

## A. INTRODUCTION

The oceans and waterways of the world have long been used by the maritime community, shoreside industries, and municipalities as catchalls for domestic and industrial wastes. Pollution results from acts of commission and omission. In either case, the technology is available or is being developed to measure and combat the detrimental effects of pollution.

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- 1. Waterways Pollution** Our waterways are susceptible to pollution from many sources. Particulates are discharged into the air from industrial, utility, and transportation systems, and eventually enter the water through rainfall runoff or direct discharge. Ground water carries pesticides and other pollutants from rural areas into the waterways. There has been a rapid increase in the bulk transportation of hazardous substances on the nation's waterways. Oil and petroleum based products are highly visible examples, but by no means the only substances of this type (nor the most dangerous) that are moving continually through U.S. waters. The likelihood of catastrophic incidents involving these substances is a matter of constant concern. Less spectacular, everyday incidents such as vessel collisions and groundings, and failures of cargo transfer systems, also result in the pollution of the marine environment. Pollution can occur in the ocean transport of oil in bulk quantities due to tank cleaning and ballasting operations, as well as the ballasting of fuel tanks in other types of vessels. Yet another pollutant, sewage finds its way into the water system. While municipal, private, and industrial sewage systems contribute the largest percentage of sewage to the waterways, a significant amount originates from commercial and private vessels.
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- 2. Legislation** Recognizing the pollution situation, Congress enacted legislation to restrict the discharge of pollutants into U.S. waters and to punish violators. Among these enactments are:
- a. The Federal Water Pollution Control Act (FWPCA), as amended, 33 U.S.C. 1251 et seq.;
  - b. The Ports and Waterways Safety Act (PWSA), as amended, 33 U.S.C. 1221 et seq.;
  - c. The Port and Tanker Safety Act (PTSA), 33 U.S.C. 1221 and 46 U.S.C. Chapter 37;
  - d. The Marine Protection, Research and Sanctuaries Act (MPRSA), 33 U.S.C. 1401 et seq.;
  - e. The Act to Prevent Pollution From Ships (APPS), 33 U.S.C. 1901 et seq., resulting from the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78); and

- f. The National Environmental Policy Act (NEPA), 42 U.S.C. 4321 et seq.).

**NOTE:** See MSM Volume I for a more detailed explanation of these acts.

**3. FWPCA and MARPOL 73/78**

The principal statutes for controlling marine pollution are the FWPCA and APPS (MARPOL 73/78), which provide for the prevention of marine pollution by oil, hazardous substances, and sewage. The FWPCA further provides for early detection and notification of federal authorities of discharges, enforcement actions in the event of violations, response and cleanup activities, and the regulation of marine sanitation devices (MSD's) to comply with the standards set by the Environmental Protection Agency (EPA). It is the prevention aspect of the FWPCA and MARPOL 73/78, and their supporting regulations, that are addressed in this chapter.

**4. Prevention Aspect**

The prevention aspect of the FWPCA and MARPOL 73/78 and their implementing regulations include the control of commodity handling operations, and the design and construction of vessels and facilities (onshore and offshore), to minimize the occurrence of harmful discharges. To this end, federal responsibility for pollution prevention is shared between the Coast Guard and EPA. The latter is responsible for all facilities, onshore and up to 200 miles offshore, that are not transportation-related. Included in the definition of such facilities are those that drill, produce, gather, store, process, refine, transfer, distribute, or consume oil and hazardous substances (see 40 CFR 112). The Coast Guard, under the authority of 33 U.S.C. 1321(j)(1), promulgates regulations that provide equipment requirements, operating procedures, and training of personnel from vessels and "transportation-related" facilities.

