releases
- Review and reward pollution prevention suggestions

- Ensure employee participation in the implementation of the Pollution Prevention Plan
- Conduct annual reviews of the Pollution Prevention Plan until base closure
- Assist in making judgements and trade-offs regarding alternative materials/processes
- Distribute regularly scheduled status reports documenting the successes as well as the failures of the pollution prevention program
- Review requests for open purchases of hazardous materials and approve or recommend a substitute
- Review outside technology transfer sources and provide feedback on successes and failures at NTC
- Implement the Pollution Prevention Plan

The team shall meet quarterly unless it is deemed necessary to meet more frequently by the Commander, NTC and/or the Committee. The Hazardous Waste Minimization Committee members will be available to base personnel for support in implementing the Pollution Prevention Plan. Minutes of the meetings will be recorded and approved by the Commander, NTC.

PLAN OF ACTION AND MILESTONES OF THE HAZARDOUS WASTE MINIMIZATION COMMITTEE

ACTION	RESPONSIBLE ACTIVITY	ESTIMATED COMPLETION DATE
First Meeting to Discuss Pollution Prevention Plan	Hazardous Waste Minimization Committee	July 1995
Review CHRIMP	Hazardous Waste Minimization Committee	August 1995
Submit new Authorized Use List Using Pollution Prevention Data	Safety	November 1995
Review Each Department's Progress Towards Meeting Individual POA&M's and Training & Awareness Schedule	Individual Departmental Hazardous Waste Minimization Committee Members	Quarterly Beginning July 1995

ACTION	RESPONSIBLE ACTIVITY	ESTIMATED COMPLETION DATE
Establish & Review Update Procedure to Achieve Consistency with Other Plans	HWMC	September 1995
Update Pollution Prevention Plan	Every Work Center/Shop	June 1996
Update Authorized Use List	Safety	January 1996

4.2 Annual Review and Progress Meetings

The HWMC will demonstrate continuing commitment to the program by conducting annual reviews of the Pollution Prevention Plan. The results of these annual reviews will be communicated to all employees through written announcements and meetings. Program successes will be recognized and any changes in objectives or policies will be announced and explained.

The annual review of the Pollution Prevention Program will be scheduled within the same time frame each year. This review will be conducted by the HWMC who will track the technical and economic effectiveness of the recommendations made, and rework or modify options that do not meet performance expectations.

The success of the program will be measured in one or a combination of the following methods:

- Changes in quantity of waste shipped off-site
- Changes in quantity of materials brought on site
- Changes in quantity of waste generated
- Analysis of specific pollution prevention projects
- Changes in the amount of toxic constituents released
- Changes in material toxicity
- Implementation/changes to the recycling programs

An economic analysis can be made in the annual review, and will include the initial cost of initiating each pollution prevention initiative, the operating and material expenses including

initial training costs, and the volume and cost of disposed wastes. Where possible, these costs can be compared to the former cost of the operation to determine economic advantages. Such information will be used for future initiatives and budget determinations. HWMC will implement a method of documenting and tracking data and progress of the Pollution Prevention Plan.

4.3 Integrating Pollution Prevention into Base-Wide Policy

This Pollution Prevention Plan must be coordinated with established local procedures such as the Hazardous Waste Management Plan, the Hazardous Material Control and Management Plan, Contingency Plans, Wastewater Management Plans, Solid Waste Management Plans, etc., to eliminate overlaps and conflicts, if any. This Plan can be included by reference into other local instructions. This Pollution Prevention Plan does not take the place of or supersede these other instructions, instead, it complements them by establishing good work practices within the regulatory framework. The HWMC will establish a review and update procedure to achieve coordination among all local procedures as one of the first steps toward integrating this Plan into-base wide policy. Tenants or contractors who have their own procedures will also update and coordinate their procedures with this Plan. A Plan of Action as follows will be established to effect the implementation of the Pollution Prevention Plan.

1. Distribute the Pollution Prevention Plan to all work centers.
2. Ask for suggestions for changes and improvements.
3. Inspect work centers on a periodic basis.

4.4 Objectives

The Plan objectives are as follows:

- To implement the HW Minimization Policy;
- To meet DoD goals for reduction of waste streams according to 1993 Executive Orders; and
- To continue to implement procedures and processes that avoid the generation of waste entirely to all media or, at least, minimize the ultimate impact of necessary waste streams on the environment.

As required by OPNAVINST 5090.1B, facilities are required to reduce the amount of HM

used and HW generated by up-front HM control. Implementation of CHRIMP (Appendix B) will allow NTC to meet this requirement.

Implementation of CHRIMP at NTC involves several key elements such as developing an accurate and complete Authorized Use List (AUL), full base utilization of the HAZMIN facility, proper execution and management of the Hazardous Inventory Control System (HICS), as well as proper command support for the program. Additional information on CHRIMP implementation is available in Appendix B, Section 3.4.

4.5 Regulatory Requirements

NTC pollution prevention activities are directed at the following regulatory concerns:

- Compliance with state and local laws and ordinances; and
- Compliance with national requirements including Federal, DoD, and Navy directives.

In addition, this Plan addresses the reduction of government facility liability, cost of waste treatment and disposal, and exposure to criminal liabilities.

Specifically, the Plan addresses the following regulations:

Federal

- Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1982

  HSWA requires generators of hazardous waste to perform the following tasks:

  - Establish programs to reduce the volume and toxicity of the hazardous waste they generate;
  - Certify on each hazardous waste shipment manifest that they have a program in place to minimize hazardous wastes; and
  - Include hazardous waste minimization information in their biennial reports.

- The Pollution Prevention Act of 1990 (PPA)

  This Act mandated changes to EPA programs to consider the multimedia issues associated with pollution prevention and to encourage state agency training and information transfer for pollution prevention. The PPA and the Federal Facilities Compliance Act were the seeds that gave rise to the Executive Orders for federal facilities indicated below.

- Federal Facilities Compliance Act of 1990 (FFCA)

  This Act authorizes state and local governments to impose fines and penalties on federal facilities for violation of RCRA, HSWA, and CWA

Department of Defense Policy

- DoD Directive 4210.15 Hazardous Material Pollution Prevention (HMPP) dated July 27, 1989

  This directive emphasizes eliminating the use of toxic or hazardous materials as the preferred method of meeting DoD goals to reduce exposure to hazardous materials and waste and reduce cost.

Department of the Navy Policy

- OPNAVINST 5090.1B Environmental and Natural Resources Program Manual dated November 1, 1994.

  This instruction requires the preparation of a written pollution prevention plan for all facilities by the end of 1995. This instruction also requires all Navy facilities to have a written hazardous waste minimization plan when certifying the existence of a program on hazardous waste shipment manifests.

- OPNAVINST 4110.2 Hazardous Material Control and Management (HMC&M) dated June 20, 1989

This instruction establishes Navy policy guidance and requirements for the life-cycle control and management of hazardous material procurement and any resultant hazardous waste generated.

State

- Waste Minimization Program

In the State of Florida, a Waste Minimization Program is required for large quantity generators and owners and operators of hazardous waste treatment, storage, or disposal (TSD) facilities. Large quantity generators and owners of TSDs must certify that the program is in place. Small quantity generators are not subject to the program certification. Instead, small quantity generators must certify on the HW manifest that they have made a good faith effort to minimize waste generation.

A Waste Minimization Program meeting the certification requirements of large quantity generators and TSDs in the State of Florida includes the elements listed below. For small quantity generators the Program elements may be used for guidance.

- Annual certification that a program is in place to reduce the volume and toxicity of hazardous waste;
- Certification that the method of hazardous waste treatment, storage, or disposal minimizes the present and future threat to human health and the environment;
- Facility-wide management policy;
- Analysis of current chemical use and waste generation quantities;
- Establishment of goals for waste reduction in future years;
- Prioritization of waste streams and technologies to implement goals;
- Evaluation of potential technologies, procedures, and training programs to assist the facility in meeting its goals; and
- Implementation plans and schedule.

Executive Orders

- Executive Order 12856 - Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements

  On August 3, 1993, Executive Order 12856 was signed by the President of the United States. This Order dictated compliance by federal facilities with "Right-to-Know" laws, otherwise known as the Emergency Planning and Community Right-to-Know Act (EPCRA). These laws were originally found in Title III of the Superfund Amendments and Reauthorization Act (SARA Title III). This order also required the following:

  - Reduction of total releases to the environment and off-site transfers of toxic chemicals by 50 percent by December 31, 1999. This reduction must be measured using as a baseline the first EPCRA Section 313 report or the results of the 1994 reporting year;

  - Written pollution prevention strategy and plan; and

  - Emergency Planning and Community Right-to-Know reporting responsibilities.

- Executive Order 12873 - Federal Acquisition, Recycling, and Waste Prevention

  On October 20, 1993, Executive Order 12873 was signed by the President. This Order dictated each Executive agency to comply with the following items:

  - Incorporate waste prevention and recycling into daily operations and expand markets for recovered materials;

  - Use environmentally preferable products and services and implement cost-effective procurement preference programs to obtain those products;

  - Create high level environmental executive positions in each agency to expedite and implement this Order; and

- Each agency must establish goals for solid waste prevention and recycling to be achieved by the year 1995.

4.6 Strategy

Over the last twenty years, environmental programs have focused on end-of-the-pipe treatment as a result of heavy "command and control" requirements of federal and state regulations. The regulations and resulting programs have not focused on preventing the generation of waste streams but, rather, have assumed that the waste streams are a necessary part of normal manufacturing or processing operations. With promulgation of the Pollution Prevention Act of 1990, the focus was redirected to prevention through source reduction.

Continuing the redirection of efforts, DoD directives were issued that called for the establishment of Pollution Prevention Plans. In addition, two Executive Orders were issued in 1993 and a memo in August 1994, that further clarified the direction expected from federal facilities.

NTC began its formal efforts in response to the new regulatory requirements in 1995 with a HW minimization assessment and development of this Plan. Individual shop efforts prior to the implementation of this Plan are presented in Section 5.0. The next step is to implement this Plan. The strategy now includes the following items:

- Establishment of the latest assessment results as the baseline against which to measure all future waste minimization efforts;
- Initiation of base-wide and workcenter prevention and reduction activities recommended in this Plan;
- Updating baseline data to determine progress towards program goals; and

The key principles to be upheld in this Plan are as follows:

- To encourage multimedia approaches;
- To identify and overcome obstacles to prevention;
- To expand voluntary participation including partnership arrangements with suppliers, vendors, and contractors;
- To develop partnerships with federal and state agencies;

- To train civilian and military personnel in this policy, Plan and objectives;
- To foster experimentation with usage of less toxic materials subject to requirements of U.S. Navy specifications and procedures;
- To encourage the use of clearinghouse activities by operations personnel; and
- To incorporate Total Quality Leadership Techniques into all Pollution Prevention activities.

The barriers that may surface in implementing this Pollution Prevention Plan or reaching the stated goals are lack of funding and base closure. During base closure waste generation can potentially increase due to cleaning out of Hazardous Material and Hazardous Waste lockers.

5.0 SHOP SPECIFIC RECOMMENDATIONS

A waste minimization survey was conducted at NTC Orlando in January 1995. The following describes the shops included in the waste minimization survey and the survey findings.

5.1 Service School Command, Building 304

5.1.1 Shop Process Description

This shop is an Underwater Weapons School. The Point of Contact (POC) can be reached at (407) 646-4319. This school is due to close in 1995.

5.1.2 Process Wastes

This shop generates the following:

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Safety Kleen Solvent	480 pounds	recycled	Safety Kleen

5.1.3 Previous Minimization Efforts

- None.

5.1.4 Recommendations

- Replace Safety Kleen Solvent with a non-hazardous substitute;
- Stage rags by reusing handrags for wiping equipment then spills; and
- Participate in rag leasing program currently in use at other shops.

5.1.5 Options Considered But Not Recommended

- None.

5.2 Navy Exchange Service Station, Building 109

5.2.1 Shop Process Description

This shop's activities include motor vehicle repair, tire and battery replacement, oil and antifreeze changes. Freon recovery is also conducted. General preventative maintenance is provided including parts cleaning and brake repair. The shop services approximately 400 automobiles per month. The POC for this shop can be reached at (407) 646-4883.

5.2.2 Process Wastes

The shop generates the following wastes:

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Waste Oil	31,185 lbs	recycled	National Oil Co.
Antifreeze	1155 lbs	recycled	National Oil Co.
Oil Filters	3080 lbs	recycled	National Oil Co.
Batteries	13,920 lbs	recycled	Johnson Controls
Tires	1939 tires	recycled	McGee Tires
Mineral Spirits	300 gallons	recycled	Safety Kleen

5.2.3 Previous Minimization Efforts

- Replaced sodium hydroxide concrete cleaner with Bob-Cat biodegradable cleaner;
- Participating in rag leasing program;
- Reclaiming antifreeze on occasion (Flxible™ System);
- Recycling antifreeze, oil filters, batteries and have tires recapped when possible; and
- Currently recovering freon.

5.2.4 Recommendations

- Utilize Flxible™ antifreeze recycler, currently stored in this shop; and
- Replace Safety Kleen mineral spirits with a non-hazardous substitute.

5.2.5 Options Considered But Not Recommended

- Consolidate antifreeze recycling at one central location for all users on base.

5.3 MWR Auto Hobby Shop, Building 129

5.3.1 Shop Process Description

This shop provides preventative maintenance on personally owned vehicles including: oil changes, spark plug changes, ball joints, air conditioning (A/C) condenser and compressor, suspensions, brake systems and engine rebuilding. Either the patron can repair the car or the shop mechanics can provide these services. The POC for this shop can be reached at (407) 646-5920 or -5357 or -5689.

5.3.2 Process Wastes

The shop generates the following wastes:

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Oil	5200 gallons	recycled	National Oil Co.
Safety Kleen Solvent	100 gallons	recycled	National Oil Co.
Antifreeze	275 gallons	recycled	National Oil Co.

5.3.3 Previous Minimization Efforts

- Recycling oil, oil filters and antifreeze.
- Recovering freon.

5.3.4 Recommendations

- Participate in rag leasing program;
- Recycle batteries; and
- Substitute non-hazardous parts cleaner for petroleum naphtha.

5.3.5 Options Considered But Not Recommended

- Purchase Flxible™ Antifreeze recycler (or share unit with Navy Exchange Service Station which is infrequently used).

5.4 MWR Auto Body Shop, Building 129

5.4.1 Shop Process Description

This shop repairs automobile collision damage: 50 total cars painted per year and 100 partial cars painted per year. The POC for this shop can be reached at (407) 646-4597.

5.4.2 Process Wastes

The shop generates the following wastes:

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Paint	16 gallons	Storage	N/A
Thinner	N/A*	Storage	N/A
Rags	N/A	Dumpster	N/A
Paint Chips	N/A	Dumpster	N/A

* Not Available

5.4.3 Previous Minimization Efforts

- Thinner recycler installed for paint gun; and
- Using dry paint booth system.

5.4.4 Recommendations

- Vacuum, containerize, and properly dispose of paint chips;
- Investigate use of water based primer;
- Participate in rag lease program;
- Do not dispose of waste paint contaminated debris in dumpster;
- Stage rags such as reusing hand rags for wiping auto parts and then for spill clean up. Use cheese cloth where possible to reduce the weight and volume of hazardous waste.

5.4.5 Options Considered But Not Recommended

- Alternative paint removal system such as plastic media blast (PMB) with vacuum recovery for paint capture and blast media recycling.

5.5 Navy Nuclear Power Training Command, Building 350 Supply Department

5.5.1 Shop Process Description

This supply shop is involved with the painting of class rooms. The school interior is painted annually. The POC for this shop can be reached at (407) 646-4880 or -5675.

5.5.2 Process Wastes

- Latex Paint - 260 gal/yr.
- Spray Paint - 6 cans

5.5.3 Previous Minimization Efforts

- Use environmentally safe spray paint (no chlorofluorocarbons);
- Use Simple Green for cleaning instead of more corrosive alternatives;
- Water-based handcleaner used instead of solvent-based cleaner;
- Use rag leasing program; and
- Using latex paint instead of solvent-based.

5.5.4 Recommendations

- Collect aerosol paint cans for recycling;
- Use bulk raw material from refillable pump spray bottle instead of aerosol cans;
- Stage rags and reuse hand rags for equipment cleaning and then cleaning spills. Use cheese cloth if applicable.

5.5.5 Options Considered But Not Recommended

- Eliminate use of spray paint.

5.6 Navy Nuclear Power Training Command, Building 350 Print Shop

5.6.1 Shop Process Description

This shop uses two HPS AB Dick template makers to produce 10,000 prints per hour. The printer rollers are washed clean to remove imprints. The POC for this shop can be reached at (407) 646-5157.

5.6.2 Process Wastes

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Multilith Blanket Wash	60 gallons	HazWaste	DRMO
Mulitilith Electrostatic Solution Concentrate containing Ferro Cyanide and Hydrogen Cyanide	6 gallons	HazWaste	DRMO
Deglazer	3 gallons	HazWaste	DRMO

5.6.3 Previous Minimization Efforts

- None.

