

DEPARTMENT OF DEFENSE**Office of the Secretary****32 CFR Part 3****Transactions Other Than Contracts, Grants, or Cooperative Agreements for Prototype Projects**

AGENCY: Office of the Secretary, Department of Defense (DoD).

ACTION: Proposed rule; public meeting.

SUMMARY: The Director of Defense Procurement is sponsoring a public meeting to discuss the proposed rule on conditions for appropriate use and audit policy for transactions for prototype projects published in the **Federal Register** at 66 FR 58422 on November 21, 2001.

DATES: The meeting will be held on March 27, 2002 from 9 a.m. to 5 p.m.

ADDRESSES: The meeting will be held at the National Contract Management Association (NCMA), which is located at 1912 Woodford Road, Vienna, Virginia 22182. Directions to NCMA are available at <http://www.acq.osd.mil/dp/dsps/ot/pr.htm>.

FOR FURTHER INFORMATION CONTACT: David Capitano, Office of Cost, Pricing, and Finance, by telephone at 703-602-4245, by FAX at 703-602-0350, or by e-mail at david.capitano@osd.mil.

SUPPLEMENTARY INFORMATION: The Director of Defense Procurement would like to hear the views of interested parties on what they believe to be the key issues pertaining to the proposed rule on Transactions Other Than Contracts, Grants, or Cooperative Agreements for Prototype Projects published in the **Federal Register** at 66 FR 58422 on November 21, 2001. A listing of some of the possible issues for discussion, as well as copies of the written public comments submitted in response to the November 21, 2001 proposed rule, are available at <http://www.acq.osd.mil/dp/dsps/ot/pr.htm>.

Dated: February 27, 2002.

L.M. Bynum,

Alternative OSD Federal Register Liaison Officer, Department of Defense.

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DEPARTMENT OF TRANSPORTATION**Coast Guard****33 CFR Part 151**

[USCG-2001-10486]

RIN 2115-AG21

Standards for Living Organisms in Ship's Ballast Water Discharged in U.S. Waters

AGENCY: Coast Guard, DOT.

ACTION: Advance notice of proposed rulemaking; request for comments.

SUMMARY: The Coast Guard seeks comments on the development of a ballast water treatment goal, and an interim ballast water treatment standard. The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 and the National Invasive Species Act of 1996 require the Coast Guard to regulate ballast water management practices to prevent the discharge of shipborne ballast water from releasing harmful nonindigenous species into U.S. waters of the Great Lakes, and to issue voluntary guidelines to prevent the introduction of such species through ballast water operations in other waters of the U.S. These Acts further provide that the Coast Guard must assess compliance with the voluntary guidelines and if compliance is inadequate must issue regulations that make the guidelines mandatory. These guidelines and regulations must be based on open ocean ballast water exchange and/or environmentally sound alternatives that the Coast Guard determines to be at least as "effective" as ballast water exchange in preventing and controlling infestations of aquatic nuisance species (ANS). The Coast Guard will use the public's comments to help define a ballast water treatment goal and standard, both of which are essential parts of determining whether alternative ballast water management methods are environmentally sound and at least as effective as open ocean ballast water exchange (BWE) in preventing and controlling infestations of ANS.

DATES: Comments and related material must reach the Coast Guard on or before June 3, 2002.

ADDRESSES: To make sure that your comments and related material are not entered more than once in the docket, please submit them by only one of the following means:

(1) By mail to the Docket Management Facility (USCG-2001-10486), U.S. Department of Transportation, room PL-401, 400 Seventh Street SW., Washington, DC 20590-0001.

(2) By delivery to room PL-401 on the Plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202-366-9329.

(3) By fax to the Docket Management Facility at 202-493-2251.

(4) Electronically through the Web Site for the Docket Management System at <http://dms.dot.gov>.

The Docket Management Facility maintains the public docket for this rulemaking. Comments and material received from the public, as well as documents mentioned in this preamble as being available in the docket, will become part of this docket and will be available for inspection or copying at room PL-401 on the Plaza level of the Nassif Building, 400 Seventh Street SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket on the Internet at <http://dms.dot.gov>.