## B. Oil Pollution Prevention Requirements

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- 1. Regulations** The regulations for the prevention of water pollution are authorized by Section 311(j)(1)(C) and (D) of the FWPCA, as amended (33 U.S.C. 1321 et seq.). Revised regulations, 33 CFR 154-156, became effective on 3 March 1980. The regulations were revised to better address routine operations, such as cargo tank cleaning, bilge pumping, ballasting, equipment failure, and human error which are the most frequent causes of oil spills. These operational spills can be prevented by maintenance and testing of equipment, personnel awareness, and proper procedural requirements.
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- 2. Intent** The intent of the regulations is to prevent pollution through "good marine practice" as well as compliance with "the letter of the law." If violations are detected during routine inspections, correction is the initial action to be taken; this shall be followed by a Report of Violation and formal penalty action, if appropriate (see volume I of this manual).
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**C. REQUIREMENTS FOR OIL TRANSFER FACILITIES (33CFR154)**

**1. Applicability  
(33 CFR  
154.100)**

General

a. General. The regulations are aimed at preventing discharges that threaten substantial pollution of U.S. navigable waters by oil. They are not intended only to collect civil penalties. If violations are detected during routine inspections or examinations, correction is the primary objective. Marinas normally do not transfer oil in quantities that justify stringent regulation. Also, Coast Guard personnel are not available to monitor all minor oil transfer operations. Marinas, however, are subject to 33 CFR 154 when transfers involve vessels having capacities of 250 barrels (10,500 gallons) or more of oil. A genuine risk of pollution is posed by such vessels, even when lesser quantities of oil are actually transferred. 33 CFR 154 applies to onshore facilities as defined in Section 311(a)(10) of the FWPCA, and to offshore facilities within U.S. navigable waters.

Federally Owned and Operated Facilities

b. Federally Owned and Operated Facilities. Federal facilities, regardless of the character of the vessels they service, come under the purview of 33 CFR 154 and 156 (this includes Department of Defense (DOD) and Coast Guard facilities). Primary responsibility for enforcing the requirements of 33 CFR 154 and 156 at federally owned and operated facilities resides with the federal agency owning and operating the facility, not with the Coast Guard. However, consistent with its general enforcement responsibility and in the public interest, the Coast Guard will:

- (1) Support and assist the efforts of the federal agency involved to comply with the pollution prevention regulations.
- (2) Conduct inspections and monitor transfer operations at such facilities, and enter such facilities to gain access to commercial vessels berthed there, when approval is granted by the cognizant federal agency.
- (3) Advise other agencies of violations, when observed or reported, and of requirements that must be met to achieve compliance.
- (4) When a violation is observed at a federally owned and operated facility, the captain of the port (COTP) shall:
  - (a) Formally advise the responsible official of the violation(s);
  - (b) Explore all possible means of resolving the matter and achieving compliance; and

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- (c) Submit relevant documentation to the district commander for disposition if compliance is not forthcoming.

Upon receipt of documentation from the COTP indicating violations at such facilities, the district commander shall explore all possible means of reaching a mutual agreement for achieving compliance. Such efforts shall be undertaken with the district commander's counterpart in the cognizant agency, e.g., the regional administrator, district commandant, district engineer. Such efforts should be fully documented. If this procedure fails to achieve a resolution of the situation, provide Commandant (G-M) all relevant information for resolution with the parent agency.

Federally Owned,  
Privately Operated  
Facilities

- c. Federally Owned, Privately Operated Facilities. Routine enforcement policy and procedures apply to violations at such facilities.

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**2. Definitions (33**

**CFR 154.105)** The definition of "transfer," added to 33 CFR 154-156 clarifies the applicability of the regulations to transfers of oil within vessels. The definition of "oil" in Section 311(a)(1) of the FWPCA applies to these regulations. "Oil" does not include liquefied flammable gases, nor any substance designated by EPA as a "hazardous substance" in 40 CFR 116. It does include animal and vegetable oils. The regulations apply to bulk transfers of any kind of oil to or from a vessel having a capacity of 250 barrels or more.

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- 3. Alternatives (33 CFR 154.107)** This subpart was reworded so that the COTP may consider both economic and physical conditions when reviewing a proposed alternative. However, the intent of the regulations should not be circumvented without good reason, even where alternative protection is afforded. Alternative requests should document the equivalency of protection.

Documentation

- a. Documentation. Documentation of alternatives, including safety and pollution protection measures, is required. The COTP may request additional information, if necessary, to evaluate the proposed alternative. A request will necessarily include an economic and environmental analysis. As an equivalent level of protection is required, no formal environmental impact statement is necessary.

