

DEPARTMENT OF TRANSPORTATION

Coast Guard

[USCG-1998-4819]

Vessel and Port Control Measures to Address Year 2000 (Y2K)-Related Problems

AGENCY: Coast Guard, DOT.

ACTION: Request for comments.

SUMMARY: The Coast Guard requests comments on possible actions and control measures to minimize the occurrence and effect of potential Year 2000 (Y2K)-related equipment and system malfunctions aboard vessels, at port facilities, and at Marine Terminals. Malfunctions and failures of date sensitive automation and computer processes can potentially halt critical domestic and international maritime operations. Possible measures to address this risk include rigorous equipment and systems testing on vessels and at facilities, Y2K assessments and certification, and closing or restricting access to U.S. ports.

DATES: Comments must reach the Docket Management Facility on or before March 4, 1999.

ADDRESSES: You may mail your comments to the Docket Management Facility, (USCG-1998-4819), U.S. Department of Transportation, room PL-401, 400 Seventh Street SW., Washington DC 20590-0001, or deliver them to room PL-401 on the Plaza level of the Nassif Building at the same address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The telephone number is 202-366-9329.

The Docket Management Facility maintains the public docket for this notice. Comments, and documents as indicated in this preamble, 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 at the same address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also access this docket on the Internet at <http://dms.dot.gov>.

FOR FURTHER INFORMATION CONTACT: For questions on this notice, please contact Mr. John Hannon, Project Manager, Office of Compliance, Commandant (G-MOC-2), U.S. Coast Guard Headquarters, telephone 202-267-1464. For questions on viewing material in the docket, contact Dorothy Walker, Chief, Documentary Services, Department of Transportation, telephone 202-366-9329. For questions on Y2K issues, contact the Coast Guard at 1-800-368-5647.

SUPPLEMENTARY INFORMATION:

Request for Comments

The Coast Guard encourages interested persons to respond to this notice by submitting written data, views, or arguments. Persons submitting comments should include their names and addresses, identify the docket number (USCG-1998-4819) and the specific section of this notice to which each comment applies, and give the reason for each comment. Please submit all comments and attachments in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing to the Docket Management Facility at the address under **ADDRESSES**. If you want acknowledgment of receipt of your comments, enclose a stamped, self-addressed postcard or envelope.

The Coast Guard will open a 90-day comment period for response to this notice. To ensure widest dissemination of this notice, the Coast Guard will publish a summary article in our Marine Safety Newsletter, and post it on our Marine Safety Regulations web site at <http://www.uscg.mil/hq/g-m/regs/current.html>.

The Coast Guard does not plan public meeting(s) concerning this notice. You may request a public meeting by writing to the Docket Management Facility at the address under **ADDRESSES**. The request should include the reasons why a meeting would be beneficial. If we determine that the opportunity for oral presentations will be helpful, we will hold a public meeting at a time and place announced by a later notice in the **Federal Register**.

Background and Purpose

Our society's dependence on automation and computer technology is increasing exponentially. The maritime industry incorporates automation and computer technology into almost every aspect of its business operations. Automation is used for many shipboard systems such as main propulsion, boilers, auxiliary systems, power generation, position fixing navigation systems, communications, radar, steering systems, cargo systems, and bilge/ballast controls. Automation is also used at facilities in cranes, on shoreside equipment, and in loading or unloading operations. Despite current regulations for equipment and systems testing, the potential technological malfunctions associated with the year 2000 (Y2K) problem could disrupt maritime operations. To counter this potential problem, the Coast Guard is considering using existing authority to implement more restrictive control

measures to ensure port, vessel, facility and environmental safety.

What is the "Y2K problem"? The Y2K problem is based on the widespread computer industry practice of using 2 digits instead of 4 to represent the year in databases, software applications, and hardware microchips. Certain systems will face difficulty in the year 2000 when that year is represented as "00." Unable to differentiate "00" from the year 1900, computer programs and systems aboard ships and at port facilities could malfunction or completely shut down.

How could the Y2K problem potentially affect the maritime industry? Computer programs for engine automation systems that monitor the time between required engine maintenance are a good example of the Y2K problem. If these programs misread "00" as the year 1900 instead of 2000, they may interpret that 100 years has passed since the last engine maintenance was performed and respond by shutting down systems to avert damage to the engine. Temporary loss of main engine operation at sea on a calm day with no other ships in sight may only prove inconvenient. However, the unexpected loss of a ship's propulsion in a narrow or crowded waterway could result in a serious casualty. Facilities and marine terminals are also at risk from Y2K-related problems. Systems that use time as a function of measurement such as fire detection systems, cargo tracking software, process flow controls (oil, gas, and chemical), temperature controls and alarms are most vulnerable. For example, system sensors could cause an automatic shutdown response that could in turn trigger some other fail-safe response down stream. In such a case, a release of hazardous materials could occur when overpressure safeguards react to the sudden closure of a valve against the flow of gas or liquid.

How will the Coast Guard address potential Y2K-related problems? Existing Coast Guard regulations include requirements for commercial vessel operators to conduct periodic equipment and systems tests, as well as inspections of safety, navigation and pollution prevention equipment and systems. For example, Title 33 Code of Federal Regulations (CFR) part 164 requires certain vessels to conduct arrival and departure tests to ensure the proper operation of vital navigation equipment and systems. Title 33 CFR 156.170(c)(5) requires similar testing for facilities to ensure operating or indicating equipment properly perform their intended functions. Such tests help detect malfunctions or failures of

equipment and systems regardless of the cause.