FOR FURTHER INFORMATION CONTACT: If you have questions about this notice, call Dr. Richard Everett, Project Manager, Office of Operating and Environmental Standards (G-MSO), Coast Guard, telephone 202-267-0214. If you have questions on viewing or submitting material to the docket, call Dorothy Beard, Chief, Dockets, Department of Transportation, telephone 202-366-5149.

SUPPLEMENTARY INFORMATION:**Other NISA Rulemaking to Date**

This rulemaking follows the publication of the Final Rule (USCG-1998-3423) on November 21, 2001 (66 FR 58381), for the Implementation of the National Invasive Species Act of 1996, that finalizes regulations for the Great Lakes ecosystems and voluntary ballast water management guidelines for all other waters of the United States, including reporting for nearly all vessels entering waters of the United States. Both rules follow the publication of the notice and request for comments for Potential Approaches To Setting Ballast Water Treatment Standards (USCG-2001-8737) on May 1, 2001, notice and request for comments on Approval for Experimental Shipboard Installations of Ballast Water Treatment Systems (USCG-2001-9267) on May 22, 2001, and the publication of notice of meetings; request for comments on The Ballast Water Management Program (USCG-2001-10062) on July 11, 2001.

Request for Comments

The Coast Guard encourages interested persons to participate in this

rulemaking by submitting written data, views or arguments. Persons submitting comments should include their name and address, identify the docket number for this rulemaking (USCG-2001-10486), and the specific section of this proposal to which each comment applies, and give the reason for each comment. Please submit all comments and related material in an unbound format, no larger than 8½ by 11 inches, suitable for copying. Persons wanting acknowledgement of receipt of comments should enclose a stamped, self-addressed postcard or envelope. Don't submit the same comment or attachment more than once. Don't submit anything you consider to be confidential business information, as all comments are placed in the docket and are thus open to public inspection and duplication. The Coast Guard will consider all comments and material received during the comment period. We may change this proposed rule in view of them.

Public Meeting

We have no plans for any public meetings, unless you request one. Some of the information that helped us prepare this notice came from the following meetings that have already been held: meetings of the Ballast Water and Shipping Committee (BWSC) of the Federal Aquatic Nuisance Species Task Force; the workshop on ballast water treatment standards sponsored by the Global Ballast Water Program (Globallast) of the International Maritime Organization (IMO) in March 2001; and two technical workshops we held in April and May 2001. If you want a meeting, you may request one by writing to the Docket Management Facility at the address under **ADDRESSES**. Explain why you think a meeting would be useful. If we determine that oral presentations would aid this rulemaking, we will hold a public hearing at a time, date, and place announced by later notice in the **Federal Register**.

Background and Purpose

Congress, in the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), as amended by the National Invasive Species Act of 1996 (NISA), directs the Coast Guard to issue regulations and guidelines for ballast water management (BWM). The goal of BWM is to prevent discharged ballast water from introducing harmful nonindigenous species (NIS) to U.S. waters.

Responding to NANPCA's directive, we published a final rule (58 FR 18330, April 8, 1993). It mandated ballast water

treatment (BWT) for the Great Lakes. These requirements appear in 33 CFR part 151, subpart C, and were later extended to include the Hudson River north of the George Washington Bridge (59 FR 67632, December 30, 1994), as required by the statute. In 1999, responding to NISA's directive, we published an interim rule (64 FR 26672, May 17, 1999) that sets voluntary BWM guidelines for all other U.S. waters, and BWM reporting requirements for most ships entering U.S. waters.

NANPCA and NISA require BWT to be executed by mid-ocean ballast water exchange (BWE), or by a Coast Guard-approved alternative BWT method. The alternative BWT must be at least as effective as BWE in preventing and controlling infestations of aquatic nuisance species (ANS). Therefore, in order to evaluate the effectiveness of alternative BWT methods, the Coast Guard must first define for programmatic purposes what "as effective as [BWE]" means. The purpose of this notice, in part, is to present for public comment various approaches to clarifying this term.

On May 1, 2001, we published a notice and request for public comments (66 FR 21807) that invited comment on four conceptual approaches to BWT standards for assessing relative effectiveness to BWE, and posed questions, all of which were developed in meetings of the BWSC. The comments we received revealed a wide range of opinion (see "*Comments on the May 1, 2001, Notice*" below), indicating the need for more discussion.