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Waivers

- b. Waivers. As waivers from compliance are now distinguished between alternatives (granted by the COTP) and exemptions (granted only by the Commandant), COTP's shall review waivers that were granted under the initial regulations, to determine those that must be submitted to Commandant (G-M) for re-approval as exemptions. Most requests for deviations from the regulations should be processed as alternatives. A request that provides an alternative means of compliance should not be treated as an exemption request simply because numerous facilities scattered throughout several COTP zones are involved. Alternative procedures approved by the COTP should be described in the operations manual as well as the COTP's facility file.
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- 4. Exemptions** Where appropriate, exemption requests forwarded to Commandant (G-M) shall include observations or assessments of the situation from the COTP. These will aid in determining whether or not to grant an exemption. Exemption requests shall be forwarded to the Commandant only when all means of alternative compliance have been exhausted. (33 CFR 154.108)
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- 5. Letter Of Intent** The "operator," for purposes of the letter of intent, is the party responsible for the facility. This may not necessarily be an individual; if a corporation owns and operates a facility, the "operator" is that corporation and not any operating employee. (33 CFR 154.110)
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- 6. Facility Examinations** Normally, examinations for compliance with 33 CFR 154 and 156 are conducted during working hours. However, the COTP shall conduct examinations whenever the facility is operational, as deemed necessary. Facility inspections shall proceed inshore from the dock area as far as necessary to identify the "oil transfer system," including the piping arrangement used to transfer oil to or from the storage or processing operations. (33CFR154.120)
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**7. Requirement for Operations** Each facility shall have an operations manual sufficient to guide a person generally qualified in oil transfer operations in performing his or her duties in an environmentally safe manner. The manuals are intended to be "working" documents for the benefit of personnel involved in oil transfer operations. At a minimum, they must be understood by all who are designated as persons-in-charge (PIC). The operations manual should be the single source for learning standard operations as well as emergency procedures at a facility. Small facilities should have simple manuals; larger, multiproduct facilities require more comprehensive manuals. The requirement to send a copy of the operations manual with the letter of intent enables the COTP to verify that the owner/operator has established procedures for the facility to operate in an environmentally sound manner. The contents of certain manuals may be proprietary in nature. Therefore, the contents of operations manuals normally shall not be released to others unless authorized in writing by the facility owner/operator. Seek legal advice if requests for information are received. Manual (33 CFR 154.300)

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**8. Contents of Operations Manual** Personnel should know the locations of all required safety equipment. Providing cargo information is the responsibility of the vessel operator. This data must be readily available to facility personnel for safety and environmental reasons. Listing personnel names and telephone numbers on a separate sheet for easy amendment is a good idea; the regulations permit the operations manual to be in loose-leaf form for this purpose. (33 CFR 154.310)

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**9. Letter of Adequacy for Operations Manual** COTP's review operations manuals for the facilities in their zones. New facilities, and those making substantial changes to their existing manuals, must follow the procedure set forth in 33 CFR 154.320(b). A letter of adequacy addresses the scope of the manual's contents and ensures that certain information is covered in the manual, but does not constitute Coast Guard approval or certification of any particular procedure or equipment mentioned. (33CFR154.325)

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**10. Hose Assemblies**

Maximum Allowable Working Pressure (MAWP)

a. Maximum Allowable Working Pressure (MAWP). 33 CFR 154.500(b) requires oil transfer hose assemblies to have a MAWP more than the sum of the relief valve setting ( or the maximum pump pressure when no relief valve is installed) plus static head pressure of the transfer system, at the point where the hose is installed. For more information on testing pressures, see subparagraph MSM II-B6.E.8.b below. (33CFR154.500)

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Marking

- b. Marking. 33 CFR 154.500(e)(1) requires marking the MAWP on the hose. Do not mark burst pressure or test pressure on the hose. Pressures other than MAWP that are marked on hoses presently in use may be obliterated by any suitable means until replaced by hose with proper markings. There is no need to test back pressure nozzles, as they are reliable for the small hoses with which they are used. They are not intended for large hose, which is not used with flush deck fittings.