5.6.4 Recommendations

- Substitute the Safety Zone, Offset Roller Cleaner and Blanket Wash (A.B. Dick 4-1200) for the current multilith wash that is being used. Another less preferable option is the Universal Blanket Wash (A.B. Dick 4-4347);
- Replace the Mulitilith Electrostatic Solution Concentrate with Clean Green (A.B. Dick 4-1090);
- Replace current Etch with Blue Etch (4-1015);

- Replace current developer with metal plate developer (4-9014); and
- Replace current cleaner with Printers Grit Hand Cleaner (4-4988).

5.6.5 Options Considered But Not Recommended

- Conduct printing operations off-base.

5.7 Public Works Transportation, Building 2078

5.7.1 Shop Process Description

This shop provides maintenance on motor vehicles, generators, tractors, trailers, and forklifts, including starter changeout, brake repair, and oil and antifreeze changes. The POC for this shop can be reached at (407) 895-3481 or -4421.

5.7.2 Process Wastes

The shop generates the following wastes:

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Waste Oil	N/A*	recycled	National Oil Co.**
Antifreeze	N/A	recycled	National Oil Co.
Batteries	N/A	recycled	GNB Battery Technology
Fuel Filters	N/A	recycled	National Oil Co.
Paint	<5 gallons	disposed	N/A
Contaminated Fuel	55 gallons	recycled	National Oil Co.

* Not Available
** Refined and sold as burner fuel

5.7.3 Previous Minimization Efforts

- Substituted biodegradable cleaner Castrol "Purple Stuff" degreaser for naphtha;
- Eliminated mineral spirits;
- Recycling filters, oil, antifreeze and batteries;
- Participating in rag leasing program; and
- Recovering freon.

5.7.4 Recommendations

- Stage rags to use in progressively more dirty processes;
- Replace Binks and Devalvis paint guns with HVLP gun ($600.00);
- Use paint gun pot liner and/or washers to reduce current thinner use (Liter Kules Equipment Corp. (313)363-8882); and

- Use water based primer.

5.7.5 Options Considered But Not Recommended

- Upgrade wet paint booth to dry system (Capital expense not justified);
- Recycle antifreeze on-site (antifreeze recycled off-site is Form R reportable); and
- Alternative paint removal system such as PMB with vacuum recovery.

5.8 Johnson Controls Air Conditioning Shop, Building 2055

5.8.1 Shop Process Description

This shop maintains 58 air conditioning units per year, including degreasing chiller parts and tower reduction maintenance. This shop also uses 1,1,1-TCA to clean metal components to prevent flash rusting by maintaining a protective oil film. No waste is generated by this metal components cleaning other than fugitive emissions of volatile organic constituents. The POC for this shop can be reached at (407) 896-6224.

5.8.2 Process Wastes

- Used refrigerant oil contaminated with freon - 300 gallons/year to Universal Waste and Transit in Tampa, Florida (813)623-5302.

5.8.3 Previous Minimization Efforts

- Attempted to use substitute for degreasing solvent.

5.8.4 Recommendations

- Participate in rag lease program on base;
- Continue to test non-hazardous substitute for degreasing solvent; and
- Investigate use of ID/4R (Finger Lakes Chemicals) instead of 1,1,1-TCA.

5.8.5 Options Considered But Not Recommended

- None.

5.9 Army Military Intelligence Battalion Motor Pool, Building 2092

5.9.1 Shop Process Description

This shop provides minor maintenance on trucks and other vehicles. The POC for this shop is can be reached at (407) 646-4083.

5.9.2 Process Wastes

- Waste oil and transmission fluid.

5.9.3 Previous Minimization Efforts

- The dry cleaning solvent tank is no longer used;
- Discontinued use of antifreeze; and
- The parts washer is no longer used.

5.9.4 Recommendations

- Stage rags to reuse in progressively more dirty processes;
- Participate in rag lease program on base; and
- Use bulk oil and transmission fluid from refillable containers.

5.9.5 Options Considered But Not Recommended

- None.

5.10 U.S. Army Reserve Motor Pool, Building 7171

5.10.1 Shop Process Description

This shop is located at the McCoy Annex and provides vehicle repair and servicing. All reserve units service vehicles at this location. Painting operations are minimal at this location. Additional services include maintaining brake assemblies. The POC for this shop can be reached at (407) 856-6181.

5.10.2 Process Wastes

This shop generates oil contaminated absorbent pads, antifreeze, batteries, used oil, naphtha, PD-680 and contaminated fuel.

TYPE	QUANTITY/YEAR	DISPOSAL METHOD	COMPANY
Antifreeze	80 gallons	recycled	Safety Kleen
Batteries	lead/acid	recycled	DRMO
Used Oil	700 gallons	recycled	North Florida Oil
Cleaning Solvent PD-680	300 gallons	recycled	North Florida Oil
Oil Contaminated Pads (90 wt gear oil)	2-55 gallon drums, 2 rolls	dumpster	Western Waste
Contaminated Fuel	300-500 gallons	recycled	North Florida Oil

5.10.3 Previous Minimization Efforts

- Lead/acid batteries are reconditioned through a local contract;
- Use oil absorbent pads instead of clay; and
- Crush and recycle oil filters (Oberg Co.)

5.10.4 Recommendations

- Recycle antifreeze on site (purchase unit or obtain unused recycler from NEX Service Station);

- Minimize generation of contaminated fuel by using equipment more frequently to burn fuel (diesel fuel deteriorates);
- Participate in rag lease programs;
- Stage rags to use in progressively more dirty processes;
- Use industrial vacuum (explosion proof) to clean up spills (1-800-688-4437 Tiger-Vac, Inc.); and
- Use non-hazardous substitute for cleaning solvent.

5.10.5 Options Considered But Not Recommend

- None.

5.11 Public Works, Building 7182

5.11.1 Shop Process Description

This mobile shop is based in the McCoy Annex and works mainly in the field out of trucks. The shop performs painting using a paint sprayer. The POC for this shop can be reached at (407) 856-1897.

5.11.2 Process Wastes

- None.

5.11.3 Previous Minimization Efforts

- None.

5.11.4 Recommendations

- Stage rags; and
- Use paint pot liners and/or washers to reduce thinner use (Herkules Equipment Corporation (313)363-8882).

5.11.5 Options Considered But Not Recommended

- Purchase high volume, low pressure paint spray gun ($600.00 cost).

5.12 Hazardous Materials Warehouse, Building 2816

5.12.1 Shop Process Description

This shop stores hazardous materials for distribution to base personnel and has been active since February 1994. This shop is designed to be a centralized hazardous material (HAZMAT) handling operation not including materials or wastes from the laundry, which is now closed, public works pest control, the base print shop and MWR. The POC for this shop can be reached at (407) 646-5901.

5.12.2 Process Wastes

- None.

5.12.3 Previous Minimization Efforts

- Extend shelf life of hazardous materials in storage, so as not to discard too early; and
- Using HICS/Chrimp system.

5.12.4 Recommendations

- Encourage use of environmentally friendly products;
- Encourage bulk materials from refillable pump bottles;
- Recycle empty metal containers;
- Stage rags to reuse hand rags for general cleaning, then spill clean up; and
- Enforce proper waste characterization and labeling procedures prior to acceptance at HAZMAT facility.

5.12.5 Options Considered But Not Recommended

- Centrally locate HAZMAT facility closer to base processes and recycling activities. Incorporate a centralized recycling operation at this facility in addition to hazardous material storage, distribution, turn-in, and solid and hazardous waste accumulation.

5.13 Economic Analysis of Shop Specific Recommendations

The shop specific recommendations presented in this section generally consist of process material substitutions and waste reduction options. Because of the planned base closure, major improvements requiring large capital expenditures were not recommended. The recommendations presented in this section can be implemented without significant cost and, therefore, do not warrant a detailed economic analysis.

6.0 SHOPS CONSIDERED BUT NOT EVALUATED

The following shops were reviewed but not included in the waste minimization field survey because of the minimal amounts of hazardous waste generated at that location, the wastes generated are non-hazardous, or the shop has been closed. Although not included in the survey, the shops that are waste generators are required to comply with the objectives of the NTC Pollution Prevention Plan.

SHOP	REASON FOR EXCLUSION FROM WASTE MINIMIZATION SURVEY
Photo Lab	Minimal amount of waste generated
Public Works Insecticide, Boiler Maintenance, Annex Warehouse	No waste generated
Supply Fuel Branch	Small amount of waste generated when fuel truck is rinsed
Southeastern Chiller Refrigerator	No waste generated
Fire Department	No waste generated
DRMO	Wastes are non-hazardous
Dental Clinic	Minute amount of waste generated
Marina	No waste generated
RTC Print Shop	Closed
Hospital	Small amount of waste generated
Seabees	Closed
Laundry	Closed
Security	Small amount of waste generated

7.0 PLAN OF ACTION AND MILESTONES

Based on a review of each major process generating HW at NTC Orlando, a plan of action has been prepared outlining methods to minimize priority waste streams. The process waste reduction POA&Ms and the responsible activities for NTC Orlando are presented in Table 7.1.

TABLE 7.1
PROCESS WASTE REDUCTION PLAN OF ACTION AND MILESTONES
NTC ORLANDO

PROCESS	PROCESS CODE	WASTE STREAM	PLAN OF ACTION	MILESTONE & RECOMMENDED RESPONSIBLE ACTIVITY
1. Solvent Cleaning & Degreasing	SO[1]	Safety Kleen solvent	Investigate use of alternate thinners, such as PF Degreaser, Citriclean, Simple Green or isopropanol	September 1995 HWMC
2. Fluids Changeout	FC[2]	Solvents in oil, hydraulic fluid/absorbents with freon	Substitute industrial vacuum cleaner system that is explosion proof and dust ignition proof (Tiger-Vac, Inc. - 800/668-4437) to collect fluids and containerize for recycling	Immediately HWMC
			Investigate use of petroleum based lubricants and oils with synthetic lubricants and oils	September 1995 HWMC
			Evaluate methods to collect fluids during servicing operations including a mobile drip pan device for catching fluids at their source	Immediately HWMC
3. Painting Operations	PO[3]	Paint, thinner, paint remover, aerosols	Investigate use of unicoat paint system or high solids paints	September 1995 HWMC
			Use high volume, low pressure (HVLP) paint guns - ACCU-Spray (800/321-5992); Can-Am Engineered Products (800/229-7551)	September 1995 HWMC
			Investigate use of water-based paints	September 1995 HWMC

TABLE 7.1
PROCESS WASTE REDUCTION PLAN OF ACTION AND MILESTONES
NTC ORLANDO

PROCESS	PROCESS CODE	WASTE STREAM	PLAN OF ACTION	MILESTONE & RECOMMENDED RESPONSIBLE ACTIVITY
			Use brush painting by hand for small jobs	Immediately HWMC
			Investigate use of polyester film or tape (3M) for stencilling	September 1995 HWMC
			Use paint gun cleaners to reduce thinner use; Herkules gun washer (313/363-8882)	Immediately HWMC
			Use paint pot liners to eliminate use of solvent to clean-out pot	Immediately HWMC
			Store paints or HM in centralized location to prevent material abandonment, limit HM use, and facilitate tracking inventory	Immediately HWMC
4. Facilities Maintenance	IM[4]	Detergent, cleaning compound, solvents	Terminate unnecessary cleaning operations, especially those requiring the use of solvents	Immediately PUBLIC WORKS
			Use solvent replacement cleaner such as PF Degreaser, Citriclean, Simple Green, or isopropanol (TT-I-735)	Immediately PUBLIC WORKS
			Investigate use of alternate cleaner to replace naphtha (TT-N-95, which has volatile constituents)	September 1995 PUBLIC WORKS

TABLE 7.1
PROCESS WASTE REDUCTION PLAN OF ACTION AND MILESTONES
NTC ORLANDO

PROCESS	PROCESS CODE	WASTE STREAM	PLAN OF ACTION	MILESTONE & RECOMMENDED RESPONSIBLE ACTIVITY
5. Mechanical Paint/Rust Removal	AB[5]	Paint, sand blast	Use power washing technique	Immediately HWMC
			Evaluate collection and reuse wastewater from washing of equipment, vehicles, gear, etc.	September 1995 HWMC
6. Battery Operations	BA[6]	NiCd, lithium and mercury batteries; battery acid	Replace with lead/acid batteries where possible. Suppliers are required to accept and recycle	September 1995 SUPPLY

Process Code Legend
1. SO = Solvent Cleaning
2. FC = Fluids Changing
3. PO = Painting Operations
4. IM = Facilities Maintenance
5. AB = Mechanical Paint/Rust Removal
6. BA = Battery Operations

8.0 TRAINING PROGRAM

Training and awareness are key elements of waste minimization programs. A solid training and awareness program will encourage sound management decisions, improve procedures for data collection, and ultimately result in less hazardous waste generation and significant cost reductions. This program will be managed by the Public Works Department. It is the responsibility of the Commander, NTC to ensure PWD has resources and command support required to implement program.

Training must occur at all levels of the organization and at all stages of program development. While top management has the responsibility to drive program issues, many waste reduction changes will only be possible by training those at the working level. Since personnel at working levels are directly involved with using hazardous and toxic materials, they are a key to achieving true source reduction.

In order for waste minimization awareness training to be conducted in as efficient a manner as possible, NTC should create an atmosphere of cooperative and proactive involvement among its activities by increasing communication and having regularly scheduled waste minimization meetings.

The training portion of the NTC Plan addresses each element necessary to ensure a comprehensive and effective training and awareness program. The goal is to achieve measurable and significant reductions in the use of hazardous and toxic materials and to reduce waste generation at the source through effective education. This plan provides the mechanism to meet that goal, meet and exceed regulatory requirements, and produce a positive economic and environmental benefit.

The information to follow will outline environmental and training references that may be kept by the command, training program responsibilities of management and supervisory personnel, proactive training initiatives, and the use of on-base and external training resources. This information was collected and included in other Navy plans and is incorporated here in its entirety.

8.1 References

Navy and DoD instructions and guidelines are essential in the development of a training program. The Environmental Director at the base's program central management point, will function as the collector, manager, and distributor of training and compliance information for the base.

References may be kept by the Environmental Office in a readily accessible library. These references are listed in Table 8.1. In addition, the library would house current issues of periodic publications to help keep the Environmental Office and other interested activities on board the base abreast of technological and regulatory changes and issues. A listing of typical, useful newsletters, bulletins, and other periodicals is provided in Table 8.2. Additional resources are presented in Table 8.3.

8.2 Program Responsibilities

Adequate leadership will be provided to support the training program. To accomplish this, NTC may build the following responsibilities into its management structure:

- Commander, NTC/Chief Staff Officer
    - Assures NTC has an assigned awareness training coordinator who has sufficient resources to carry out this Plan;
    - Encourages base-wide consolidation of training resources among tenants for efficiency (e.g., facilities, class time, instructors, materials, and equipment);
    - Assures that any maintenance contracts awarded for work incorporate awareness training for all workers; and
    - Sets the command objective that all station awarded contracts incorporate the training and awareness objectives of this Plan.