The present notice reflects comments received in response to the May 1, 2001 notice. It also draws on information taken from the Globallast workshop (March 2001). Finally, it draws on discussions of the four conceptual BWT approaches by participants invited to the April and May 2001 Coast Guard workshops. (The report of the Globallast workshop is available at <http://globallast.imo.org>. Reports from the Coast Guard workshops, when completed, will be available at <http://dms.dot.gov>.)

Comments on the May 1, 2001, Notice

We received 22 written responses to our May 1, 2001 request for comments, which set out 4 optional approaches for BWT standards, posed 5 questions related to setting the standard, and posed 3 questions relating to implementation issues. We will summarize responses to the implementation questions when we propose a specific implementation approach and testing protocol at a later date. Here are the questions we asked

about setting standards, along with a summary of the comments we received, and our response.

1. *Should a standard be based on BWE, best available technology [BAT], or the biological capacity of the receiving ecosystem? What are the arguments for, or against, each option?* Thirteen respondents specifically addressed this question. Five commenters, all associated with the shipping industry, recommended that a quantification of the effectiveness of BWE be used to set the standard. All five also stated that the language of NISA dictates this approach. Four commenters favored a BAT approach. Four commenters favored a biological capacity approach.

Participants in both the Globallast and Coast Guard workshops recommended against basing a ballast water treatment standard on the effectiveness, either theoretical or measured, of BWE. The Globallast report on the findings of the workshop stated: "It is not appropriate to use equivalency to ballast water exchange as an effectiveness standard for evaluating and approving/accepting new ballast water treatment technologies, as the relationship between volumetric exchange and real biological effectiveness achieved by ballast water exchange is extremely poorly defined. This relationship cannot be established without extremely expensive empirical testing." Participants in the two Coast Guard workshops recommended that standards be based on the level of protection needed to prevent biological invasions. The recommendations are neither endorsed nor discredited by the Coast Guard.

2. *If BWE is the basis for a standard, what criterion should be used to quantify effectiveness: the theoretical effectiveness of exchange, the water volume exchanged (as estimated with physical/chemical markers), the effectiveness in removing or killing all or specific groups of organisms, or something else; and why?* Twelve commenters specifically addressed this question. None of the 12 thought that theoretical efficacy should be used. Three recommended using volumetric effectiveness, and five considered measured effectiveness in killing/removing organisms to be the most appropriate measure. One commenter thought that all three metrics should be used, and four commenters re-expressed their opinion that exchange should not be the basis for the standard.

3. *How specifically should the effectiveness of either BWE or best available technology be determined (i.e., for each vessel, vessel class, or across all*

vessels) before setting a standard based on the capabilities of these processes? Ten respondents specifically addressed this question. One commenter recommended determining the effectiveness of exchange on a ship-by-ship basis, two thought effectiveness should be calculated for different "risk classes" of vessels or sectors of the shipping industry, one recommended that exchange be evaluated with hydrodynamic models before being evaluated on test vessels, and six advocated the use of a broad average effectiveness calculated across many types of vessels and trading patterns.

4. *What are the advantages and disadvantages of considering the probability of conducting a safe and effective BWE on every voyage when estimating the overall effectiveness of BWE?* Eleven respondents specifically addressed this question. Six comments came from vendors of ballast water treatment systems or from public and private resource protection entities. Five of these said the probability of conducting an exchange must be considered at some level, in order to better represent BWE's "real world" capability. The sixth said we should take only completed exchanges into account, because class societies could not attest to the effectiveness of systems when safety exemptions were considered. All five shipping industry commenters also advocated looking only at completed exchanges, because too many variables affect whether or not a full exchange can be conducted. The Coast Guard considers the feasibility of conducting a mid-ocean exchange to be one of the significant issues in evaluating BWE.