**11. Loading Arms**

The intent of this section is to provide a uniform and safe standard that is not subject to undue modification; an alternative under 33 CFR 154.107 may be requested for locally constructed arms. To avoid expensive retrofitting, only loading arms installed after 30 June 1973 are regulated. Manufacturers should be consulted in questionable cases. (33CFR154.510)

**12. Monitoring Devices**

The primary purpose of this section is to provide monitoring systems for the detection of spilled oil to ensure adequate and rapid clean-up efforts. This requirement is intended only for those cases in which visual surveillance is insufficient to detect oil spills in very sensitive areas, or in which a complex operation would likely result in a large spill without the presence of a monitoring device. In such cases, use of the oil monitor should significantly increase the probability of detection or limit the spread of spilled oil through early detection. It would be economically unreasonable to require monitoring devices at all transfer facilities. (33 CFR 154.525)

**13. Small Discharge Containment**

The intent of this section is to control small leaks at connecting points until emergency shutdown or proper removal is possible. Containment under the entire hose is not required or intended. Blanking of hose until connected, and use of hose complying with 33 CFR 154.500 requirements, should prevent most over-water spills. (33 CFR 154.530)

**14. Discharge Removal**

The optimum arrangement is a fixed drain system to remove discharges and normal precipitation from the facility. In general, the system should be either mechanically operated or gravity-operated. The phrase "safely and quickly" must be considered relative to the products involved. This section is intended to keep large surface areas of highly volatile products, such as gasoline, from forming, and to provide a means to drain precipitate or other liquids from the containment, so that the required capacity is available during the transfer. In the case of a portable containment system, its potential weight when full must be considered, and provisions must be made for emptying it. A system is unacceptable if the most likely action by the owner/operator is to drain the container into the water. (33 CFR 154.540)

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**15. Discharge  
Containment  
Equipment**

**Pre-transfer  
Booming**

- a. Pre-transfer Booming. Only unusual situations require pre-transfer booming, and there should be no great variance among COTPs in interpreting the regulation. The authority to require containment to be deployed before the transfer is mentioned specifically, because in some cases it is the only practical way to protect the environment from particularly risky transfer operations. (33 CFR 154.545)

**Time Limits**

- b. Time Limits. Under 33 CFR 154.545(c), time limits for gaining access to oil spill containment materials shall be set by the owners/operators of the facilities, subject to approval by the COTP. This helps ensure that equipment-sharing agreements among facility owners/operators are realistic and provides for adequate response to oil discharges. The operator must take currents into account when establishing time limits for boom deployment. Although booms may not contain oil when deployed in rapid currents, they may be effective in channeling its movement, and thus protect some areas from damage.

**Equipment**

- c. Equipment. Each facility must have containment equipment available, whether by direct ownership, membership in a cooperative, or prearrangement with commercial interests. Shared or contracted equipment must be located so as to be brought on-scene in a timely manner. The determination of location and timeliness should reflect local conditions; in current or tidal areas, the time to deploy will generally be less than that allowed for still water areas. In locations adjoining ecologically sensitive areas, booms may need to be set in place for each transfer operation. Each facility should be prepared to contain and remove a discharge in accordance with these regulations, the National Contingency Plan (NCP), and 33 CFR 153.

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**16. Emergency Shutdown 33  
CFR 154.550**

Facility to Vessel

- a. Facility to Vessel. This section applies specifically to the transfer of oil from facility to vessel. As the person-in-charge on the vessel must be able to stop loading immediately in the event of manifold valve failure, hose failure, or overfill, the emergency shutdown mechanism should normally be located aboard the vessel. Among the factors to be considered by the COTP in authorizing single-operator transfers (see 33 CFR 156.115) is the accessibility of the shutdown mechanism.

Alternative Measures

- b. Alternative Measures. In the event that the person-in-charge on the vessel does not remain near to the "usual operating station" where the shutdown controls are located, acceptable alternative measures must be provided to maintain the emergency shutdown capability. Acceptable alternatives must provide for continuous dedicated communications. An audible alarm system is not acceptable.

Flow Closure Devices

- c. Flow Closure Devices. The flow closure devices actuated by the shutdown system must be located on the facility side of the hose. If their use may cause hydraulic shock to the system, the system must be capable of withstanding such shock loading. Proper closure sequencing of pumps and valves may be necessary (e.g., the pumps must be stopped prior to closing the pipeline to prevent rupture), and is certainly not precluded, provided the applicable time limit is met.