Table 8.1
Environmental and Training References

Reference Number	References
OPNAVINST 5090.1B	Environmental and Natural Resources Program
NTP X-90-9201	Environmental and Natural Resources Program Navy Training Plan
OPNAVINST 4110.2	Hazardous Material Control and Management
OPNAVINST 5100.23C	Navy Occupational Health and Safety Program
NTP S-40-8603B	Navy Occupational Health and Safety and Hazardous Material Control and Management Navy Training Plan
MIL-STD-1379D	Military Training Programs
DOD-HDBK-292/1	Training Materials Development
DOD-HDBK-292/2	Training Materials Development
NAVEDTRA 110A	Procedures for Instructional Development
NAVEDTRA 3800A	Training Acquisition & Management Plan
CNETINST 1500C	Catalog of Navy Training Courses
OPNAVINST 1500.8M	Navy Training Plan Process
OPNAVINST 150.2F	Procedures for Contractor Developed Training
SECNAVINST 5870.5	Governs the Use of Copyrighted Material
NAVEDTRA 130	Series Manuals, Navy Training Guidelines
OPNAVINST 1500.22D	General Military Training (GMT)

Table 8.2
Publications Listing

Publications	Contact Telephone
Environmental Technology Exchange	DSN 942-2457 / (904) 772-2469
Technology Transfer Bulletin	(513) 255-7362
JDEP Environmental Group Status Reports	DSN 986-8295 / (513) 296-8293
Joint Depot Maintenance Circular	DSN 986-8293 / (513) 296-8293
Tech Tips	DSN 785-1606 / (513) 255-1606
Navy CFC/Halon Newsletter	(703) 769-1883
Environics Cumulative Technical Report Listing	DSN 970-2097
Army Acquisition Pollution Prevention News	(703) 274-9488/45
Department of Environmental Regulation Fact Sheet	(904) 488-0300
EPA Facility Pollution Prevention Guide May '92	
EPA Pollution Prevention News	(202) 382-4418
EPA Pollution Prevention Fact Sheet	(202) 382-4418
Federal Supply System Publications	DSN 739-7369 / (817) 334-5215
Energy & Environmental News	DSN 551-3512 / (805) 982-3512
Asbestos News	DSN 551-4872 / (805) 982-4872
Journal of Environmental Regulation	1-800-332-8804
Task Force Newsletter	DSN 240-9326 / (512) 536-9326
Environmental Decisions	(202) 626-3000
HAZMAT World	(708) 858-1888
Pollution Engineering	(303) 388-4511
The Minimizer	(805)982-4873/DSN 551-4873
Hazardous Technical Information Service Bulletin	1-800-352-2852/DSN 695-6055
X-Change Pollution Prevention News	(904)772-2469/DSN 942-2457

Table 8.3
Newsletters

Pollution Prevention
H-HAZMIN Project News, Naval Magazine, Lualualei, Hawaii, contact Environmental Engineer, Pacific Division, Naval Facilities Engineering Command at (808)474-4503
Standardization and Data Management Newsletter, Defense Quality and Standardization Office, contact Editor at (703) 756-2340
The Minimizer, Naval Energy and Environmental Support Activity, Code 112F, Port Hueneme, CA 93043. Contact at DSN 551-4893 or (805) 982-4893
Used Oil and Solvent (US&O) Recycling Naval Energy and Environmental Support Activity, Code 112F3, Port Hueneme, CA 93043
One-Line Hazmin, Naval Civil Engineering Laboratory, Code L74B
Technology Information System - Expanded (TIS-X), Depot Maintenance Analysis Group
Information Acquisition/Cost Estimating (INFACE) software package, Naval Energy and Environmental Support Activity, Code 112F3, Port Hueneme, CA
Current Environmental Topics
Hazardous Technical Information Services Bulletin, Defense General Supply Center, contact (804) 275-5168 or DSN 695-5168
The Environmental Update, U.S. Army Toxic and Hazardous Materials Agency, contact USATHAMA at (301) 671-1612 or DSN 584-1612
Acquisition Management of Hazardous Materials, U.S. Air Force Systems Command, AFSC/OL-HM, Andrews Air Force Base, Washington, D.C. 20334, contact DSN 240-2903

- Environmental Director
  - Responsible for managing the base training and awareness program;
  - Ensures the training coordinator has sufficient resources to fulfill the requirements of this Plan;
  - Develops procedures to ensure all base personnel receive awareness training; and
  - Ensures that all station awarded contracts incorporate the training and awareness objectives of this Plan.
- Waste Minimization Training Coordinator
  - Responsible for specific awareness training management as assigned by the Environmental Director;
  - Coordinates the collection, production, management, and dissemination of training aides and information for the base and its tenant command;
  - Updates training as required to keep current with changing requirements of the Plan and industrial trends, including new equipment and material substitutions;
  - Trains other trainers in the methods of employee awareness;
  - Coordinates training efforts with NTC's Safety Office, to consolidate and efficiently utilize training resources for awareness training;
  - Manages the environmental library and keeps an up-to-date listing of materials available;
  - Seeks services from agencies on and off station to assist with creation and dissemination of training and awareness information;

- Maintains accurate and complete records of awareness training to ensure compliance with the training requirements of this Plan;

- Coordinates and provides other types of related base-wide or command-specific training as required; and

- Coordinates all base-wide special events.

- Occupational Safety and Health Manager

  - Ensures safety personnel and hazardous material coordinators receive required training; and

  - Coordinates Hazardous Material Control and Management (HMC&M) training with the Environmental Office's training.

- Supply Officer

  - Provides training recommendations to the Training Coordinator and to the OSH office regarding deficiencies or possible improvements in base HMC&M practices.

- Base and Tenant Hazardous Waste Manager(s)

  - Encourages input from all personnel regarding training recommendations for waste minimization; and

  - Assists the awareness training coordinator with training and forwarding of up-to-date information.

- All Department Managers

  - Ensure all personnel involved with hazardous or toxic material use or multimedia waste disposal are provided with training specific to their working procedures;

- Ensures Hazardous Waste and Hazardous Material Coordinators are allotted time to fully perform their training duties; and

- Provides input to the Training Coordinator regarding specific training needed to aid in setting up course subject areas.

8.3 Training Requirements

Policy

It is the intent of the management of NTC to establish an awareness of the benefits of and opportunities for waste minimization in the work areas. So, in addition to the required training necessary to perform various duties, awareness training will be developed and offered to every civilian employee and military person on base.

Requirements

Environmental training guidelines established in the Environmental and Natural Resources Program Navy Training Plan (NTP X-90-9201) and the Navy Occupational Safety and Health and Hazardous Material Control & Management Navy Training Plan (NTP S-40-8603B) will serve as the starting point. The training for each management or supervisory position and types of technical duties are specified in both NTPs. These courses are helpful to enhance awareness of the benefits of waste minimization by calling attention to the everyday presence of hazardous and toxic materials and the effort it takes to manage them and the wastes they create.

Specific Training Packages

To date, very little training has been developed to minimize waste at the working level within the DoD. The Environmental and Natural Resources Program NTP will address environmental training for personnel in technical positions in its next revision. The HWMC should review a number of training packages (to consist of a course curriculum, video, literature, workshops, posters, or any combination thereof) to identify applicable training packages for NTC.

General Requirements for Awareness Training

All newly arriving personnel on base will be given an introductory briefing on initiatives underway on base to reduce the generation of various types of wastes and releases to the environment. It will introduce new personnel to the overall theme of furthering waste minimization efforts, regardless of the specific job they will perform. This briefing will be given to newcomers within their first 30 days on the center.

Within the first 120 days after this Plan becomes effective, all personnel on base will receive an introductory (orientation) awareness briefing. This will allow time for the waste minimization training coordinator to prepare the briefing material. Each organization on base is expected to assist and participate in this effort. The orientation briefing will be updated as necessary (or at least every two years) to be current with the evolving needs of the base.

Refresher awareness training will be mandatory every two years for all base personnel. This training will be updated every two years and should not be too similar to the orientation briefing. This refresher training will include any new base-wide initiatives that have been started since the last review.

In order to keep up-to-date on the latest training aides, the Training Coordinator will stay in touch with various training sources such as the Environmental Protection Agency (EPA), the Naval Facilities Engineering Services Center (NFESC), 560 Center Drive, Port Hueneme, CA 93043, Civil Engineering Corp Officers School (CECOS), the Lead Maintenance Technology Center for the Environment (LMTCE), and others. State resources will also be utilized as appropriate. Personnel will be encouraged to forward new ideas on training to the base training coordinator. Often it is the working level employees who have the best ideas on waste minimization and they may be the first to be aware of training aides as they read industry journals and similar publications.

In addition to required and specific environmental training listed earlier in this plan, NTC may obtain the following training aides to increase awareness of the program:

Training	Audience	Medium
General Pollution Prevention Awareness	All hands	Posters
Your Pollution Prevention Plan and How to Use It	All managers with environmental responsibilities	Video/instruction

Training Considerations

The following items, described in the paragraphs below, will be considered when developing the training program:

- Learning Styles;
- Training Authenticity;
- Evaluation;
- Program Revision; and
- General Awareness.

When selecting training methods for personnel, the most important item to consider is that people learn differently. A lecture, video tape, or manual may not always be the best way to instill the information. While funding and time limitations will drive NTC's selection of training, personnel responsible for the delivery of training will employ methods that will help result in the highest level of retention possible, and at the same time, be cost efficient.

Training will be as close as possible to real situations. When practical, authentic forms, equipment, and materials will be used. For example, when conducting training on the operation of a parts washer, real parts will be cleaned. This will enable students to practice what they've learned, determine their areas in need of improvement, and reinforce correct procedures.

Training programs will be updated at least every two years, as outlined in the NTP. They will also be revised periodically to respond to new regulatory requirements or to deliver the

information in a variety of different formats to help maintain trainee interest.

Waste minimization will be treated as a product that requires continual marketing and advertising. It will be made visible through formal training, management support, and awareness campaigns. For example, base personnel will be exposed to information on a regular basis that highlights what benefits they will receive from being environmentally conscious at work. Posters will be displayed in all work areas to explain base environmental programs and initiatives and waste minimization activities will be scheduled to include all personnel.

On-base Resources

NTC has the following on-base resources:

- Technical experts in a variety of technical fields and administrative positions. These people will be used extensively to support the environmental training effort; their roles will include serving as instructors or guest speakers at training sessions and meetings;

- The newspaper may be used to print waste minimization articles, advertise training sessions and activities, or Honor Award recipients;

- Visual Information Center that provides photographic and video services and loans audio-visual equipment (i.e., TVs, VCRs, overhead projectors); supplemental training material such as photographs and short videos may be developed in this area and a graphic artist may be available to help; and

- Navy Publications and Printing service that provides a variety of printing and reproduction services and will secure vendor services for those not available in house.

Off-base Resources

Government, university, and private industry sources are available that offer useful environmental training or assistance in developing base-specific training. Specific material must be weighed along with cost, quality, and time factors when considering which training resources to use.

Training resources from within the Navy, DoD, Federal government, as well as those from a number of universities and from private industry, are provided in Table 8.4.

Table 8.4
Training Resources

NAVY
Chief of Naval Education and Training (CNET) DSN 922-4389 / (904) 452-4839 Pensacola, FL (904) 458-0016 Principle technical, quality assurance and training development agent for the Navy Environmental and Natural Resources Program. Develops training and reviews all courses to ensure accuracy and currency. CNET will produce a Catalog of Environmental and Natural Resources Training Courses.
Bureau of Medicine (BUMED) 432C DSN 294-1637 / (202) 653-1637 Washington, DC Has cognizance over its own courses such as potable water, medical waste, infectious waste and pesticides.
Naval Safety Center DSN 564-7233 / (804) 444-7233 Norfolk, VA Develops courses for Navy Safety and Occupational Health (NAVOSH) and Hazardous Material Control & Management (HMC&M) programs and ensures course quality. Courses provided: - Hazardous Material Information System (HMIS) (B-322-2360) (1 day) Provides information on type of data available and retrieval of data from the HMIS microfiche through hands on use of the system. - Hazardous Material and Waste Control (A-493-0031)
Naval Facilities Engineering Command (NAVFAC) DSN 221-0521 / (703) 325-0521 Alexandria, VA Manages and coordinates overall Navy shore environmental and natural resources compliance serving as the technical expert and centralized environmental protection funding. Courses provided: - Environmental Audit Course (2 days) Provides an overview of environmental audits and Environmental Compliance Evaluations (ECEs) - Environmental Compliance Course for Engineers and Technical Managers (2 days) Addresses the legal issues and clean-up requirements of environmental compliance.

Table 8.4 (continued)

Training Resources

Southern Division DSN 563-0605 / (803) 743-0605 Naval Facilities Engineering Command (Code 182) P.O. Box 190010 North Charleston, SC 29419-9010 NAVFAC regional office for southern U.S. - Call for video tape information on pollution prevention.
Naval Facilities Engineering Services Center (NFESC) (formerly NEESA) DSN 551-4839/982-4839 112E Port Hueneme, CA Provides training for Navy personnel in various environmental programs. Courses provided at NFESC: - Quality Assurance in Environmental Analysis (3 days) Provides Remedial Project Managers (RPMs) with an understanding of the Quality Control procedures for collecting and analyzing samples to assure that results are defensible to regulators in court. - Risk/Assessment/Toxicology Seminar (1 day) Provides RPMs with an understanding of several principles of human health and ecological risk assessment, primarily at uncontrolled hazards sites. - Environmental Chemistry (2 days) Provides an orientation to the field of environmental chemistry. Courses provided through NFESC (formerly NEESA) at Engineering Field Divisions: - Hazardous Waste Facility Operations Course (HWFOC) (4 days) Provides fundamental information to manage a hazardous waste facility as required by RCRA. - Hazardous Waste Training Program Development Course (HWTPDC) (3 days) Provides information for developing and implementing an activity-wide training program. - Hazardous Waste Annual Review and Refresher Course (HWARRC) (2 days) Provides changes in regulatory and technical aspects of Navy's hazardous material and hazardous waste management program. - Installation Restoration Health and Safety Course (IR/H&SC) (40 hours) Meets OSHA requirement of 40-hour training for hazardous waste site workers. - Installation Restoration Refresher Course (IR/RC) (8 hours) Meets OSHA requirement of 8-hour annual refresher for hazardous waste workers. - Installation Restoration Supervisors Course (IR/SC) (8 hours) Meets OSHA requirement of 8-hour additional specialized training for supervisors of hazardous waste workers. - Hazardous Substance Incident Response Course (HSIRC) (40 hours) Exceeds OSHA requirement of 24-hour training for hazardous substance spill response team members. - Oil-On-Scene Operations Team (OSOT) Course (5 days)

Table 8.4 (continued)

Training Resources

Civil Engineering Corp Officers School (CECOS) DSN 551-5655 / (805) 982-5655 Port Hueneme, CA Develops and provides environmental training related to facilities engineering operations and maintenance support for shore activities. CECOS courses: - Application of the National Environmental Policy Act (NEPA) (3 days) Provides environmental managers and staff level professionals with a working knowledge of NEPA. - Public Works Management (A-4A-0031) (2 weeks) Provides information for performance of duties as Public Works Officer, Asst. Public Works Officer, Facilities Manager, Shop Engineer, Public Works Division Director or Public Works Activity or Staff Civil Engineer. - Public Works Center Management for Prospective Commander NTCs and Chief Staff Officers (A-4A-0043) Provides information for performance of duties as CO or XO of Public Works Center. - Environmental Law for the Non-Lawyer (3 days) Provides legal aspects and requirements of compliance with environmental law. - Environmental Protection Course (A-4A-0036) (4 days) Provides personnel involved in planning, operation and maintenance of a shore facility with knowledge to implement Navy's program for protection of the environment and conservation of resources. - PWO/Senior Environmental Forum (2 days) Provides a setting for headquarters policy-makers to discuss latest environmental initiatives and their impacts with field level personnel in a regional setting.
AIR FORCE
Air Force Institute of Technology DSN 785-8386 / (513) 255-8386 Wright Patterson AFB, OH Develops and provides pollution prevention training for Air Force.
Headquarters, U.S. Air Force DSN 297-6240 / (202) 767-6240 Pollution Prevention Education and Training Subcommittee Lead training facilitator for Defense Environmental Policy Council.
ARMY
Army Logistics Management College DSN 539-4626 Ft. Lee, Va Develops and provides pollution prevention training for Army.

Table 8.4 (continued)

Training Resources

Commander DSN 584-3651 / (410) 671-3651 U.S. Army Environmental Hygiene Agency (USAEHA) Attn: HSHB-ME-SH Aberdeen Proving Ground, MD 21020-5422 Operates an Audiovisual Lending Library with over 100 videotapes to augment environmental training programs including awareness.
U.S. EPA Region IV (404) 347-3486 345 Courtland Street, NE Atlanta, GA 30365 Office of Pollution Prevention EPA is the lead federal agency for pollution prevention. Their efforts include providing technical information transfer and exchange and offering public outreach programs. The EPA has established a number of training resources. For a complete manual of all training sources and opportunities, contact the Region IV office and request the Pollution Prevention Resources and Training Opportunities manual. Following is a sampling of training resources: Facility planning and general pollution prevention manuals: - Industrial Waste Prevention - Pollution Prevention Resource Manual - Manual for Hazardous Waste Reduction Planning and Reporting - Pollution Prevention Pays Instruction Manual FACT SHEET: - "Conservation Tips for Business" - Pollution Prevention Pays Instruction Manual - "Waste Exchange--Everybody Wins!" - "Pollution Prevention Act of 1990" - "Waste Source Reduction" Videos: - "1990 Clean Air Act Overview" - "Cleaning Metal with Water"

Table 8.4 (continued)

Training Resources

Waste Reduction Resource Center	1-800-476-8686/919-571-4100

Waste Reduction Resource Center
3825 Barrett Drive, Suite 300
P.O. Box 27687
Raleigh, NC 27611-7687

The Waste Reduction Resource Center provides multimedia waste reduction information for EPA Region IV. The Center, upon request, prepares reports and information packages identifying solutions to specific facility or waste stream profiles. A large collection of videos covering a wide range of topics is available for training.

APPENDIX A

OPNAVINST 5090.1B CHAPTER 3: POLLUTION PREVENTION

CHAPTER 3
("NEW" Chapter)

POLLUTION PREVENTION

3-1 Scope

a. This chapter provides pollution prevention policies and procedures applicable to all Navy shore activity operations in the United States, including the applicable requirements of Executive Order (EO) 12856 of 3 August 1993 which mandates Federal facility compliance with the Pollution Prevention Act. Although EO 12856 does not apply to Federal facilities outside of the customs territory of the United States, the Navy will fully comply with EO 12856 and all related Navy and Department of Defense (DoD) policy in Guam.

b. Pollution prevention for ships is discussed in Chapter 19. Pollution prevention in National Environmental Policy Act (NEPA) actions is discussed in Chapter 2.

3-1.1 References. Relevant references are:

a. 29 CFR 1910.1200, OSHA Hazard Communication Standard;

b. 40 CFR 261, Identification and Listing of Hazardous Waste;

c. 40 CFR 302, EPA Designation, Reportable Quantities and Notification Requirements for Hazardous Substances under CERCLA;

d. 40 CFR 355, Regulations for Emergency Planning and Notification Under CERCLA;

e. 40 CFR 372, Toxic Chemical Release Reporting Regulations;

f. 49 CFR 173, Shippers - General Requirements for Shipments and Packaging;

g. DoD Directive 4210.15, Hazardous Material Pollution Prevention; (NOTAL)

h. DoD Instruction 6050.5, DoD Hazard Communication Program; (NOTAL)

i. OPNAVINST 4110.2, Hazardous Material Control and Management (HMC&M); (NOTAL)

j. OPNAVINST 5100.23C, Navy Occupational Safety and Health Program Manual (NOTAL).