5. *What are the advantages and disadvantages of expressing a BWT standard in terms of absolute concentrations of organisms versus the percent of inactivation or removal of organisms?* Twelve respondents specifically addressed this question. Several expressed concern that if ballast water were taken on in a location with a very low concentration, the vessel might not have to use any treatment to meet a concentration standard. Conversely, several commenters argued that a high percentage reduction in organisms, when the initial concentration was very high, could still result in the discharge of a high concentration of organisms. These concerns should be kept in mind when commenting on the alternative standards presented below. It is important to note that, for purposes of testing the theoretical effectiveness of a technology, if testing is conducted using the highest expected natural

concentrations of organisms as the concentrations in the test medium (as recommended by participants in the Globallast and the USCG workshops), the percent reduction approach effectively becomes a concentration approach. This is because the standard percent reduction (for example, 95%) of an absolute concentration produces an absolute concentration of remaining organisms. On the other hand, for purposes of assessing compliance with the standard at the level of an individual vessel, the two approaches could have very different results.

Further Comments Needed

We seek more comments because the discussion of BWT standards has focused, until now, on the suitability of basing standards on existing technology, rather than on developing new technology that better meets the congressional intent of eliminating ballast water discharge as a source of harmful NIS.

As we noted above, the governing statutes (NANCPA and NISA) specify the use of BWE and provide that any alternative form of BWT be at least as effective as BWE in preventing and controlling the spread of ANS. At present, no alternatives have been approved, in part, perhaps, because the effectiveness of the BWE benchmark itself is not well defined. Furthermore, concerns have been voiced that mid-ocean BWE is difficult to quantify in practice, cannot be safely performed on all transoceanic voyages, and by current definition cannot be conducted on voyages that take place within 200 miles of shore and in waters shallower than 2000 meters deep.

There are only limited scientific data on the effectiveness of BWE. A few empirical studies (see references: 5, 13, 14, 15, 18) listed in this notice, indicate that BWE results in the actual exchange of 88% to 99% of the water carried in a ballast tank. The average result is quite close to the theoretical 95% efficiency of Flow-Through Exchange.

However, knowing that we exchanged 88–99% of the water does not necessarily tell us we eliminated 88–99% of the danger of ANS remaining in the ballast tank. Some of the empirical studies (see references: 5, 13, 14, 15, 18) also looked at that aspect of BWE. They found that BWE resulted in reducing the number of organisms by varying degrees, from 39% to 99.9%, depending on the taxonomic groups and ships studied.

The variability in this data reflects the fact that the studies involved different ships under experimentally uncontrolled conditions, used different

methods of calculating the percentage of water exchanged, and used different taxonomic groups to evaluate BWE's effectiveness in reducing the presence of ANS.

Technical experts at the Coast Guard and IMO workshops, and comments by the National Oceanic and Atmospheric Administration, agree that scientifically determining even the quantitative effectiveness of BWE (leaving aside its qualitative effectiveness) will be challenging.

We think Congress viewed BWE as a practical but imperfect tool for treating ballast water, and wanted to ensure that approved alternatives would not be less effective than BWE is known to be. As currently practiced, BWE produces varying results and sometimes may remove as few as 39% of the possible harmful organisms from the ballast tank. BWE is affected by a number of variables, cannot be used on coastal voyages (as currently defined), and often cannot be used by a ship on any of its voyages due to safety concerns.

The Coast Guard is currently considering an approach in which an alternative BWT method would be judged to be at least as effective as BWE if it:

- Produces predictable results,
- Removes or inactivates a high proportion of organisms,
- Functions effectively under most operating conditions, and
- Moves toward a goal that expresses the congressional intent to eliminate ballast water discharge as a source of harmful NIS.

In this notice, we are seeking comments that will help us define the standards and goals that would meet these criteria.

Issues for further comment

Your comments are welcome on any aspect of this notice, including the submission of alternative goals or standards that were not presented in today's notice. The possible goals and standards presented here are intended to stimulate discussion that will ultimately lead to a standard for assessing BWT effectiveness that will have broad scientific and public support. We particularly seek your input on the "Questions" we raise below. The Questions (Q1–Q6) refer to the following possible Goals (G1–G3) and Standards (S1–S4).

Possible Goals

G1. No discharge of zooplankton and photosynthetic organisms (including holoplanktonic, meroplanktonic, and demersal zooplankton, phytoplankton and propagules of macroalgae and

aquatic angiosperms), inclusive of all life-stages. For bacteria, Enterococci and *Escherichia coli* will not exceed 35 per 100 ml and 126 per 100 ml of treated water, respectively.

