Environmental Management Systems (EMS)
Implementation Guide for the
Shipbuilding and **Ship Repair Industry**

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Acknowledgments

This Environmental Management Systems Implementation Guide for the Shipbuilding and Ship Repair Industry was developed by the Sector Strategies Division of the U.S. Environmental Protection Agency (EPA) Office of Policy, Economics and Innovation in partnership with the American Shipbuilding Association and the Shipbuilders Council of America.

This EMS Guide is a combination of examples and tools from EPA-sponsored EMS source documents (see Appendix F for an annotated list of sources) and actual industry examples developed during the EPA Sector Strategies Shipbuilding and Ship Repair EMS pilot. Important contributions were made by the following individuals and organizations: ICF Consulting, Austin Environmental Consulting, T. Michael Chee of National Steel and Shipbuilding Company, Vince Dickinson of Bath Iron Works, Donna Elks of Electric Boat Corporation, E. Kay Freeman and Steve Lacoste of Northrop Grumman Ship Systems, Shaun Halvax of Southwest Marine, Jack Holmes and George Sladecek of FirstWave Marine, and Jackie Morris of Bender Shipbuilding and Ship Repair Company.

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Introduction and User's Guide

This Environmental Management Systems Implementation Guide for the Shipbuilding and Ship Repair Industry (EMS Guide) is a combination of examples and tools from EPA-sponsored EMS source documents (see Appendix F for an annotated list of sources) and actual industry examples developed during the EPA Sector Strategies Shipbuilding and Ship Repair EMS pilot.

The EMS Guide is meant to assist shipbuilding and ship repair facilities in weaving environmental decision-making into the fabric of the way they do business. The purpose is not only to achieve better compliance assurance, but also to improve environmental performance in areas such as resource conservation, energy efficiency, water-use efficiency, land use, and mitigation of impacts associated with noise, odor, and dust. As a result of comprehensive planning, rigorous implementation, regular checking, and effective corrective action, EMSs are helping shipyards to consistently meet their environmental goals and commitments. Shipyards that have an effective EMS are becoming more efficient, more competitive, and better able to meet other crucial challenges, such as increased security.

Many shipbuilding and ship repair facilities have components of an EMS already in place. This EMS Guide encourages the user to identify and build on existing components whenever possible. It describes an EMS that is based on the elements of the ISO 14001 standard and also incorporates EPA's National Environmental Performance Track emphasis on sustained compliance, pollution prevention, and information sharing with the community. Though there are other types of EMSs that one could adopt, and EPA does not specifically endorse any individual EMS standard, the ISO 14001 EMS is the most widely recognized and one that many companies are beginning to require their suppliers to adopt. Therefore, moving in the direction of implementation and maintenance of an EMS based on the ISO 14001 standard may be a wise business decision. The choice to build an EMS that, if desired, could be certified in the future, may make sense for you based on your business goals and needs. Facilities implementing an EMS that meets the requirements of the ISO 14001 standard can either self-declare conformance or seek third-party registration.

To facilitate your implementation process, this EMS Guide contains 18 modules—an initial laying-the-groundwork module followed by 17 modules, each of which corresponds to an EMS element. The modules are grouped into three activities that correspond generally to the plan-do-check-act model that most management systems follow. Each module contains:

- Background information that explains the EMS element and recommends what should be established and maintained for this element to be suitable and effective;
- A set of review questions and worksheets that are meant to make EMS adoption easier and more thorough;
- Sample procedures as required by the ISO 14001 standard, and accompanying forms that will be used to document conformance with the procedures. The procedures are meant to serve as templates that can be customized by your shipyard to define roles, responsibilities, activities, and record keeping for that EMS element; and
- Examples of how a shipyard might document and record information associated with the requirements of its EMS. Usually these are examples of how to complete the recommended forms.

The EMS Guide recommends that facilities establish, at a minimum, the several documented procedures required by the ISO 14001 standard. An index of sample procedures and forms is provided as ***Exhibit 11-3: Master Document List for EMS Manual***. When you create an EMS for your facility, you will want to adopt a labeling system for identifying procedures, forms, and work instructions. As you can see in the index of procedures and forms, this EMS Guide uses a hypothetical labeling system wherein environmental procedures (EP) that apply facility-wide are labeled EP-001 to EP-017. The first form associated with EP-003 is labeled EF-003.01 and the second form associated with EP-003 is labeled EF-003.02, and so forth. Environmental

work instructions (EWI) that apply to a subset of the whole facility are labeled EWI-001 to EWI-006. The first form associated with EWI-001 is labeled EWI-001.01 and the second form associated with EWI-001 is labeled EWI-001.02, and so forth.

In this EMS Guide are sample procedures and other examples of how a shipyard might document and record its EMS. Revising these examples should be much easier than starting with a blank page. However, when using these examples, it is crucial to review the requirements of your facility in accordance with company policies and the most recent federal, state, and local requirements.

Definitions of EMS terms used in this EMS Guide are provided in the text, as well as in the glossary in Appendix A.

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