3-2 Legislation

3-2.1 Pollution Prevention Act of 1990. This Act establishes the national policy that "pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environment ally safe manner whenever feasible; and disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner."

3-2.2 Resource Conservation and Recovery Act (RCRA). RCRA requires the cradle-to-grave management of hazardous wastes (HW). It also encourages the beneficial reuse of solid wastes through recycling and reuse as an energy source. The 1984 RCRA amendments require HW generators and treatment/storage/disposal (TSD) facility owners to certify that the generator has in place a program to "reduce the volume or quantity and toxicity" of waste and that the TSD method minimizes the threat to health and the environment. In addition, generators are required to report the changes in volume and toxicity of wastes actually achieved during the year of the report in comparison to previous years.

3-3 Terms and Definitions

3-3.1 Authorized Use List (AUL). The list of all HM that is required to support the requirements of a command, facility, or activity, developed per OPNAVINST 4110.2 (NOTAL).

3-3.2 Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP). CHRIMP is a successful methodology to achieve life-cycle hazardous material control and management (HMC&M) and pollution prevention at the command, facility, and activity levels. The Navy CHRIMP manual provides a standardized approach and guidance for the development and implementation of centralized HMC&M practices that result in reductions of HM that is procured, stocked, distributed, and eventually disposed of as waste.

3-3.3 Extremely Hazardous Substance (EHS). Any substance listed in Appendices A and B of 40 CFR 355.

3-3.4 Hazardous Material (HM). Any material that is regulated as a HM per 49 CFR 173.2, requires a material safety data sheet (MSDS) per 29 CFR 1910.1200, or which during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components which meet or have the potential to meet the definition of a HW as defined by 40 CFR 261 Subparts A, B, C, or D. In general, HM is defined as any material, which because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial hazard to human health or the environment. Included in this definition are all extremely hazardous substances, hazardous chemicals, hazardous substances, and toxic chemicals.

Designation of a material by this definition, when separately regulated or controlled by other instructions or directives, does not eliminate the need for adherence to hazard-specific guidance

which takes precedence over this instruction for control purposes. Such materials include ammunition, weapons, explosives and explosive-actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical materials, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos and mercury. These materials should also be considered hazardous to the extent personnel exposure may occur incidental to manufacture, storage, use, and demilitarization of these items.

3-3.5 **Hazardous Substance (HS).** Any substance listed in Table 302.4 of 40 CFR 302.

3-3.6 **Hazardous Waste (HW).** The term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

a. Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

State regulations may be more stringent and take precedence over Federal regulations.

3-3.7 **Industrial Source Reduction (Source Reduction).** Any practice which:

a. Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, and disposal.

b. Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

3-3.8 **Industrial Pollution Prevention.** A combination of industrial source reduction and toxic chemical use substitution. It does not include any treatment of pollutants, off-site recycling, disposal, or transfer of pollution from one medium to another.

3-3.9 **Pollution/Pollutants.** All non-product outputs, irrespective of any recycling, treatment, or management that may prevent or mitigate releases to the environment.

3-3.10 **Pollution Prevention.** Source reduction and other practices that reduce or eliminate the creation of pollutants through:

a. Increased efficiency in the use of raw materials, energy, water, or other resources

b. Protection of natural resources by conservation.

3-3.11 **Recycled Material.** Previously used materials that can be utilized in place of a raw or source material in the manufacturing process. If not so utilized, this material would become waste.

3-3.12 **Toxic Chemical.** Any substance listed in 40 CFR 372.65.

3-3.13 **Toxic Chemical Use Substitution.** Replacing toxic chemicals with less toxic chemicals. Examples include substituting a toxic chemical in an industrial process with a material of lower toxicity or reformulating a product to decrease the use of chemicals associated with risks to human health or the environment.

3-3.14 **Toxic Chemical Use Reduction.** The reduction, avoidance, and elimination of the use of toxic chemicals in processes and/or products to reduce overall risks to the health of workers, consumers, and the environment without shifting risks between workers, consumers, or parts of the environment.

3-3.15 **Used/Excess HMs.** HM for which there is no further, immediate use aboard the ship or at the shore activity possessing the material. Such material may ultimately be used on another ship or at another shore activity, within the shore establishment, for different purposes other than initially manufactured, or by commercial industry.

3-3.16 **Waste.** See "Pollution/Pollutants."

3-3.17 **Waste Minimization.** Reduction in wastes generated through source reduction and recycling activities. This term excludes treatment of wastes and energy recovery.

3-3.18 **Waste Reduction.** See "Waste Minimization."

3-4 Requirements

3-4.1 Pollution Prevention Policy for Federal Agencies.

a. EO 12856 requires Federal agencies to conduct their facility management and acquisition activities so that, to the maximum extent practicable, the quantity of toxic chemicals entering any wastestream, including releases to the environment, is reduced as expeditiously as possible through source reduction; that waste that is generated is recycled to the maximum extent practicable; and that any wastes remaining are stored, treated, or disposed of in a manner protective of public health and the environment.

b. By 3 August 1994, Federal agencies are required to develop voluntary goals to reduce their total releases of toxic chemicals to the environment and off-site transfers of such toxic

chemicals for treatment and disposal from covered facilities. Federal agencies will set these goals to achieve a 50 percent reduction by 31 December 1999, using 1994 releases and off-site transfers as a baseline. To the maximum extent practicable, such reductions will be achieved by implementation of source reduction practices.

The baseline for measuring the 50 percent reduction goal for each Federal agency will be the first year in which releases and off-site transfers of toxic chemicals are publicly reported (but not later than 1994). The baseline amount to which the 50 percent reduction goal applies will be the aggregate amount of toxic chemicals reported in the baseline year for all of the facilities which meet the threshold applicability requirements.

Each Federal agency will ensure that by the end of 1995 each of its covered facilities develops a written pollution prevention plan which sets forth the facility's contribution to the 50 percent goal. Federal agencies will conduct assessments of their facilities, as necessary, to ensure development of such plans, and of the facilities' pollution prevention programs.

c. Each Federal agency will establish a plan and goals for eliminating or reducing the unnecessary acquisition of products containing extremely hazardous substances or toxic chemicals. Similarly, each Federal agency will establish a plan and goal for voluntarily reducing its own manufacturing, processing, and use of extremely hazardous substances and toxic chemicals.

By 3 August 1995, DoD will review its standardized documents, including specifications and standards, and identify opportunities to eliminate or reduce its use of extremely hazardous substances and toxic chemicals, consistent with the safety and reliability requirements of its mission.

Federal agencies are encouraged to develop and test innovative pollution prevention technologies at their facilities in order to encourage the development of strong markets for such technologies.

3-4.2 EPA Pollution Prevention Policy. In 1992, the EPA established an environmental waste management policy based on a hierarchy consisting of:

a. Source Reduction

b. Recycling

c. Treatment

d. Disposal.

In establishing this hierarchy, the EPA further stated that the criteria for selecting the method of waste management depends upon the requirements of the applicable law, the level of risk reduction that can be achieved, and the cost-effectiveness of the option. The hierarchy established that

source reduction is always the most desirable option as it addresses reducing the volume and toxicity of pollution versus simply transferring it from one media to another. EPA observed that drawing an absolute line between source reduction and recycling was difficult. Source reduction generally includes "in-process recycling" or "reuse," but not "out-of-process recycling."

In summary, EPA looks to pollution prevention as a key to reducing the increasing cost of treatment and cleanup of environmental pollutants.

3-4.3 **HM Pollution Prevention.** DoD Directive 4210.15 establishes policy, assigns responsibilities, and prescribes procedures for HM pollution prevention.

This directive requires that HM be selected, used, and managed over its life cycle so that DoD incurs the lowest cost required to protect human health and the environment. It establishes the preferred method of doing this as avoiding or reducing the use of HM. Whereas use of HM may not be reasonably avoided, the directive requires users to follow regulations regarding its use and the employment of management practices which avoid harm to human health and the environment. This directive requires emphasis to be placed on using less HM in processes and products, as distinguished from end-of-pipe management of HW.

To implement this policy, the Navy will:

a. Modify functional area efforts, procedures, guidance documents, or common practices to improve the way the HM is managed.

b. Revise documents, processes, or procedures to facilitate the use of substitutes, where possible.

c. Evaluate HM decisions by economic analysis techniques that match the magnitude of the decision being made, considering cost factors and intangible factors, as applicable.

d. Begin economic analyses of HM decisions at the earliest possible stage of the life cycle and modify analyses when better information becomes available

e. Record, retain, and provide to appropriate authorities, as necessary, information that describes actions taken on HM issues and the effect of the actions on the conduct of operations.

3-5 Navy Policy

The Navy shall take action to prevent pollution by reducing HM use and decreasing the release of pollutants into the environment to the minimum amounts achievable.

3-5.1 **Pollution Reduction.** Navy activities which meet the threshold reporting requirements of EPCRA Section 313 (see Chapter 4) shall take action to reduce the releases of toxic chemicals

to the environment and the off-site transfer of such toxic chemicals for treatment and disposal. The Navy goal is to reduce such releases and off-site transfers by at least 50 percent by 31 December 1999.

3-5.2 **Pollution Prevention Practices.**

a. Navy facilities shall reduce the amount of HM used and HW generated by up-front HM control in procurement, supply, and use. This shall be accomplished by:

(1) Developing local mechanisms at shore activities to identify materials in use that are hazardous and limiting quantities of HM that are procured and stored. Activities shall establish HM AULs to control the quantity of HM procured and stored.

(2) Establishing methods for substituting less HM or non-HM where possible.

(3) Developing and incorporating new technology or materials which have a reduced impact upon the environment, are safer and healthier, or result in reduced emissions.

(4) Modifying HM shelf life to reduce the generation of waste as a result of shelf life expiration.

(5) Modifying units of issue to reduce the generation of waste as a result of unused surplus material.

3-5.3 **Training.** One of the most effective pollution prevention techniques is to ensure that personnel are properly trained on those job functions which have an environmental impact. Overall environmental training requirements are provided in Chapter 24. Individual chapters of this manual discuss the training necessary to achieve compliance with environmental laws and regulations.

3-5.4 **Pollution Prevention Plans.** Every activity shall develop and implement a Pollution Prevention Plan. This plan shall address the actions required by the activity for reducing pollution from all sources and to all media, and shall be developed by the end of 1995. Activities Pollution Prevention Plans shall incorporate the following elements:

a. Purpose

b. Policy Statement

c. Applicability and Scope

d. Description of Shore Activity

e. Plan Management and Administration

f. Planned Process Improvements

g. Priorities

h. Potential Barriers

i. Other Relevant Requirements

j. Commanding Officer Approval/Certification

3-6 Responsibilities

3-6.1 The Chief of Naval Operations (N45) shall:

a. Implement Navy pollution prevention policy and applicable EO 12856 requirements and/or delegate certain authority to NAVSUPSYSCOM, NAVFACENGCOM, major claimants, or others.

b. Identify Navy opportunities for pollution prevention and facilitate transfer of pollution prevention technology.

c. Develop guidance for use by activities in the development of installation Pollution Prevention Plans.

d. Develop and maintain an up-to-date pollution prevention technology transfer data base which can be used by activities in accomplishment of pollution prevention goals.

e. Act as the resource sponsor for the development of pollution prevention technology and as the assessment sponsor for accomplishing implementation of pollution prevention efforts at Navy activities.

3-6.2 COMNAVSUPSYSCOM shall:

a. Assist CNO(N45) in managing the HM aspects of the Navy pollution prevention effort and serve as the overall manager for the supply aspects of the Pollution Prevention Program.

b. Develop, implement, and maintain a Navy-wide system for acquiring only authorized HM, integrating command and shore activity HM AULs.

c. When requested, assist System Command Program Managers by providing life cycle costs for HM being considered for acquired systems.

d. Review HM shelf life policies and determine the validity of shelf lives and/or unit of issue requirements. Review Defense Reutilization and Marketing Service records for HM excess

because of shelf life expiration. Initiate appropriate changes to logistic planning factors, units of issue, and shelf life extension practices, as appropriate, to reduce HM excesses.

e. Provide guidance to and coordinate efforts of the Navy-wide HM substitution efforts including development of a substitution guidance document.

f. Establish methods to reduce/minimize the entry of new HM into the supply system. Prior to the introduction of new HM into the system, a valid requirement for the HM must exist; a complete MSDS must be locally available; and a review must confirm that existing non-hazardous or less hazardous substitutes are not available.

g. Provide Navy guidance for shore activities and commands on implementing CHRIMP.

3-6.3 **COMNAVFACENGCOM shall:**

a. Support industrial process pollution prevention initiatives as tasked by CNO N45.

b. Manage the pollution prevention technology transfer data base.

c. Provide technical assistance to shore activities, as requested, to implement pollution prevention practices and incorporate pollution prevention technology into activity processes.

d. Develop plans for implementing the use of alternative fuel vehicles in Navy vehicle fleets.

3-6.4 **Major claimants shall:**

a. Ensure that activities under their command develop and implement Pollution Prevention Plans per the guidance of this chapter.

b. Program, budget, and allocate funds for all activity pollution prevention projects identified in activity Pollution Prevention Plans with payback periods of 3 years or less.

c. Assist COMNAVSUPSYSCOM in developing and maintaining a centralized list of authorized HM or the approved, less hazardous substitutes. Ensure that activities under their cognizance use only that HM which appears on the HM AUL.

d. Develop and implement HM elimination/substitution processes for all systems and operations under their cognizance. These processes shall include the identification, evaluation, and use of the least HMs available.

e. Develop processes which ensure that the least hazardous technically acceptable materials are incorporated into the activity AUL.

f. Establish the contributions of each of their activities (which meet the threshold reporting requirements of EPCRA Section 313 (see Chapter 4)) for the reduction in releases of toxic chemicals to the environment and the off-site transfer of toxic chemicals for treatment and disposal. Each claimancy shall reduce such releases and off-site transfers by at least 50 percent by the end of CY 1999, using CY 1994 as a baseline.

3-6.5 The Chief of Naval Education and Training shall: incorporate pollution prevention practices into Navy training. Source reduction initiatives shall be included into appropriate training courses.

3-6.6 Commanders and commanding officers of shore activities shall:

a. Develop and implement an activity Pollution Prevention Program that incorporates the HMC&M and hazard communication requirements of OPNAVINST 4110.2. Guidance for developing activity pollution prevention programs is provided in Appendix G. Guidance for establishing an activity pollution prevention committee is provided in Tab A to Appendix G.

b. Develop and implement an activity Pollution Prevention Plan per paragraph 3-5.4. This plan shall address the actions required by the activity for reducing pollution from all sources and to all media and for meeting the activity's contribution to their major claimant's toxic chemical release reduction requirement. The plan shall also identify, to the major claimant for funding, all projects which have a payback period of less than 3 years. The plan shall be developed by the end of 1995.

c. Establish and implement procedures to control, track, and reduce the variety and quantities of HM in use, in storage or stock, or disposed of as HW. Include in those procedures centralized HMC&M operations per the Navy CHRIMP manual.

d. Develop and implement a local HM AUL using an inventory that identifies and quantifies HM, including whether the material is an extremely hazardous substance, hazardous substance, or toxic chemical as defined under EPCRA (see Chapter 4).

e. Limit open market purchases of HM to purchases for which a stock numbered product is unavailable from the supply system and for which there is a valid controlling document (e.g., maintenance requirement card (MRC), maintenance requirement plan (MRP), technical manual, technical order, maintenance manual, or similar document). In cases where a standard stock item is deemed inferior, complete information regarding the item will be provided to the supply officer in order that an HM AUL feedback report can be submitted to document the apparent deficiency.

APPENDIX B

CONSOLIDATED HAZARDOUS MATERIAL REUTILIZATION AND INVENTORY MANAGEMENT PROGRAM (CHRIMP)

DEPARTMENT OF THE NAVY
NAVAL SUPPLY SYSTEMS COMMAND
1931 JEFFERSON DAVIS HIGHWAY
ARLINGTON VA 22241-5360

TELEPHONE NUMBER
COMMERCIAL
AUTOVON
IN REPLY REFER TO:

FOREWORD

Much consideration has gone into identifying the best way for the U.S. Navy to carry out its obligations to preserve the environment and to comply with Federal, State, and local environmental laws. Control and management of a large volume of hazardous material within the Navy establishment are an essential part of this effort. Among several approaches to solving the proliferation of hazardous materials is the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP). The Naval Supply Systems Command, as Program Manager for the Hazardous Material Afloat Program and as Executive Agent for Navy Hazardous Material Control and Management ashore, accepts the responsibility for assisting and guiding the establishment of Hazardous Material Minimization Centers (HAZMIN) anywhere in the Navy community. These HAZMIN centers have proven highly successful in both afloat and ashore prototype operations. Use of the Hazardous Inventory Control System (HICS) coupled with the procedures advocated in this guide will result in significant savings and cost avoidance throughout the acquisition, utilization, and disposal processes. HAZMIN centers at both large and small activities, have proven highly efficient in minimizing material utilization and improved timeliness of material availability.

This CHRIMP manual is a dynamic guide developed through incorporation of those features of currently successful HAZMIN Centers. As other effective operations evolve in unique environments those features will be promulgated in future changes to this manual. The HICS Program distributed with this manual is the stand alone version 3.4 with upgrades already in development to allow networking. However, even in its present form Version 3.4 will allow tremendous material receipt, tracking and accounting capabilities not previously available. Future updates will be automatically distributed. Procedural changes that demand immediate notification will be announced via naval message.