G2. Treat for living organisms at least to the same extent as drinking water.

G3. Ballast water treatment technologies would demonstrate, through direct comparison with ballast water exchange, that they are at least as effective as ballast water exchange in preventing and controlling infestations of aquatic nuisance species for the vessel's design and route.

Possible Standards

S1. Achieve at least 95% removal, kill or inactivation of a representative species from each of six representative taxonomic groups: vertebrates, invertebrates (hard-shelled, soft shelled, soft-bodied), phytoplankton, macroalgae. This level would be measured against ballast water intake for a defined set of standard biological, physical and chemical intake conditions. For each representative species, those conditions are:

- The highest expected natural concentration of organisms in the world as derived from available literature and
- A range of values for salinity, turbidity, temperature, pH, dissolved oxygen, particulate organic matter, and dissolved organic matter.

(GLOBALLAST PROPOSAL "A".)

S2. Remove, kill or inactivate all organisms larger than 100 microns in size. (GLOBALLAST PROPOSAL "B".)

S3. Remove 99% of all coastal holoplanktonic, meroplanktonic, and demersal zooplankton, inclusive of all life-stages (eggs, larvae, juveniles, and adults). Remove 95% of all photosynthetic organisms, including phytoplankton and propagules of macroalgae and aquatic angiosperms, inclusive of all life stages. Enterococci and *Escherichia coli* will not exceed 35 per 100 ml and 126 per 100 ml of treated water, respectively. (COAST GUARD WORKSHOP PROPOSAL "A".)

S4. Discharge no organisms greater than 50 microns in size, and treat to meet federal criteria for contact recreation (currently 35 Enterococci/100 ml for marine waters and 126 *E. coli*/100 ml for freshwaters). (COAST GUARD WORKSHOP PROPOSAL "B".)

Note: The capability of current technology to remove or kill 95%–99% of the zooplankton or phytoplankton, or to remove 100% of organisms larger than 50 or 100 microns, under the operational flow and volume conditions characteristic of most commercial ocean-going vessels, is not well established. Workshop participants felt these removal efficiencies are practical and

realistic initial targets. BWT to these levels would provide increased protection compared to no BWT at all, or to BWE carried out only when vessel design and operating conditions permit.

Questions

In answering the questions, please refer to Questions, Goals, and Standards by their designations (for example: Q1, G2, S3).

The following questions refer to the goals (G1–G3) and standards (S1–S4) set out in "Issues for Further Comment," above.

Q1. Should the Coast Guard adopt G1, G2, G3, or some other goal (please specify) for BWT?

Q2. Should the Coast Guard adopt any of the standards, S1–S4 as an interim BWT standard? (You also may propose alternative quantitative or qualitative standards.)

Q3. Please provide information on the effectiveness of current technologies to meet any of the possible standards. Please comment, with supporting technical information if possible, on the workshop participants' assessment that these standards are "practical and realistic initial targets".

Q4. General comments on how to structure any cost-benefit or cost-effectiveness analysis that evaluates the above four possible standards. We are requesting comments on how the Coast Guard should measure the benefits to society of the above possible standards in either qualitative or quantitative terms. How would the benefits be measured considering each possible standard would continue to allow the introduction of invasive species, but at different rates? What would the costs be to industry in each of the four proposals? How would the cost to industry differ by possible standard?

Q5. What impact would the above four standards have on small businesses that own and operate vessels?

Q6. What potential environmental impacts would the goals or standards carry?

Issues for Future Consideration

The possible goals and standards in today's notice set out basic biological parameters for the discharge of aquatic organisms ranging from bacteria to higher taxonomic groups and are intended to provide a starting point for discussion. If the framework for addressing BWT effectiveness that is discussed in this notice were adopted, the final standards would be derived from a process that incorporates the expertise of the scientific community.