Other existing regulations give the Coast Guard broad authority to control operations in the event of hazardous circumstances. For example, 33 CFR part 160, subpart B, allows District Commanders and Captains of the Port to control vessel and waterfront facility operations to ensure safety and environmental protection.

We do not plan to address Y2K issues through new regulations. Rather, our goal is to use existing authority to respond to Y2K risks with a sufficient level of control to prevent casualties.

Y2K problems are unique and harder to detect than mechanical failures. Rigorous testing and inspections are critical elements to help detect problems. However, rigorous testing may not disclose all problems. Recent experience with Y2K testing indicates that tests conducted without manually advancing internal clocks in systems to the year 2000 are ineffective. From now until June 2000, it is critically important that vessel and facility operators conduct thorough operational tests and inspections. Officers in Charge of Marine Inspection (OCMIs) and Captains of the Port (COTPs) will ensure compliance with existing testing and inspection requirements during boardings and inspections.

OCMIs and COTPs may also take all necessary action as authorized under 33 CFR part 160, subpart B, to restrict or control the movement of vessels and operation of waterfront facilities experiencing equipment or system malfunctions or failures posing safety or environmental hazards. This reactive approach is consistent with current Coast Guard policy. However, as part of contingency planning efforts, we are considering implementing more restrictive vessel and facility operating controls during peak Y2K risk periods. For example, a COTP could require vessel movement controls such as tug escorts for certain vessels, prohibit loading and unloading operations, or close or restrict access to a port for a period of time. We are very interested in your feedback regarding what level of control we should exert over vessels and port facilities to minimize or eliminate Y2K-related casualties.

What are maritime organizations and agencies doing to address the Y2K problem? The International Maritime Organization (IMO) published two Circulars that address Y2K issues: Marine Safety Committee (MSC) Circular 804 entitled "Impact of the Year 2000 on Software Systems," and MSC circular 868 entitled "Addressing the Year 2000 Problem." These circulars

are available for inspection in the docket (USCG-1998-4819) at the address under **ADDRESSES** or on the Internet at <http://dms.dot.gov>. Both circulars contain advisory information to increase awareness of the potential programming malfunctions associated with date sensitivity and the possible effects on shipboard computers, automation and system controls. The IMO circulars also invite member governments to bring the Y2K problem to the attention of the maritime community.

In keeping with IMO's initiative, we are taking active steps to increase Y2K awareness in the maritime industry. The goal is to encourage owners and operators to evaluate each ship and facility to ensure that shipboard systems and system applications function properly in the year 2000.

The Coast Guard's outreach and coordination efforts include:

1. Distributing an informational brochure on maritime-related Y2K issues during vessel boardings and facility inspections;
2. Maintaining a toll free number (1-800-368-5647) for questions on the Y2K problem;
3. Maintaining and continually updating the Marine Safety Program's Y2K web site (www.uscg.mil/hq/g-m/Y2k.htm) with current Y2K information;
4. Sponsoring and attending industry gatherings to explain our Y2K concerns and listening to industry responses; and
5. Publishing the Coast Guard's Y2K enforcement policy in a later notice in the **Federal Register**.

What can the maritime industry do to help? Industry members are encouraged to assess applicable programs and systems as soon as possible to identify and correct any potential Y2K problems. Conducting assessments now may prevent casualties and potential operational shutdowns later.

You can also help by providing any information and supporting data that would help us evaluate the magnitude of the Y2K threat and the associated risk of malfunction for individual systems, vessels, waterfront facilities, and other maritime areas. In addition, it is extremely important to share relevant Y2K information with other ports, owners, and operators.

Finally, we need your help in answering the following questions, although comments on other issues addressed in this document are also welcome. In responding to a question, please explain your reasons for each answer, and follow the instructions under *Request for Comments* above.

1. Can the equipment and systems tests required under current regulations

detect Y2K-related problems? Will aggressive application and enforcement of these regulations sufficiently minimize or eliminate Y2K-related problems?

2. What specific standards or requirements should industry use for Y2K assessments? Are these standards reliable?

3. Should the Coast Guard exempt vessels and facilities that can provide evidence of correcting any Y2K problems from any Y2K-related port movement or operational controls?

4. Should the Coast Guard accept Y2K compliance certification from a third party such as a class society, insurance company, government, or technology company as proof of having corrected Y2K problems? If so, who?

5. Given the diverse characteristics of individual ports, should the local Captain of the Port or District Commander determine the level of Y2K controls to impose in the port area, if any? Will having different requirements in each port create confusion? Should the Coast Guard implement a uniform national program? Should there be national Y2K control standards supplemented with some limited local authority?

6. Who should the Coast Guard coordinate with at the local level in developing Y2K contingency measures? Local governments? Citizen groups? Industry?

7. Should the Coast Guard consider suspending all port operations for a period of time? If so, for how long?

8. If the Coast Guard does impose Y2K-related port and vessel controls, short of a port shutdown, what additional safety measures should we require? For example, we could require tug escorts, additional manning, emergency steering and anchoring teams on watch, manual backups for all critical automated systems, and crew drills.

9. Should vessels required to comply with the International Safety Management (ISM) Code include Y2K contingencies in their Safety Management System?

10. Are there any other potential Y2K-related issues that could affect maritime operations (such as potential problems with communications systems)?

Dated: November 27, 1998.

Joseph J. Angelo,

Acting Assistant Commandant for Marine Safety and Environmental Protection.

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