The CHRIMP Manual is a viable guide in meeting the Navy's immediate needs in controlling and minimizing the amount of hazardous material used to support naval operations. I urge each officer, enlisted and civilian personnel to support this effort. In particular every Supply Corps officer should become proficient in the centralized management concept and operation discussed in this guide. Hazardous material control and management is the right thing to do, and now is the time to do it!

R. M. MOORE
Rear Admiral, SC, USN
COMMANDER

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, DC 20350-2000

IN REPLY REFER TO

4110
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From: Chief of Naval Operations
To: Distribution

Subj: CONSOLIDATED HAZARDOUS MATERIAL REUTILIZATION AND INVENTORY MANAGEMENT PROGRAM (CHRIMP) MANUAL

Ref: (a) OPNAVINST 4110.2
(b) CNO Washington DC 281412Z Sep 92

Encl: (1) Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) Manual

1. Enclosure (1) provides the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) Manual. The Naval Supply Systems Command developed this document as part of the Navy's continuing effort to control and manage the use of hazardous materials (HM) and the generation of hazardous waste (HW) as set forth in references (a) and (b).

2. This manual is intended to provide guidance for and management of HM both afloat and at shore installations. It is based on a highly successful Navy effort originally developed at the Naval Air Weapons Station (NAWS), Point Mugu, CA and includes the Hazardous Material Inventory Control System (HICS) Version 3.4 software for HM inventory management.

3. Point of contact in this matter is Mr. John Hannum, N451C, telephone (703) 602-6844 or DSN 332-6844.

J. S. WALKER
By direction

Distribution: (see next page)

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

With the increased attention being focused on environmental issues, various Executive Orders, legislation, and Department of Defense (DoD) directives have virtually ensured that Navy activities will be brought into compliance with applicable Federal, state, and local environmental pollution controls. Additionally, the Navy, along with the other services, is faced with ever increasing restrictions concerning environmental protection internationally. It is also important to recognize that the sovereign immunity that the services have enjoyed in the past is, today, virtually non-existent with respect to environmental protection issues.

The Navy Hazardous Material Control and Management (HMC&M) Program was established by reference 1-1 (OPNAVINST 4110.2). This instruction defines uniform policy, guidance and requirements for the life-cycle control and total quality management (TQM) of hazardous material (HM) acquired and used by the Navy and directs that controls be established to reduce the amount of HM used and the amount of hazardous waste (HW) generated.

The Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) initiated by Naval Air Weapons Station (NAWS), Point Mugu, California has proven to be a successful methodology to achieve life-cycle control and management of HM and HW at the command and activity level. Through the application of sound material management practices, this program has significantly reduced the amount of HM procured, stocked and distributed to work centers, and eventually disposed of as waste.

1.2 PURPOSE AND ORGANIZATION

The purpose of this guide is to provide commanding officers, officers in charge, managers, supervisors, and military and civilian employees of afloat and ashore commands and activities with a document to assist in the development and implementation of local HM management programs. The guide contains information based upon experience gained and lessons learned by NAWS Point Mugu, prototype ships in the Atlantic and Pacific Fleets, as well as information provided by numerous headquarters, afloat and ashore commands.

This guide is organized into six chapters.

- **Chapter 1: Introduction.**
- **Chapter 2: Hazardous Material Management Afloat.** This chapter provides information designed to assist commanding officers of surface ships in establishing and operating a CHRIMP afloat.

- **Chapter 3: Hazardous Material Management Ashore.** This chapter provides information designed to assist commanding officers and officers in charge in establishing and operating a CHRIMP ashore.

- **Chapter 4: Ship-To-Shore Hazmat Interface.** *(This Chapter is unavailable at this time. It will be included in a future update to the CHRIMP Manual.)*

- **Chapter 5: Hazardous Waste Management.** *(This Chapter is unavailable at this time. It will be included in a future update to the CHRIMP Manual.)*

- **Chapter 6: Chemical Tracking Module.** *(This Chapter is unavailable at this time. It will be included in a future update to the CHRIMP Manual.)*

1.3 APPLICABILITY

The intent of this guide is to provide a standard approach to the control and management of HM to be followed by those surface ships and shore stations and activities desiring to implement a CHRIMP concept. The concept with modifications, as necessary, will also have application to Marine Corps activities as well as to the Military Sealift Command (MSC). Processes and procedures described in this publication may be modified, as necessary, to apply to the particular requirements of individual commands and activities.

1.4 REFERENCES AND DEFINITIONS OF TERMS

- For matters of convenience and organization, references for a specific chapter appear at the end of each chapter.

- A list of acronyms appears as Appendix I.

- A check-off list for implementation of CHRIMP afloat appears as Appendix II.

- A table showing comparisons of CHRIMP implementation by the trial ships appears as Appendix III.

- A listing of equipment for afloat implementation of CHRIMP appears as Appendix IV.

- A listing of afloat HM training courses and videotapes appears as Appendix V.

- A description of the capabilities of the Hazardous Material Inventory Control System (HICS) Version 3.4 appears as Appendix VI.

- A synopsis of relevant Statutory codes, regulatory requirements, and DoD and Navy

Directives appears as Appendix VII.

- A check-off list designed to assist in the establishment of a CHRIMP ashore appears as Appendix VIII.
- A list of basic equipment and supplies required to establish and operate a CHRIMP ashore appears as Appendix IX.
- A directory of Environmental Agencies and Points of Contact appears as Appendix X.
- A sample Memorandum of Understanding (MOU) for ashore activities appears as Appendix XI.
- The HICS Users Manual is included as Attachment 1.

1.5 CHRIMP GUIDE CHANGES

Users who identify a requirement for a modification to this guide are requested to submit the proposed modification to Commander, Naval Supply Systems Command (NAVSUP), Code SUP 4524. Modifications to the guide shall be issued in the following manner:

- Alterations which are necessary for immediate incorporation into the guide and which cannot wait for the development of the next change shall be issued as advanced changes (A/Cs) by NAVSUP. They may be issued by message or letter depending upon the urgency of the change.
- Periodically when a large number of modifications to the guide are necessary, a change to the guide shall be issued by NAVSUP. These changes shall incorporate previously issued advanced changes.
- Whenever possible, changes to this guide shall be accomplished by page replacement rather than by pen and ink changes.

CHAPTER 1

REFERENCES

1-1 OPNAVINST 4110.2, *Hazardous Material Control and Management (HMC&M)*

Chapter 2, Hazardous Material Management Afloat, has been intentionally removed since it's content does not apply to NTC Orlando.

CHAPTER 3

HAZARDOUS MATERIAL MANAGEMENT ASHORE

3.1 INTRODUCTION

Life-cycle management of HM requires a systematic approach, involving a commitment by all echelons of the command or activity. This guide contains a wide range of information on many aspects of the subject and is intended to be a ready reference for personnel responsible for implementation and operation of local programs. Information contained within is based largely upon the comprehensive Hazardous Material Minimization Project ongoing at NAWS, Point Mugu, California. It should be recognized that some information presented may not be specifically applicable to every shore activity and must be tailored due to local operational, facility and resource constraints.

3.2 HMC&M PROGRAM OBJECTIVE

As stated in reference 3-1 (OPNAVINST 4110.2), the ultimate objective of the Navy's HMC&M Program is to establish uniform policy, guidance, and requirements for the life-cycle control and TQM of HM acquired and used by the Navy. This was established not only to protect personnel and the environment, but to realize cost savings through control of acquisition, procurement, supply, and utilization of HM.

3.3 CHRIMP PHILOSOPHY

3.3.1 Understanding How HM is Managed. Historically, HM has been managed in the same manner as other non-hazardous consumable material. Users submitted requisitions to the Supply Department (or other departments responsible for certain categories of material such as paints) for an expected amount to be used to complete a task or to have on hand for some period of time. The unused portion of the material was then usually kept at the work site, sometimes without regard for proper and safe storage or environmental impact, until it was required for another job. In the meantime, the shelf life may have expired or the material or its container may have become damaged, and the material would be eventually turned in for disposal. In many cases, this scenario would occur simultaneously in various work centers throughout the command.

Institutionalizing CHRIMP necessitates certain realignment and consolidation of responsibilities throughout the command and the establishment of an organizational structure devoted to the management of HM and HW. It is command prerogative for development of the organization, however, it is recommended that the Supply Department be assigned overall responsibility since inventory management is a key ingredient of the program. If Supply does not have overall responsibility, they must be kept appraised of the progress of the Hazardous

Material Minimization Center (HAZMINCEN) so that supply stocks of HM can be adjusted to reflect the HAZMINCEN usage data.

Additionally, it is necessary for all personnel who currently use HM to understand the concept of a centralized management and distribution system. HM currently stored in the work place will be collected, consolidated and issued as needed. Usage data will be collected, inventory levels will be established, and the command Authorized Use List (AUL) will be developed and maintained. Support of total quality leadership (TQL) objectives includes involvement of all commands in AUL development.

3.3.2 Understanding How HW is Managed. A fundamental goal of successful HM control programs is to avoid the disposal of surplus HM as HW. At some point, however, a portion of the HM stream will become HW. Situations leading to disposal as hazardous waste include: partially filled containers remaining at the end of a maintenance task, material reaching shelf life expiration while in the HAZMINCEN or in shop storage, and the generation of shop wastes containing hazardous materials.

The accumulation and storage of HW is subject to the provisions of the Resource Conservation and Recovery Act (RCRA) and must be managed by knowledgeable personnel. Some of the more important provisions of Subtitle C of RCRA, "Managing Hazardous Wastes" include time frames for storage of HW, registration requirements as HW generator, and the requirement to follow state laws of "authorized" states which may be more restrictive than Federal statutes. Because of the complexity of the laws and the difficulty in interpretation, it is recommended that plans for storage, shipment, and disposal of HW be coordinated with the Regional Environmental Coordinator (REC).

3.3.3 CHRIMP Objective. As previously stated, a primary objective of the CHRIMP is to provide life cycle management of HM and the resultant reduction of HW currently being generated by Navy activities. A proven methodology to accomplish this is through the establishment of a HAZMINCEN where all HM is centrally controlled and managed. All work centers within the command or activity, and tenant commands who participate in the program are required to turn in HM currently held and to use the HAZMINCEN for all future HM needs. The HAZMINCEN, in turn, responds to customer requests by packaging and issuing the quantity of HM required to perform the task at hand. When the work is completed, the customer will return any unused portion of the HM, and the original container, to the HAZMINCEN. Center personnel will examine the returned HM and determine if the unused portion can be retained for reuse by another customer, if it can be recycled, or if it should be disposed of as hazardous waste via the appropriate Public Works Center (PWC) or Defense Reutilization Marketing Office (DRMO).

Each Fleet and Industrial Supply Center (FISC) plans to establish a HAZMINCEN during FY 94. These HAZMINCENs will consolidate excess HM by providing facilities for customers to deliver excess HM. At the same time, these customers can draw HM from the

HAZMINCENs. The regional objective is to network all HAZMINCENs with FISC operations so that total control of Navy HM will be integrated. This type of integrated control and management with a sensitivity to shelf life issues will ensure that maximum use is made of all HM and minimize the amount entering the waste stream.

3.3.4 CHRIMP Prototype. The NAWS Point Mugu CHRIMP, established in March 1991, is the Navy's prototype program. It began with the HAZMINCEN consolidating HM stored at eight locations within the Aircraft Maintenance Department (AMD). The material was subsequently identified, screened for condition, the remaining shelf life determined, and placed into the inventory of the HAZMINCEN as cost avoidance items. The customer was given a financial credit equal to the value of all material which had at least six months shelf life remaining. After all credit had been used, customers were charged for purchases except for material that was pre-expended. A delivery system was put in place to quickly respond to work center requests for material and to pick up any unused portions of the HM. Once this system was operating efficiently, additional work centers, shops and tenant activities were included.

Another aspect of the NAWS Point Mugu HAZMINCEN is the recycling center. This adjunct provides the capability to consolidate existing base recycling projects into a coordinated effort designed to keep materials out of the waste stream and to generate revenue. The recycling center collects all types of recyclable material including aluminum cans, plastics, paper (used computer paper, white ledger, newspaper), glass, cardboard, copper wire, tin cans, and scrap metal (ferrous and non-ferrous). This material is appropriately sorted, crushed or baled and marketed through the DRMO or sold directly to local recyclers. Although not in use at NAWS, solvent stills can be utilized to reclaim certain solvents and cleaners normally not reused because of contaminants such as oil, dirt, and grease. Once this process is complete, recycled material meeting appropriate specifications can be reissued. Care must be taken to ensure local regulations are met and proper permits are obtained prior to operation of a still.

3.3.5 Benefits of CHRIMP. It is important that the many benefits of CHRIMP be publicized as part of the command awareness program. These benefits include personnel safety, environmental protection, and potential savings in material, personnel and facility costs without degradation of operational readiness.

3.3.6 Required Elements of a Successful CHRIMP. There are three salient elements of a successful CHRIMP. They are:

- Command commitment and support at all levels
- Personnel awareness and understanding of how HM is to be managed
- A comprehensive implementation plan

3.3.6.1 Command Commitment and Support. As with any developing program, a commitment to effect change and strong command support are essential to its success. This

is especially true as resources to implement the CHRIMP concept, in most cases, must come from within the command and from participating tenant commands or activities.

The CHRIMP is a proven method to comply with regulations applicable to the management of HM. Of primary importance is Reference 3-1 (OPNAVINST 4110.2) which succinctly states that "Navy activities shall comply with all Federal and DoD standards, directives, instructions, and regulations related to HM and HW, including applicable state laws and local regulations". It further states that "The Navy shall control and reduce the amount of HM used and HW generated by up-front HM control in acquisition, procurement, supply, and utilization through the development of acceptable local mechanisms at shore activities to identify HM in the system and to limit quantities of HM acquired and stored". Implementation of this policy clearly requires commitment to formulate a compliant program suited to the specific needs of the individual command or activity. Also pertinent are numerous other statutory and regulatory requirements and DoD and Navy directives which describe necessary actions to plan, control and manage HM inventories and sources of HW. Appendix VII lists some of the more important references which can assist in the development of an awareness program.

3.3.6.2 Personnel Awareness and Understanding. The initial step in establishing a CHRIMP is to develop a command awareness program which informs personnel, at all levels, of the requirements, objectives and expected benefits of a comprehensive HMC&M Program. One method to accomplish this is through application of TQL. In addition to the overall personnel awareness and understanding, personnel with specific responsibilities that will overlap the establishment of CHRIMP should be included and consulted from the start. The safety, industrial hygiene, and environmental personnel on the base or in the organization can provide valuable expertise and help avoid development of procedures or modifications to facilities that do not meet regulations. This approach can motivate personnel to a common purpose and commitment through emphasis on quality, customer orientation, and continuous product improvement.

3.3.6.3 Implementation Plan. It is essential to develop comprehensive plans and command directives to identify actions which must be taken prior to implementation of CHRIMP. Subsequent paragraphs provide information relative to this planning process as it applies to facilities, financial considerations, staffing requirements, personnel training, Navy Occupational Safety and Health (NAVOSH) requirements, accounting procedures, inventory control, and scheduling. The local FISC is developing strategies for regional management of HM and a capability to provide support to other CHRIMP/non-CHRIMP activities. Some of the services scheduled to be provided by the FISC are:

- Accept excess HM from all participating activities and ships in the region.
- Provide a pickup and delivery service.

- Tightly control HM utilizing HICS software to monitor all issues and ensure return of unused portions.

- Establish a "Consumer Level" stock of HM sufficient to satisfy local demand with a sufficiently high fill rate to eliminate the need for caches of HM at customer activities.

- Provide break bulk services that will provide HM in the smallest unit of issue to satisfy immediate requirements and eliminate excess material that results when only large units of issue are available from the supply system.

- Establish operating procedures for issue and return of material that require a minimum of paperwork by the customer.

The FISC is the contact point in each region for all issues regarding the management of HM or the availability of HM training.

Appendix IX contains a comprehensive check-off list of actions which should be considered prior to, and during the establishment of a CHRIMP. The list is generic in nature; parts of which may not be applicable to each command or activity.

3.4 IMPLEMENTING A CONSOLIDATED HAZARDOUS MATERIAL REUTILIZATION AND INVENTORY MANAGEMENT PROGRAM (CHRIMP) ASHORE

3.4.1 Single or Multiple Facilities. The purpose of the CHRIMP is to manage HM throughout its life cycle. This can be accomplished by establishing one or more HAZMINCENs within the command or activity for the centralized storage, distribution, and reutilization of HM and the disposal of HW. While the decision to establish a command-wide center or multiple centers may be dependent upon the organizational structure, the geographic layout and the existing facilities of the command or activity, experience has shown that the more HM management is centralized, the greater the return. A list of equipment and supplies that may be required to support a HAZMINCEN is included at Appendix IX.

3.4.1.1 Facility Space Requirements. Facilities required for a HAZMINCEN will vary depending upon the amounts and types of HM to be managed as well as the number of daily issues and receipts expected to occur and whether a recycling center is to be included.

The process for determining space requirements should begin with the evaluation of current data from three sources, tempered by the realization that early trials have resulted in a substantially smaller consolidated inventory than the sum of the inventories in place prior to consolidation. These sources are:

- The yearly inventory of HM required by reference 3-3 (OPNAVINST 5100.23C). This instruction directs the conduct of a comprehensive chemical inventory for each work place and their compilation into a master HM inventory and resultant AUL.