We know that many practical problems will need to be addressed in

setting up a program for testing and approving BWT alternatives. We think it is premature to ask for comments on these issues until an approach (or at least an interim approach) for assessing BWT effectiveness is chosen, because many procedural aspects of the testing process will be dependent on the specific nature of the selected approach. However, we may ultimately need to address issues such as using standard indicators as evaluation tools, as participants in both Globallast and the Coast Guard workshops recommended. This would depend on:

- Identifying and validating species or physical/chemical metrics that can be used as practical and efficient standard indicators. This in turn would depend on:

- Improving sampling and analytic techniques by:
- Setting detection limits and degrees of statistical uncertainty for methods and protocols used to enumerate the abundance of organisms in treated ballast water, and on

- Setting standard testing conditions for the concentrations of indicators and a suite of physical and chemical parameters. For example, testing might be based on what the available literature shows to be the highest expected natural concentration in the world for each indicator species or variable under a range of conditions for other parameters. (This approach was recommended by participants in both the Globallast and USCG workshops.) The suite of parameters would include turbidity, dissolved and particulate organic material, salinity, pH, and temperature.

Preliminary Regulatory Evaluation

At this early stage in the process, the Coast Guard cannot anticipate whether any proposed or final rules will be considered significant, economically or otherwise, under Executive Order 12866 or under the Department of Transportation regulatory policies and procedures [44 FR 11034, February 26, 1979]. At this time, the economic impact of any regulations that may result from this notice cannot be accurately determined. The Coast Guard plans to use comments received on this advance notice of proposed rulemaking to assess these economic impacts. We will then prepare either a regulatory assessment or a detailed regulatory evaluation as appropriate, which will be placed in the docket.

To facilitate the comment process on this notice, Table 1 below presents cost information compiled from recent technical literature on ballast water technologies. Several points should be noted when reviewing this information.

First, these cost estimates are not all expressed in a constant unit. Comparisons of estimates across studies, therefore, should be conducted with caution. Second, cost estimates from the Cawthron (1998) and Agriculture, Fisheries, and Forestry—Australia (2001) reports are converted from Australian dollars based on exchange

rates published October 16, 2001 (\$0.5136 AUD = \$1.00 US Dollar). Third, these cost estimates are not expressed in constant dollars; they have not been adjusted for inflation. Finally, these costs are derived primarily through experimental and pilot projects, not actual application in the field. At this time, the Coast Guard does not endorse any of these studies in any way;

we have not yet conducted detailed cost-benefit analysis on this subject. We are making this information available to facilitate public discussion of the questions that we are posing above. We also welcome any comments and supporting documentation, pertaining to the cost estimates summarized below.