- A review of requisitions, open purchase documents, and Servmart transactions for the past year to obtain current information on HM procured.

- A survey of all HM users to identify projected quarterly requirements.

Comparison of the three data sources can provide lists of material for further analysis that will likely result in elimination of items from the storage plan. As an example, material listed on the AUL, but not shown as being procured during the preceding year, may well be material no longer required for use. While this material will still have to be processed as excess, it would not require allocation of space in the HAZMINCEN storage plan. Also, any HM reported as being used in quantities less than purchased quantities, may be the result of the lack of availability of an Unit of Issue (UI) small enough to satisfy the maintenance requirement. This could then result in a smaller amount of the material being stocked in the HAZMINCEN which supports the overall objective of reduced HM inventories.

After analysis and purification, the total inventory requirements should be calculated and categorized to determine the types of storage needed and the space required for each type. Space requirements must consider material compatibility and spill containment requirements. Assistance in determination of space requirements, layout, and regulation compliance may be obtained from Fitting Out Supply Support Assistance Center (FOSSAC) Logistics Engineering Department (804/444-4370).

As a point of reference, NAWS Point Mugu is using about 2600 ft^2 of indoor floor space for approximately 600 line items of HM housed in the HAZMINCEN (figure 3-1), and approximately 6000 ft^2 for the recycling center. Note: For the purpose of this guide, the HW collection center is not considered a part of the HAZMINCEN as most shore activities currently have facilities and procedures in place for the collection, storage and transfer of HW. Collection and storage of HW is regulated by the RCRA. Transportation of HW is regulated by the Department of Transportation (DoT).

3.4.1.2 Facility Safety Requirements. The HAZMINCEN must be constructed to meet federal, state and local fire codes and safety standards since special precautions are required for storage, handling and use of HM. Specifically, the facility must comply with references 3-4 (MIL-H-1032, *NAVFAC Design Manual*), 3-5 (*NFPA Uniform Fire Code* Article 79 and 80) and 3-6 (*Uniform Building Code*, Chapter 9).

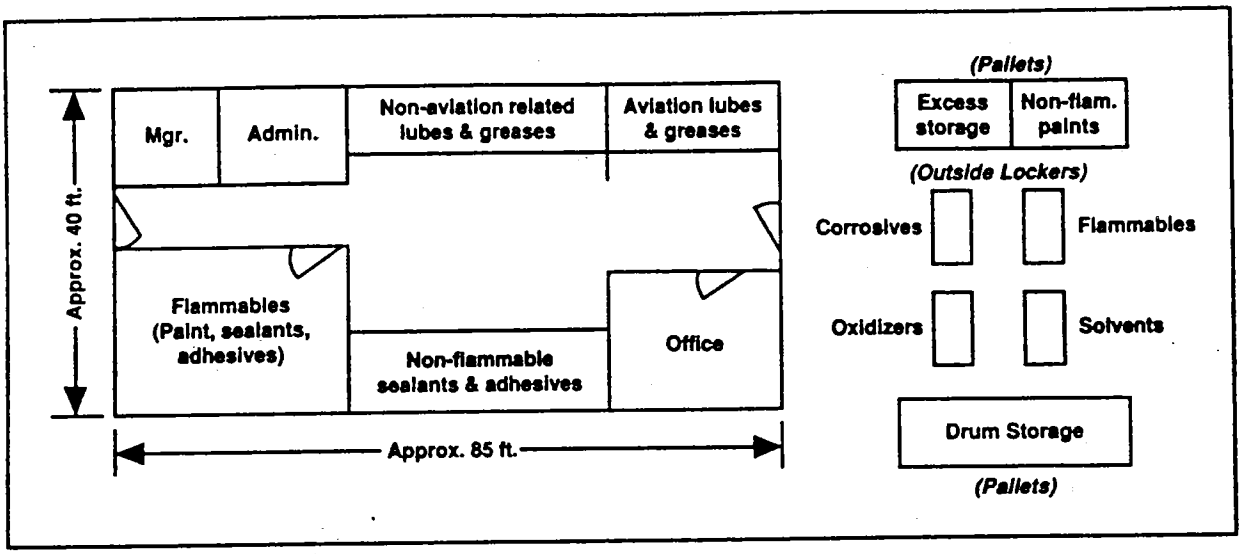

Figure 3-1. NAWS Point Mugu HAZMINCEN.

Significant hazards to be considered include fire, acute and chronic systemic effects brought about by breathing toxic substances in air, dermatitis through skin contact, asphyxiation and burns of the skin and eyes. Some materials normally thought to be safe become hazardous under certain use or storage conditions. Various categories of HM (flammable and combustible materials, toxic or poisonous materials, corrosives such as acids and alkalies, oxidizing materials, aerosols and compressed gases) can react spontaneously if mixed. Mixing incompatible wastes can produce heat or pressure, fire or explosion, violent reaction, or toxic fumes and vapors and other by-products. Chemical substance compatibility data can be found in Appendix A to reference 3-7 (*Naval Ships' Technical Manual*, S9086-WK-STM-010, Chapter 670). Approximately one-fourth of the area should be configured for storing very hazardous and toxic materials such as flammable aerosols, acids and corrosives. Storage aids for hazardous liquids must be constructed to provide appropriate methods of containment to avoid dispersion of the hazardous liquid as a result of spills or deterioration of the container. Guidelines for containment are provided by the National Fire Protection Association's (NFPA) *Flammable and Combustible Liquids Code Handbook*. The guideline provides that

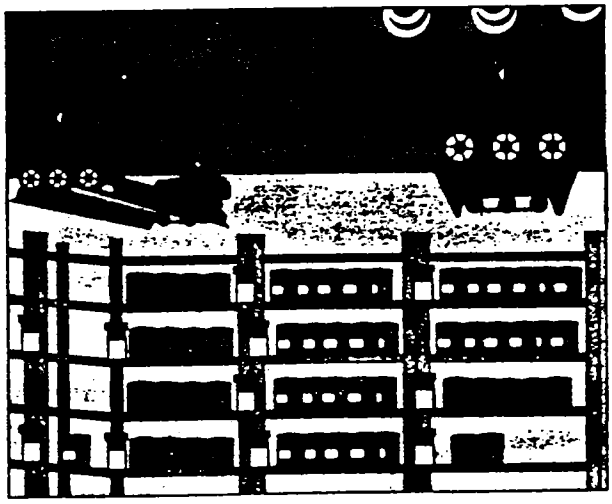

Figure 3-2. Explosion Proof Lighting Fixtures.

the containment system shall have sufficient capacity to contain 10 percent of the volume of containers stored or the volume of the largest container, whichever is greater. This special area will normally be constructed with special double containment walls to make the room explosion proof, equipped with explosion proof lighting fixtures as shown in figure 3-2, and air-conditioned or outfitted with large explosion proof refrigerators. An emergency shower and eyewash station, as shown in figure 3-3 may also be required in the facility.

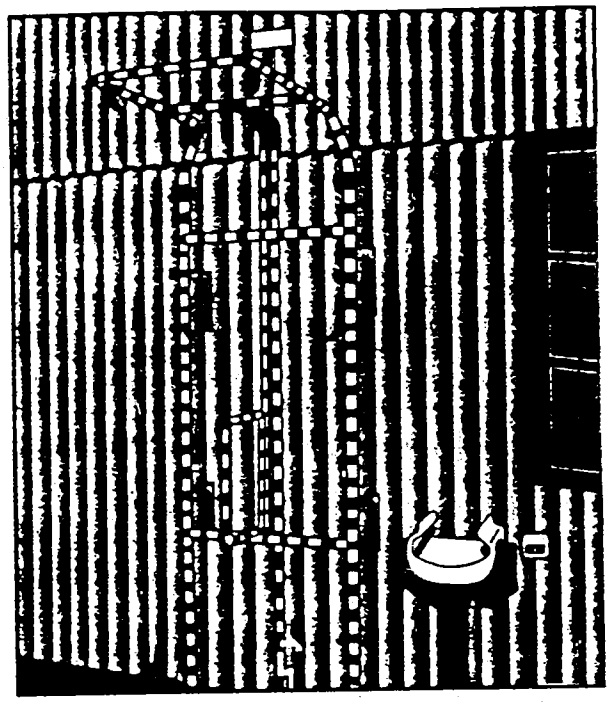

Figure 3-3. Emergency Shower and Eyewash Station.

3.4.1.3 Financial Impact. The commitment to centralized life-cycle management of HM necessitates development of a plan to identify financial resources to implement the CHRIMP concept. While not insignificant, costs associated with refurbishment and outfitting of facilities, purchasing equipment, recurring operating costs and employee salaries can be recouped, over time, through savings realized from reduced HM inventories, revenue generated from sale of recycled material and cost avoidance. For example, since March 1991, NAWS Point Mugu reports:

- $44K reduction in line items
- $21K cost avoidance in 55-gallon drums
- $40K cost avoidance/rebate reclaimed oil
- $254K cost avoidance on DD Form 1348 processing
- $130K waste stream reduction
- $26K reutilization vice disposal
- $53K revenue from sale of recycled material

Other sources which may be available to augment local funds include:

- The **Other Procurement, Navy (OPN)** is commonly used to purchase necessary material. This fund is normally used to pay for equipment and it can be spent within a period of three years once allotted.

- The **Navy Environmental Compliance Account (NECA)** consists of OP-04 sponsored line items in the Operations and Maintenance, Navy (O&MN), OPN, and Research, Development, Test and Evaluation (RDT&E) appropriations, and the Navy portion of the DoD sponsored Defense Environmental Restoration Account (DERA). Among other uses, NECA funds can be used for compliance projects, including remedial/corrective actions to ensure facilities, ships, and equipment meet environmental requirements. Reference 3-2, Chapter 3, fully describes this funds source.

- The **Productivity Enhancing Capital Investment Fund** is normally used for capital equipment which will result in long-term cost savings. An example of such cost-saving equipment is the solvent still which can reduce overall operating expenses as well as disposal costs.

- The **Productivity Investment Fund** can be used for long-range projects with cost greater than $150,000 and is complemented by the **Component Sponsored Investment Fund**.

- The **Fast Paycheck Capital Investment Fund** can be used for costs between $3,000 and $150,000. Projects selected for financing must be expected to return costs within two years.

3.4.1.4 Personnel Staffing. Staffing levels required to operate a HAZMINCEN are entirely dependent upon the magnitude of the operation, types of material being managed, physical location and design of the facilities as well as the availability of personnel to be assigned on a permanent or temporary basis. Table 3-1 illustrates the NAWS Point Mugu staffing level. Although not represented in the NAWS staffing, the HAZMINCEN has included a HW receiving person from the PWC staff. This arrangement provides an excellent bridge between NAWS and PWC for the transfer of material judged by the NAWS staff to be no longer usable.

3.4.1.5 Personnel Qualifications. The essential qualifications of a prospective HAZMAT civilian or military manager would include expertise in material control, distribution and storage, and financial and personnel management. The person assigned this responsibility should possess strong organizational and training skills as well as an ability to promote the concept of centralized HM management and control. He or she should also be familiar with, and be able to interface with, command safety, industrial hygiene, and environmental protection and compliance departments. Other members of the organization should be skilled in inventory management, computer use, warehousing, forklift operation, and the operation and maintenance of any recycling equipment to be utilized. These requirements have been recognized by the Chief, Naval Education and Training (CNET). A course leading to assignment of the new secondary

Navy Enlisted Classification (SNEC) 9595, HAZMAT Technician, has been established under cognizance of the Naval Safety School. While formal training and experience in the identification, handling and use of HM is desirable, those qualifications may not be readily available and may have to be obtained by attending appropriate schools prior to commencing the HAZMINCEN operation and from on-the-job training (OJT).

Personnel Rank/Grade	HAZMINCEN	Recycling Center
HAZMAT Officer (O-4)	1	
LT (O-3)		1
Supervisor (E-7)		1
Supervisor (E-6)	1	2
E-5 and E-4	4	3
E-3 and Below	5	4
GS-5		3
GS-4	1	
WG-5	1	
TOTAL	13	14

Table 3-1. The NAWS Point Mugu HAZMINCEN Staff.

3.4.1.6 Personnel Training. There are numerous formal training courses, as well as local training sessions offered by the Command's Safety, Health and Environmental Protection organizations, which are available to assist in qualifying HAZMINCEN personnel. At a minimum, the HAZMAT manager and supervisors should attend either the Navy Safety Center's Hazardous Material and Waste Control course (S-354) or the Occupational Health and Safety Administration (OSHA) Training Institute's Hazardous Materials course (201). Staff personnel should receive on-the-job training or other formalized training such as various courses available from the Naval Safety School (804/565-8778) and the Naval Facilities Engineering Services Center (NFESC)) (804/982-3477).

In addition to the above, there may be training courses available from local and state government agencies involved in HM and hazardous waste management. In many cases, the agencies will provide pamphlets, regulations and lists of available training, as well as other useful information and free briefings on local policies and regulations. A directory of Environmental Agencies and Points of Contact is contained in Appendix X.

Reference 3-2 (OPNAVINST 5100.23C) provides additional information regarding various training available to shore activities. As an example, audiovisual products are available from the Naval Education and Training Support Centers, Atlantic and Pacific. Their telephone numbers are (804) 444-4011/1468, DSN 564-4011/1468 and (619) 532-1360, DSN 522-1360 respectively. In some instances, training aids may also be obtained on loan from the Industrial Hygiene or Occupational Health departments of the following Navy Environmental and Preventative Medicine Units (NEPMUs):

NEPMU-2 Norfolk, VA	(804) 444-7671	DSN 564-7671
NEPMU-5 San Diego, CA	(619) 556-7070	DSN 526-7671
NEPMU-6 Pearl Harbor, HI	(808) 471-9505	DSN 430-9505
NEPMU-7 Naples, Italy	(039) 81-724-4468	DSN 625-4468
Navy Environmental Health Center	(804) 444-4657	DSN 564-4657
Navy Safety Center	(804) 444-SAFE	DSN 564-SAFE

3.4.1.7 NAVY Occupational Safety and Health (NAVOSH) Requirements. It is important that the local NAVOSH organization be involved in the planning process. This organization provides representation, technical advice and assistance on matters of safety and health as well as participating in all decision making relating to the identification and control of HM. They should assist in developing plans to cover spills and other emergencies which should include:

- **Personal Protective Equipment (PPE).** In accordance with reference 3-8 (29 CFR 1910.132), PPE for eyes, face, head and extremities must be provided for all personnel working where environmental, chemical or radiological hazards or mechanical irritants are encountered and may be capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

- **Emergency Response Plan.** An emergency response plan must be developed and implemented by all HAZMINCENs in accordance with reference 3-9 (29 CFR 1910.120). This plan will address, as a minimum, the following areas:

  - Pre-emergency planning and coordination with outside parties.
  - Personnel roles, lines of authorization, and communication.
  - Emergency recognition and prevention.
  - Safe distances and places or refuge.
  - Site security and control.
  - Evacuation routes and procedures.
  - Decontamination procedures.
  - Emergency medical treatment and first aid.
  - Emergency altering and response procedures.
  - Critique of response and follow-up.
  - PPE and emergency equipment.

3.4.1.8 Accounting Procedures. It may be necessary to design and institute a centralized financial accounting system to complement and support the CHRIMP concept. One method to accomplish this would be to determine the total amount of command funds historically spent to procure HM. Once this has been done, each department, shop or work centers budget would be decremented by its share, and a consolidated budget established for the HAZMINCEN.

For tenant activities with separate funding sources, the HAZMINCEN can submit a monthly invoice to each user activity with an itemized list of purchases. Once approved by the user activity, the invoice can then be presented to the comptroller for appropriate transfer of funds. The itemized statements should include items that have been issued free of charge or at a reduced price as a result of reutilization efforts by the HAZMINCEN. The customer will then be able to see the savings that are being generated as a result of implementation of CHRIMP.

An itemized list should also be sent to work centers within the command to indicate the items used during the month. This will permit management review at the user level so that appropriate adjustments in usage can be made. It is of primary importance that financial accounting be limited to the HAZMINCEN and not passed down to the users. This concept presents a simple and uncomplicated interface between the HAZMINCEN and the user which is highly efficient, involves minimal paperwork and creates an extremely user friendly, customer service oriented environment.

3.4.1.9 Inventory Control Procedures. A key aspect of centralized management of HM is a control system which provides on-line visibility of inventory levels and provides the capability to process material requisitions, receipts and issues. This system should also be capable of tracking material in use as well as generating necessary internal and external reports.

The HICS was developed by NAWS Point Mugu specifically to support the CHRIMP concept and is presently being used by numerous ashore and afloat commands. HICS is a user friendly, personal computer (PC)-based system designed to run on an International Business Machine (IBM) or compatible computer, preferably a 486/33, equipped with disk operating system (DOS) version 3.3 or above. A list of HICS capabilities is included as Appendix VI and a complete HICS Users Manual is at Attachment 1. HICS group training and technical support will be available from FISC Norfolk and FISC San Diego starting in early 1994.

3.4.1.10 Scheduling the Start Up. A plan should be developed to establish a phased schedule for the orderly transfer of HM currently held by work centers or tenant activities to the control of the HAZMINCEN. This plan must include an orientation and training schedule for each customer to ensure their understanding of the concept and to gain their support. The initial operation should only encompass a limited number of

work centers and/or tenant activities, and it is extremely important that this take place during a time when disruptions to the normal work schedule can be minimized. Once this limited effort is operating effectively, additional work centers and tenant activities can be scheduled for inclusion. As a part of the working agreement with the work centers a written Memorandum Of Understanding (MOU) should be executed by both parties to ensure complete agreement and understanding of the responsibilities of both sides. A sample MOU is included as Appendix XI and can be adapted to unique circumstances and arrangements.

The AUL is a most important reference document for the scheduling process since it contains the identification, quantities and physical location of all HM stored throughout the activity. It should be recognized that some part of the HM to be collected will immediately become HW for many reasons. Some material may not be identifiable, some may have expired shelf life which cannot be extended, and some may be damaged or contaminated. An estimate should be made of the material falling into this category and arrangements made with the appropriate PWC or DRMO for its proper disposal.

3.4.2 Operating the HAZMINCEN. The following paragraphs describe a typical HAZMINCEN operating scenario and are provided for ***guidance only***. Specific operations may vary from command to command, depending upon individual circumstances. Figures 3-4 and 3-5 (the NAWS Point Mugu CHRIMP Operation) are provided as an illustration.

3.4.2.1 Material Issue. When a participating work center or tenant activity customer requires a HM, he or she initiates a telephone call to the HAZMINCEN requesting delivery or issue of the material. Responsiveness to the initial request is key to a successful program. Therefore, the decision of whether to deliver the material to the customer or have the customer pick up the material must be made with great care. HAZMINCEN personnel enter the appropriate information into the HICS to identify the transaction and to determine if the material requested is in stock. Each request is reviewed to ensure that the material is contained in the AUL, that no prior issues of the same material are unaccounted for and that no unusual quantities of material are being ordered (a normal issue will be that amount required to accomplish a specific maintenance action or a one day supply). If previously issued material is unaccounted for, the customer will be contacted and a turn-in of the missing material or container will be requested. If the material is not authorized and a suitable substitute cannot be provided, store personnel will initiate a request to obtain appropriate authorization from the Commanding Officer. If the material is authorized and in stock, HICS will generate a delivery order with appropriate bar code labels and make adjustments to on-hand inventory quantities. Material classified as cost avoidance items, i.e., material initially obtained from participating work centers or tenant commands, will be issued first. If the material requested is not available from HAZMINCEN stock, the customer will be advised and an order will be placed by store personnel with the Supply Department. If the material is in stock there, store personnel will obtain it, deliver or issue the ordered

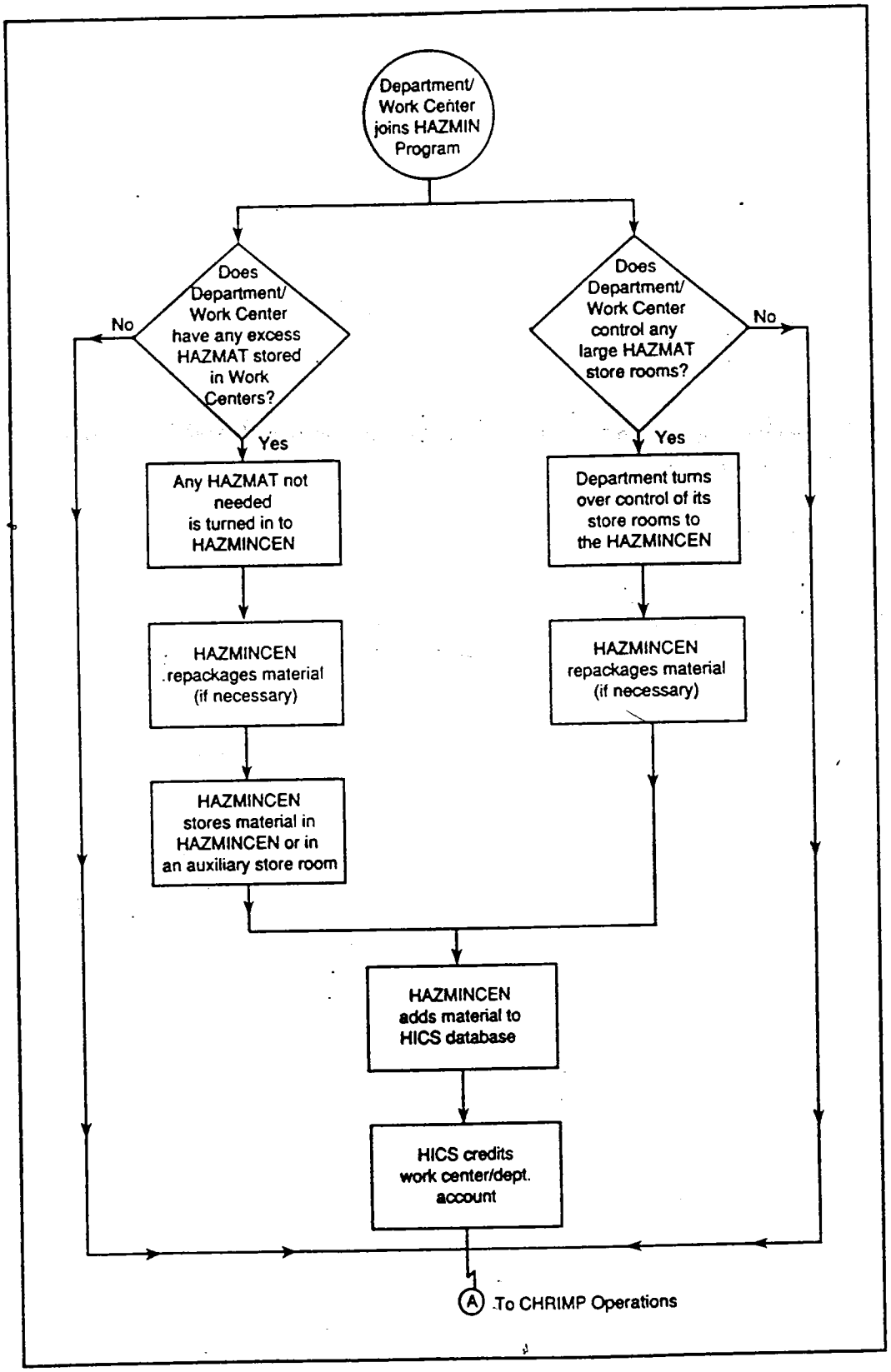

Figure 3-4. HAZMINCEN Flow Chart.

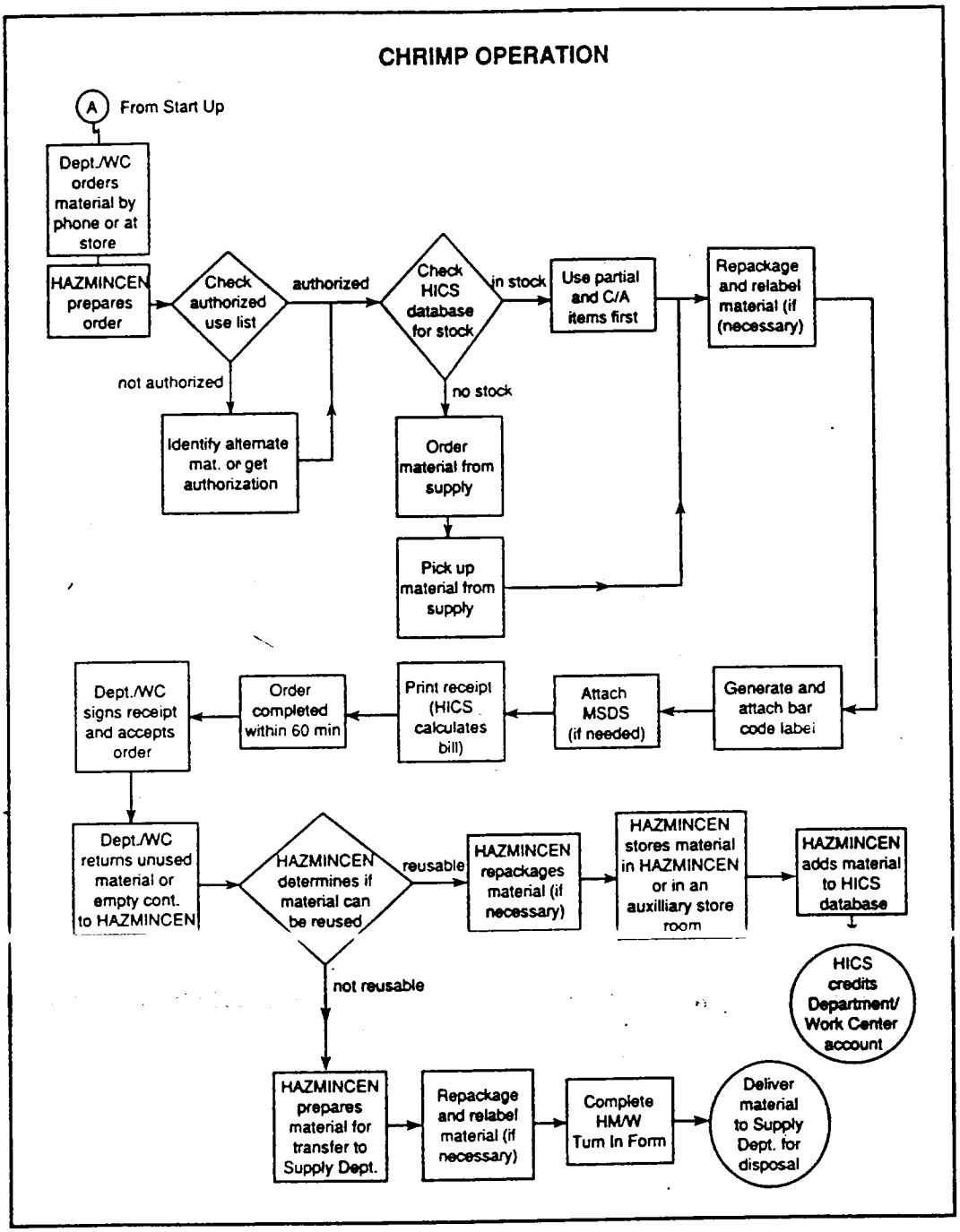

Figure 3-5. HAZMINCEN Flow Chart (cont'd).

quantity to the customer and add the remainder of the standard unit of issue to the HAZMINCEN inventory. Periodically the HICS is used to create reports of outstanding HM or containers. These reports are used to remind customers to account for all HM.

Prior to issuing or delivering the item(s), the material is packaged in the required amount and the bar code label is affixed to facilitate tracking of the material. In compliance with reference 3-3 (OPNAVINST 5100.23C), a Material Safety Data Sheet (MSDS) is printed from the Hazardous Material Information System (HMIS) or reproduced from hard copy files and provided to the user. HICS generates a receipt document, adjusts inventory levels, and calculates applicable charges to the customer.

3.4.2.2 Material Control. At the completion of the maintenance task, or at the end of the work day, the customer will arrange for the return of any unused portion of the material and its container to the HAZMINCEN. The material is examined and if the returned material and its container can be used again, it will be repackaged as necessary and returned to storage. This transaction will be entered into HICS to adjust the inventory level and to credit the customer's account. If the material or container cannot be used again, it will be processed as HW through appropriate channels. If a maintenance task cannot be completed during the day the material is issued, and authorized storage facilities exist at the work center, the HM can be retained on site until the work is completed.

3.4.2.3 Accounting. Monthly, the HAZMINCEN provides each customer with a statement documenting deliveries made, quantities issued, whether the materials were cost avoidance or regular inventory items, and the amount the customer organization will be billed. Once any discrepancies are resolved, the statement is forwarded to the comptroller for processing.

3.4.2.4 Inventory Management. Inventory levels are dynamic and interaction between the HAZMINCEN and customers is necessary so that they can be properly established and maintained. Once the inventory levels have been created and usage rates predicted, reorder points are established. When the inventory level reaches the reorder point, a requisition is submitted to the Supply Department for the required quantity. The Supply Department either fills the requisition from stock or institutes external procurement actions. When the material is received by the HAZMINCEN store, it is repackaged, as necessary, into units of issue consistent with quantities normally issued. Reorder points must be reevaluated as additional usage data is gathered since it is likely that centralized control will result in decreasing demand.

3.4.2.5 Shelf Life Management. Nearly every chemical, cleaner, paint and thinner container is marked with a manufacturer's date, lot number, retest date and the shelf life expiration date. After a period of time, some HM will deteriorate, break down or lose

potency. Some HM received by the HAZMINCEN may be beyond or close to the expiration or retest date, and if not extended or used, may become HW. The HAZMINCEN must, consequently, pursue a vigorous shelf life management program as outlined in reference 3-10 (DoD Manual 4140.27-M) and appropriate local directives. These documents contain policy and procedures applicable to material management, procurement and utilization; all of which are designed to eliminate generation of HW. In cases where problems are encountered, NAVSUP Code 4521 may be contacted for assistance.

NAWS Point Mugu has also experienced success by actively finding alternate uses for expired shelf life material such as paints and lubricants and by reclaiming certain solvents and cleaners through the distillation process. It should be noted that certain recycling efforts, usually those involving materials regulated under the RCRA, may require local and/or state approval/permits, etc.

3.4.3 Operating the HAZMINCEN Recycling Center. All Navy activities are encouraged to establish and operate efficient recycling programs that will reduce the waste stream, prevent pollution, and conserve natural resources. Operation of a recycling center is governed by appropriate regulations for management and handling of HM along with other regulations and accounting procedures unique to recycling efforts.

The interior of the recycling center should be outfitted with appropriate storage aids to facilitate the safe storage of material while awaiting shipment. Equipment and supplies required to outfit the recycling center will vary, depending upon the magnitude of individual operations.

Sale and disposal of recyclable material is the responsibility of Defense Logistics Agency and is regulated through reference 3-11 (DoD Manual 4160.21M). NAVSUP provides regular updates and clarification to the law and DoD policy regarding the management of recyclable material via naval message. To get on distribution for the updates and answers to questions on Navy recycling procedures contact NAVSUP Code 4111 at DSN 327-0865, COM (703) 607-0865.

CHAPTER 3

REFERENCES

3-1 OPNAVINST 4110.2, *Hazardous Material Control and Management (HMC&M)*

3-2 OPNAVINST 5090.1A, *Environmental and Natural Resources Program Manual*

3-3 OPNAVINST 5100.23C, *Navy Occupational Safety and Health (NAVOSH) Program Manual*

3-4 MIL-H-1032, *NAVFAC Design Manual*

3-5 NFPA *UNIFORM FIRE CODE*, Articles 79 & 89
3-6 ICBO *UNIFORM BUILDING CODE*, Chapter 9
3-7 *Naval Ships' Technical Manual*, 59086-WK-STM-010, Chapter 670, "Storage, Handling and Disposal of Hazardous General Use Consumables
3-8 29 CFR 1910.132, "General Requirements for Personal Protective Equipment"
3-9 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response"
3-10 DoDINST 4140.27M, *Shelf life Item Management Manual*
3-11 DoD Manual 4160.21M, "Defense Reutilization and Marketing Manual"

APPENDIX VI

HAZARDOUS INVENTORY CONTROL SYSTEM (HICS)

The HICS program is a user friendly, menu driven inventory control system developed at NAWS Point Mugu, CA. This system provides for the systematic, positive control and issue of HM supporting organizations with more than 11,000 personnel. Special features of HICS Version 3.4 include the following capabilities:

- User friendly pop-up menus, supported by function keys F1 to F10 which provide lists of key data.
- Barcoding options:
  - Prints Control Numbers for each product issued (Supports "cradle to grave" container tracking).
  - Prints Target Organ Warning Labels (Supplements Material Safety Data Sheets).
- Maintain a Master Hazardous Inventory List and an AUL.
- Track HM usage and Containers to the department/division/workcenter or individual level.
- Reduce complicated paperwork. Print customer issue receipt and monthly itemized bills.
- Produce required reports and custom reports. View all reports on screen or send to your printer.
- Track weights and volumes of HM and what processes use the HM (SARA Title III reporting data).
- Track total weight and volume of HM at your facility.
- Track inventory high and low limits. Produce reports needed to generate orders for new materials and disposal/resale excess stock. Prints standard DD 1348-6.
- Attachment of an Intermac scanner will allow remote site recording/tracking of returned containers or site inventory.

The HICS Users Manual (Attachment 1) provides specific details and explains current features and new system capabilities. Questions or suggestions for improvements should be directed to Commander, NAVSUP, Code SUP 4524.