TABLE 1.—COST ESTIMATES FOR BALLAST WATER ALTERNATIVE TECHNOLOGIES FROM THE RECENT LITERATURE

| Ref. | Technology | Cost | Remark |
|----------|-------------------------------|---|---|
| 1 | Ballast water exchange | \$4.79–\$7.28 per cubic meter | Costs are reduced approximately 50 percent if gravity ballasting can be accomplished. |
| 4 | Ballast water exchange | \$4,500 fuel cost per exchange | 56,000 tons of ballast water flow through 3 volumes; time for exchange about 3 days. |
| 4 | Ballast water exchange | \$3,100–\$8,800 for fuel and pump maintenance per exchange. | Estimates for conditions on container ships, bulk carriers, and two types of tankers; 3 dilutions; time for exchange ranged from 33 to 55 hours. |
| 4 | Ballast water exchange | \$16,000–\$80,000 total cost of exchange. | Estimates for conditions on VLCC and Suezmax bulker. |
| 9 | Ballast water exchange | Qualitative discussion of cost implications. | Time lost during transit. |
| 16 | Ballast water exchange | \$0.02–\$0.10 per metric ton of ballast water. | Estimates based on study of California ports. |
| 1 | Onshore treatment facility .. | \$0.66–\$27.00 per cubic meter | Cost estimates driven by additional infrastructure required in ports. |
| 6 | Onshore treatment facility .. | \$1.4 billion for entire treatment facility .. | Facility in Valdez, Alaska; only ballast water treatment facility currently in use in U.S.; covers 1,000 acres of land, processes about 16m gallons of ballast water daily. |
| 6 | Onshore treatment facility .. | \$9m–19m for infrastructure; \$0.09–\$0.41 per metric ton of ballast water treated. | Estimate based on port-based facility located on land or a floating platform. |
| 9 | Onshore treatment facility .. | Qualitative discussion of cost implications. | Costs minimized in onshore facility located where vessels are already required to stop for customs and quarantine inspection; time delay for docking and deballasting. |
| 16 | Onshore treatment facility .. | \$7.6m–\$49.7m for infrastructure; \$142,000–\$223,000 for annual maintenance; \$1.40–\$8.30 per metric ton of ballast water treated. | Estimates based on study of California ports. |
| 1 | Thermal treatment | \$10.83–\$17.52 per cubic meter | Heating/flushing process. |
| 6 | Thermal treatment | Qualitative discussion of cost implications. | Very expensive labor and materials cost to retrofit heating coils in ballast tanks; if additional heat generation required then fuel consumption increases. |
| 11 | Thermal treatment | \$75,000–\$275,000 per system | Most cost effective in warmer waters. |
| 1 | UV treatment | \$31.66–\$186.53 per cubic meter | Low cost estimate represents UV used alone; high cost estimate reflects combination with hydrocyclone. |
| 2 | UV treatment | \$10,200–\$545,000 per system for infrastructure; \$2,200–\$11,000 per system for annual maintenance. | Cost estimates for 1,200 GPM and 8,000 GPM systems. |
| 7 | UV treatment | \$250,000–\$1m life-cycle per treatment system. | Study part of technology demonstration project. |
| 9 | UV treatment | Qualitative discussion of cost implications. | Capital investment very high; cost for installation and pipe modifications. |
| 1 | Chemical treatment | \$0.47–\$77.88 per cubic meter | Estimate based only on operating cost. |
| 7 | Chemical treatment | \$2m–\$4m life-cycle per treatment system. | Study part of technology demonstration project. |
| 9 | Chemical treatment | Qualitative discussion of cost implications. | Installation and engineering of chemical dosing system is expensive; low cost effectiveness; large capital investment. |
| 9 | Filtration | Qualitative discussion of cost implications. | Large capital investment; cost of disposal of concentrated filtrate. |
| 8 | Rapid response | \$1.5m per strike | Australia, method involved quarantine of the port and destruction of organisms when detected on a vessel in port. |

As with the cost information provided above, the Coast Guard does not currently endorse any of these studies in

any way; we have not yet conducted our own detailed assessment of their methodologies and results. Rather, we

are making this information available to facilitate public discussion of the questions that we are posing above. We

also welcome any comments, and supporting documentation pertaining to the damage estimates summarized below.

Aquatic Nuisance Species

Adverse environmental and economic effects of some ANS have been documented in a number of studies. As with the cost information provided above, the Coast Guard does not currently endorse any of these studies in any way; we have not yet conducted our own detailed assessment of their methodologies and results. Rather, we are making this information available to facilitate public discussion of the questions that we are posing above. We also welcome any comments, and supporting documentation pertaining to the damage estimates summarized below.

The most studied species, the zebra mussel, has affected the ecology and economy of the Great Lakes since introduction in the late 1980s. Some scientists believe the mussel is responsible for "profound changes in the lower food web of the Great Lakes" and massive algal blooms (see reference: 3). Zebra mussels may clog intake pipes for industrial and municipal plants, and may cause extended shut downs in order to chemically treat the pipes. In the Great Lakes basin, the annual cost of zebra mussel control has been estimated at from \$100 to \$400 million. Dramatically altering the Great Lakes ecosystems, zebra mussels have now spread throughout the Mississippi River drainage basin, thousands of inland lakes, and are threatening the West Coast (see reference: 3). There is evidence that The San Francisco and Chesapeake Bays, Gulf of Mexico, and Hawaiian coral reef may be threatened by other non-indigenous fish, mollusks, crustaceans, and aquatic plants (see reference: 3). A 1999 report (see reference: 12) estimates that the environmental damage caused by non-indigenous species in the United States (both land and water) is \$138 billion per year. The report further states that there are approximately 50,000 foreign species and the number is increasing. It is estimated that about 42% of the species on the Threatened or Endangered species lists are at risk primarily because of non-indigenous species.

The above damage estimate pertains to all non-indigenous species, both land and water. Table 2 below, adapted from the report (see reference: 12), presents estimates of the annual damages and costs of aquatic species in the United States.