APPENDIX C

EXECUTIVE ORDER 12856

EXECUTIVE ORDER 12856

FEDERAL COMPLIANCE WITH RIGHT-TO-KNOW LAWS AND POLLUTION PREVENTION REQUIREMENTS

(Signed Aug. 3, 1993; 58 FR 41981, Aug. 6, 1993)

WHEREAS, the Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C. 11001-11050) (EPCRA) established programs to provide the public with important information on the hazardous and toxic chemicals in their communities, and established emergency planning and notification requirements to protect the public in the event of a release of extremely hazardous substances;

WHEREAS, the Federal Government should be a good neighbor to local communities by becoming a leader in providing information to the public concerning toxic and hazardous chemicals and extremely hazardous substances at Federal facilities, and in planning for and preventing harm to the public through the planned or unplanned releases of chemicals;

WHEREAS, the Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109) (PPA) established that it is the national policy of the United States that, whenever feasible, pollution should be prevented or reduced at the source; that pollution that cannot be prevented should be recycled in an environmentally safe manner; that pollution that cannot be prevented or recycled should be treated in an environmentally safe manner; and that disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner;

WHEREAS, the PPA required the Administrator of the Environmental Protection Agency (EPA) to promote source reduction practices in other agencies;

WHEREAS, the Federal Government should become a leader in the field of pollution prevention through the management of its facilities, its acquisition practices, and in supporting the development of innovative pollution prevention programs and technologies;

WHEREAS, the environmental, energy, and economic benefits of energy and water use reductions are very significant; the scope of innovative pollution prevention programs must be broad to adequately address the highest-risk environmental problems and to take full advantage of technological opportunities in sectors other than industrial manufacturing; the Energy Policy Act of 1992 (Public Law 102-486 of October 24, 1992) requires the Secretary of Energy to work with other Federal agencies to significantly reduce the use of energy and reduce the related environmental impacts by promoting use of energy efficiency and renewable energy technologies; and

WHEREAS, as the largest single consumer in the Nation, the Federal Government has the opportunity to realize significant economic as well as environmental benefits of pollution prevention;

AND IN ORDER TO:

Ensure that all Federal agencies conduct their facility management and acquisition activities so that, to the maximum extent practicable, the quantity of toxic chemicals entering any wastestream, including any releases to the environment, is reduced as expeditiously as possible through source reduction; that waste that is generated is recycled to the maximum extent practicable; and that any wastes remaining are stored, treated or disposed of in a manner protective of public health and the environment;

Require Federal agencies to report in a public manner toxic chemicals entering any wastestream from their facilities, including any releases to the environment, and to improve local emergency planning, response, and accident notification; and

Help encourage markets for clean technologies and safe alternatives to extremely hazardous substances or toxic chemicals through revisions to specifications and standards, the acquisition and procurement process, and the testing of innovative pollution prevention technologies at Federal facilities or in acquisitions;

NOW THEREFORE, by the authority vested in me as President by the Constitution and the laws of the United States of America, including the EPCRA, the PPA, and section 301 of title 5, United States Code, it is hereby ordered as follows:

Section 1. *Applicability.*

1-101. As delineated below, the head of each Federal agency is responsible for ensuring that all necessary actions are taken for the prevention of pollution with respect to that agency's activities and facilities, and for ensuring that agency's compliance with pollution prevention and

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emergency planning and community right-to-know provisions established pursuant to all implementing regulations issued pursuant to EPCRA and PPA.

1-102. Except as otherwise noted, this order is applicable to all Federal agencies that either own or operate a "facility" as that term is defined in section 329(4) of EPCRA, if such facility meets the threshold requirements set forth in EPCRA for compliance as modified by section 3-304(b) of this order ("covered facilities"). Except as provided in section 1-103 and section 1-104 below, each Federal agency must apply all of the provisions of this order to each of its covered facilities, including those facilities which are subject, independent of this order, to the provisions of EPCRA and PPA (*e.g.*, certain Government-owned/contractor-operated facilities (GOCO's), for chemicals meeting EPCRA thresholds). This order does not apply to Federal agency facilities outside the customs territory of the United States, such as United States diplomatic and consular missions abroad.

1-103. Nothing in this order alters the obligations which GOCO's and Government corporation facilities have under EPCRA and PPA independent of this order or subjects such facilities to EPCRA or PPA if they are otherwise excluded. However, consistent with section 1-104 below, each Federal agency shall include the releases and transfers from all such facilities when meeting all of the Federal agency's responsibilities under this order.

1-104. To facilitate compliance with this order, each Federal agency shall provide, in all future contracts between the agency and its relevant contractors, for the contractor to supply to the Federal agency all information the Federal agency deems necessary for it to comply with this order. In addition, to the extent that compliance with this order is made more difficult due to lack of information from existing contractors, Federal agencies shall take practical steps to obtain the information needed to comply with this order from such contractors.

Sec. 2-2. *Definitions.*

2-201. All definitions found in EPCRA and PPA and implementing regulations are incorporated in this order by reference, with the following exception: for the purposes of this order, the term "person", as defined in section 329(7) of EPCRA, also includes Federal agencies.

2-202. *Federal agency* means an Executive agency, as defined in 5 U.S.C. 105. For the purpose of this order, military departments, as defined in 5 U.S.C. 102, are covered under the auspices of the Department of Defense.

2-203. *Pollution Prevention* means "source reduction," as defined in the PPA, and other practices that reduce or eliminate the creation of pollutants through: (a) increased efficiency in the use of raw materials, energy, water, or other resources; or (b) protection of natural resources by conservation.

2-204. *GOCO* means a Government-owned/contractor-operated facility which is owned by the Federal Government but all or portions of which are operated by private contractors.

2-205. *Administrator* means the Administrator of the EPA.

2-206. *Toxic Chemical* means a substance on the list described in section 313(c) of EPCRA.

2-207. *Toxic Pollutants.* For the purposes of section 3-302(a) of this order, the term "toxic pollutants" shall include, but is not necessarily limited to, those chemicals at a Federal facility subject to the provisions of section 313 of EPCRA as of December 1, 1993. Federal agencies also may choose to include releases and transfers of other chemicals, such as "extremely hazardous chemicals" as defined in section 329(3) of EPCRA, hazardous wastes as defined under the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901-6986) (RCRA), or hazardous air pollutants under the Clean Air Act Amendments (42 U.S.C. 7403-7626); however, for the purposes of establishing the agency's baseline under 3-302(c), such "other chemicals" are in addition to (not instead of) the section 313 chemicals. The term "toxic pollutants" does not include hazardous waste subject to remedial action generated prior to the date of this order.

Sec. 3-3. *Implementation.*

3-301. *Federal Agency Strategy.* Within 12 months of the date of this order, the head of each Federal agency must develop a written pollution prevention strategy to achieve the requirements specified in sections 3-302 through 3-305 of this order for that agency. A copy thereof shall be provided to the Administrator. Federal agencies are encouraged to involve the public in developing the required strategies under this order and in monitoring their subsequent progress in meeting the requirements of this order. The strategy shall include, but shall not be limited to, the following elements:

(a) A pollution prevention policy statement, developed by each Federal agency, designating principal responsibilities for development, implementation, and evaluation of the strategy. The statement shall reflect the Federal agency's commitment to incorporate pollution prevention through source reduction in facility management and acquisition, and it shall identify an individual responsible for coordinating the Federal agency's efforts in this area.

(b) A commitment to utilize pollution prevention through source reduction, where practicable, as the primary means of achieving and maintaining compliance with all applicable Federal, State, and local environmental requirements.

3-302. *Toxic Chemical Reduction Goals.* (a) The head of each Federal agency subject to this order shall ensure that the agency develops voluntary goals to reduce the agency's total releases of toxic chemicals to the environment and off-site transfers of such toxic chemicals for treatment and disposal from facilities covered by this order by 50 percent by December 31, 1999. To the maximum extent practicable, such reductions shall be achieved by implementation of source reduction practices.

(b) The baseline for measuring reductions for purposes of achieving the 50 percent reduction goal for each Federal agency shall be the first year in which releases of toxic chemicals to the environment and off-site transfers of such chemicals for treatment and disposal are publicly reported. The baseline amount as to which the 50 percent reduction goal applies shall be the aggregate amount of toxic chemicals reported in the baseline year for all of that Federal agency's facilities meeting the threshold applicability requirements set forth in section 1-102 of this order. In no event shall the baseline be later than the 1994 reporting year.

(c) Alternatively, a Federal agency may choose to achieve a 50 percent reduction goal for toxic pollutants. In such event, the Federal agency shall delineate the scope of its reduction program in the written pollution prevention strategy that is required by section 3-301 of this order.

The baseline for measuring reductions for purposes of achieving the 50 percent reduction requirement for each Federal agency shall be the first year in which releases of toxic pollutants to the environment and off-site transfers of such chemicals for treatment and disposal are publicly reported for each of that Federal agency's facilities encompassed by section 3-301. In no event shall the baseline year be later than the 1994 reporting year. The baseline amount as to which the 50 percent reduction goal applies shall be the aggregate amount of toxic pollutants reported by the agency in the baseline year. For any toxic pollutants included by the agency in determining its baseline under this section, in addition to toxic chemicals under EPCRA, the agency shall report on such toxic pollutants annually under the provisions of section 3-304 of this order, if practicable, or through an agency report that is made available to the public.

(d) The head of each Federal agency shall ensure that each of its covered facilities develops a written pollution prevention plan no later than the end of 1995, which sets forth the facility's contribution to the goal established in section 3-302(a) of this order. Federal agencies shall conduct assessments of their facilities as necessary to ensure development of such plans and of the facilities' pollution prevention programs.

3-303. *Acquisition and Procurement Goals.* (a) Each Federal agency shall establish a plan and goals for eliminating or reducing the unnecessary acquisition by that agency of products containing extremely hazardous substances or toxic chemicals. Similarly, each Federal agency shall establish a plan and goal for voluntarily reducing its own manufacturing, processing, and use of extremely hazardous substances and toxic chemicals. Priorities shall be developed by Federal agencies, in coordination with EPA, for implementing this section.

(b) Within 24 months of the date of this order, the Department of Defense (DOD) and the General Services Administration (GSA), and other agencies, as appropriate, shall review their agency's standardized documents, including specifications and standards, and identify opportunities to eliminate or reduce the use by their agency of extremely hazardous substances and toxic chemicals, consistent with the safety and reliability requirements of their agency mission. The EPA shall assist agencies in meeting the requirements of this section, including identifying substitutes and setting priorities for these reviews. By 1999, DOD, GSA and other affected agencies shall make all appropriate revisions to these specifications and standards.

(c) Any revisions to the Federal Acquisition Regulation (FAR) necessary to implement this order shall be made within 24 months of the date of this order.

(d) Federal agencies are encouraged to develop and test innovative pollution prevention technologies at their facilities in order to encourage the development of strong markets for such technologies. Partnerships should be encouraged between industry, Federal agencies, Government laboratories, academia, and others to assess and deploy innovative environmental technologies for domestic use and for markets abroad.

3-304. *Toxics Release Inventory/Pollution Prevention Act Reporting.* (a) The head of each Federal agency shall comply with the provisions set forth in section 313 of EPCRA, section 6607 of PPA, all implementing regulations, and future amendments to these authorities, in light of applicable guidance as provided by EPA.

(b) The head of each Federal agency shall comply with these provisions without regard to the Standard Industrial Classification (SIC) delineations that apply to the Federal agency's facilities, and such reports shall be for all releases, transfers, and wastes at such Federal agency's facility without regard to the SIC code of the activity leading to the release, transfer, or waste. All other existing statutory or regulatory limitations or exemptions on the application of EPCRA section 313 shall apply to the reporting requirements set forth in section 3-304(a) of this order.

(c) The first year of compliance shall be no later than for the 1994 calendar year, with reports due on or before July 1, 1995.

3-305. *Emergency Planning and Community Right-to-Know Reporting Responsibilities.* The head of each Federal agency shall comply with the provisions set forth in sections 301 through 312 of EPCRA, all implementing regulations, and future amendments to these authorities, in light of any applicable guidance as provided by EPA. Effective dates for compliance shall be: (a) With respect to the provisions of section 302 of EPCRA, emergency planning notification shall be made no later than 7 months after the date of this order.

(b) With respect to the provisions of section 303 of EPCRA, all information necessary for the applicable Local Emergency Planning Committee (LEPC's) to prepare or revise local Emergency Response Plans shall be provided no later than 1 year after the date of this order.

(c) To the extent that a facility is required to maintain Material Safety Data Sheets under any provisions of law or Executive order, information required under section 311 of EPCRA shall be submitted no later than 1 year after the date of this order, and the first year of compliance with section 312 shall be no later than the 1994 calendar year, with reports due on or before March 1, 1995.

(d) The provisions of section 304 of EPCRA shall be effective beginning January 1, 1994.

(e) These compliance dates are not intended to delay implementation of earlier timetables already agreed to by Federal agencies and are inapplicable to the extent they interfere with those timetables.

Sec. 4-4. *Agency Coordination.*

4-401. By February 1, 1994, the Administrator shall convene an Interagency Task Force composed of the Administrator, the Secretaries of Commerce, Defense, and Energy, the Administrator of General Services, the Administrator of the Office of Procurement Policy in the Office of Management and Budget, and such other agency officials as deemed appropriate based upon lists of potential participants submitted to the Administrator pursuant to this section by the agency head. Each agency head may designate other senior agency officials to act in his/her stead, where appropriate. The Task Force will assist the agency heads in the implementation of the activities required under this order.

4-402. Federal agencies subject to the requirements of this order shall submit annual progress reports to the Administrator beginning on October 1, 1995. These reports shall include a description of the progress that the agency has made in complying with all aspects of this order, including the pollution reductions requirements. This reporting requirement shall expire after the report due on October 1, 2001.

4-403. *Technical Advice.* Upon request and to the extent practicable, the Administrator shall provide technical advice and assistance to Federal agencies in order to foster full compliance with this order. In addition, to the extent practicable, all Federal agencies subject to this order shall provide technical assistance, if requested, to LEPC's in their development of emergency response plans and in fulfillment of their community right-to-know and risk reduction responsibilities.

4-404. Federal agencies shall place high priority on obtaining funding and resources needed for implementing all aspects of this order, including the pollution prevention strategies, plans, and assessments required by this order, by identifying, requesting, and allocating funds through line-item or direct funding requests. Federal agencies shall make such requests as required in the Federal Agency Pollution Prevention and Abatement Planning Process and through agency budget requests as outlined in Office of Management and Budget (OMB) Circulars A-106 and A-11, respectively. Federal agencies should apply, to the maximum extent practicable, a life cycle analysis and total cost accounting principles to all projects needed to meet the requirements of this order.

4-405. *Federal Government Environmental Challenge Program.* The Administrator shall establish a "Federal Government Environmental Challenge Program" to recognize outstanding environmental management performance in Federal agencies and facilities. The program shall consist of two components that challenge Federal agencies; (a) to agree to a code of environmental principles to be developed by EPA, in cooperation with other agencies, that emphasizes pollution prevention, sustainable development and state-of-the-art environmental management programs, and (b) to submit applications to EPA for individual Federal agency facilities for recognition as "Model Installations." The program shall also include a means for recognizing individual Federal employees who demonstrate outstanding leadership in pollution prevention.

Sec. 5-5. *Compliance.*

5-501. By December 31, 1993, the head of each Federal agency shall provide the Administrator with a preliminary list of facilities that potentially meet the requirements for reporting under the threshold provisions of EPCRA, PPA, and this order.

5-502. The head of each Federal agency is responsible for ensuring that such agency take all necessary actions to prevent pollution in accordance with this order, and for that agency's compliance with the provisions of EPCRA and PPA. Compliance with EPCRA and PPA means compliance with the same substantive, procedural, and other statutory and regulatory requirements that would apply to a private person. Nothing in this order shall be construed as making the provisions of sections 325 and 326 of EPCRA applicable to any Federal agency or facility, except to the extent that such Federal agency or facility would independently be subject to such provisions. EPA shall consult with Federal agencies, if requested, to determine the applicability of this order to particular agency facilities.

5-503. Each Federal agency subject to this order shall conduct internal reviews and audits, and take such other steps, as may be necessary to monitor compliance with sections 3-304 and 3-305 of this order.

5-504. The Administrator, in consultation with the heads of Federal agencies, may conduct such reviews and inspections as may be necessary to monitor compliance with sections 3-304 and 3-305 of this order. Except as excluded under section 6-601 of this order, all Federal agencies are encouraged to cooperate fully with the efforts of the Administrator to ensure compliance with sections 3-304 and 3-305 of this order.

5-505. Federal agencies are further encouraged to comply with all state and local right-to-know and pollution prevention requirements to the extent that compliance with such laws and requirements is not otherwise already mandated.

5-506. Whenever the Administrator notifies a Federal agency that it is not in compliance with an applicable provision of this order, the Federal agency shall achieve compliance as promptly as is practicable.

5-507. The EPA shall report annually to the President on Federal agency compliance with the provisions of section 3-304 of this order.

5-508. To the extent permitted by law and unless such documentation is withheld pursuant to section 6-601 of this order, the public shall be afforded ready access to all strategies, plans, and reports required to be prepared by Federal agencies under this order by the agency preparing the strategy, plan, or report. When the reports are submitted to EPA, EPA shall compile the strategies, plans, and reports and make them publicly available as well. Federal agencies are encouraged to provide such strategies, plans, and reports to the State and local authorities where their facilities are located for an additional point of access to the public.

Sec. 6-6. *Exemption.*

6-601. In the interest of national security, the head of a Federal agency may request from the President an exemption from complying with the provisions of any or all aspects of this order for particular Federal agency facilities, provided that the procedures set forth in section 120(j)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. 9620(j)(1)), are followed. To the maximum extent practicable, and without compromising national security, all Federal agencies shall strive to comply with the purposes, goals, and implementation steps set forth in this order.

Sec. 7-7. *General Provisions.*

7-701. Nothing in this order shall create any right or benefit, substantive or procedural, enforceable by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

/s/ William J. Clinton

THE WHITE HOUSE,
August 3, 1993.