TABLE 2.—ONE ESTIMATE OF THE TOTAL ANNUAL COST OF AQUATIC INVASIVE SPECIES IN BILLIONS OF DOLLARS

[See reference: 12]

| Species | Total ¹ |
|---------------------|--------------------|
| Aquatic weeds | \$0.110 |
| Fish | 1.000 |
| Green crab | 0.044 |
| Zebra mussel | 5.000 |
| Asian clam | 1.000 |
| Shipworm | 0.205 |
| Total | 7.359 |

¹ Total annual cost of species.

Small Entities

We are unable, at this time, to determine whether, under the Regulatory Flexibility Act (5 U.S.C. 601–612), any regulations resulting from this ANPRM would have a significant economic impact on a substantial number of small entities. The term "small entities" comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

If you think your business, organization, or governmental jurisdiction qualifies as a small entity and that a rule establishing standards for evaluating the effectiveness of BWT would have a significant economic impact on it, please submit a comment (see **ADDRESSES**) explaining why you think it qualifies and how and to what degree this rule would economically affect it.

Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Public Law 104–121), we want to assist small entities in understanding this ANPRM so that they can better evaluate its potential effects on them and participate in the rulemaking. If you believe that this ANPRM could lead to a final regulation that would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions, please contact Dr. Richard Everett where listed under **FOR FURTHER INFORMATION CONTACT**, above.

Collection of Information

Any final rule resulting from this ANPRM could call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520.). At this time we are unable, however, to estimate the number of

responders or the burden of responding on each responder. We will include our estimates of this information in a later notice of proposed rulemaking and allow for comments on those estimates before issuing a final rule. As always, you are not required to respond to an information collection unless it displays a valid OMB approval number.

Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on State or local governments and would either preempt State law or impose a substantial direct cost of compliance on them. We have not yet analyzed whether any rule resulting from this ANPRM would have implications for federalism, but we are aware of efforts by various states to stem invasive species in their waters. We will continue to consult with the states through the Ballast Water Working Group.

Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 or more in any one year. As stated above, we do not yet know the costs that would be associated with any rule resulting from this ANPRM. The Coast Guard will publish information regarding costs using the comments received on this ANPRM in a future publication.

Taking of Private Property

We anticipate that any proposed rule would not effect a taking of private property or otherwise have taking implications under Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights.

Civil Justice Reform

We anticipate that any proposed rule would meet the applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

Protection of Children

We anticipate that any proposed rule will be analyzed under Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, and any such rule would not create an environmental risk to health or

risk to safety that might disproportionately affect children.

Indian Tribal Governments

We anticipate that any proposed rule would not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it would likely not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes. However, we recognize that ANS may pose significant concerns for some tribal governments and are committed to working with tribes as we proceed with this rulemaking.

To help the Coast Guard establish regular and meaningful consultation and collaboration with Indian and Alaskan Native tribes, we published a notice in the **Federal Register** (66 FR 36361, July 11, 2001) requesting comments on how to best carry out the Order. We invite your comments on how any rule resulting from this ANPRM might impact tribal governments, even if that impact may not constitute a "tribal implication" under the Order, and how best to address the ANS concerns of the tribal governments.

Energy Effects

We have not analyzed this ANPRM under Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use. We have not determined whether it is a "significant energy action" under that order because we do not know whether any resulting rule would be a "significant regulatory action" under Executive Order 12866. Once we determine the economic significance of any rule stemming from this ANPRM, we will determine whether a Statement of Energy Effects is required.

Environment

The Coast Guard will consider the environmental impact of any proposed rule that results from this advance notice of proposed rulemaking. We will include either Environmental Assessment or Environmental Impact Statement in the docket for any such rulemaking as appropriate.

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Dated: August 27, 2001.

Paul J. Pluta,

Rear Admiral, U.S. Coast Guard, Assistant Commandant for Marine Safety and Environmental Protection.

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DEPARTMENT OF VETERANS AFFAIRS

38 CFR Part 3

RIN 2900-AH42

Evidence for Accrued Benefits

AGENCY: Department of Veterans Affairs.

ACTION: Proposed rule.

SUMMARY: The Department of Veterans Affairs (VA) is proposing to amend its