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**17. Communications 33  
CFR 154.560**

Two-Way Communications

- a. Two-Way Communications. Adequate communications between the vessel and the facility are essential to coordinate control of the transfer operation. Two-way voice communications enable each person-in-charge to hear the other. In the event that these persons are not close enough to be readily heard by voice alone, the facility shall provide an effective means of communications. For single-operator transfers, and at facilities with low ambient noise levels, an electronic or sound-powered system may not be necessary. Consideration must be given, however, to the probable location of personnel during various stages of transfer operations and in inclement weather, to ensure that two-way communications are possible.

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Intrinsically Safe  
Radio Devices

- b. Intrinsically Safe Radio Devices. Radio devices used to comply with this requirement must be approved as intrinsically safe by either Underwriters Laboratories, Inc. (UL), Factory Mutual Research Corporation (FM), Canadian Standards Association (CSA), or MET Testing Company (MET). [NOTE: Intrinsically safe radios are not required on vessels certificated to carry and carrying only Grade E liquid cargoes.]

**18. Lighting 33**  
**CFR 154.570**

Adequate lighting is a prerequisite for any nighttime operation. Objective standards are needed where the COTP doubts the adequacy of lighting. Only when lighting appears inadequate to the COTP (i.e., a flashlight should not be necessary to conduct operations effectively) is specific testing necessary. At small or remote facilities, where portable lights are used or illumination is provided by a tug, the shielding of lights shall be specified in the operations manual and in the written directions for transfer operations.

**D. REQUIREMENTS FOR VESSELS (33CFR155)**

**1. Applicability**  
**33 CFR**  
**155.100**

Introduction

a. Introduction. U.S. vessels must meet the applicable requirements of 33 CFR 155 to be issued a Certificate of Inspection (COI) under the applicable subchapters of Title 46, CFR. Public vessels that would otherwise be exempt from compliance must meet these requirements, if they are to be certificated by the Coast Guard. These include vessels operated as maritime school ships and vessels of the Navy's Military Sealift Command (MSC). Consequently, a vessel's COI will be accepted as evidence that it is in compliance with 33 CFR 155.

International Oil Pollution Prevention (IOPP) Convention Certificate

b. International Oil Pollution Prevention (IOPP) Convention Certificate. Foreign and U.S. ships are required to be surveyed for compliance with MARPOL 73/78. An IOPP Certificate with the applicable supplement (Form A or Form B) will be accepted as evidence that the vessel complies with 33 CFR 155 pollution prevention requirements.

Enforcement

c. Enforcement. Primary responsibility for enforcing the regulations for public vessels rests with the federal agency owning and operating the vessel, not with the Coast Guard. However, consistent with its general enforcement responsibility and in the public interest, the Coast Guard will:

- (1) Assist the efforts of the federal owner/operator of a public vessel certificated by the Coast Guard to comply with the pollution prevention regulations by providing information and advice.
- (2) Conduct inspections and monitor transfer operations on board such a vessel only when requested and approved by the cognizant federal agency, or during renewal of the COI.
- (3) Advise other agencies of violations, when observed or reported, and of requirements that must be met to achieve compliance.
- (4) When a violation is observed on a certificated public vessel, the COTP shall:
  - (a) Formally advise the responsible official of the violations;
  - (b) Explore all possible means of resolving the matter and achieving compliance; and

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- (c) Submit relevant documentation to the district commander for disposition if compliance is not forthcoming.

Upon receipt of documentation from the COTP, the district commander shall explore all possible means of reaching mutual agreement to achieve compliance. If this fails to resolve the situation, forward all relevant information to Commandant (G-M) for resolution with the parent agency.

**Tank Barges**

- d. Tank Barges. Tank barges that are inspected under 46 CFR, Subchapter D (Tank Vessels) or Subchapter O (Certain Bulk Dangerous Cargoes) for the carriage of flammable or combustible cargoes that are not considered "oil" need not meet the requirements of 33 CFR 155. In such cases, the COI should be endorsed "33 CFR 155 need not be complied with unless oil is carried." However, oceangoing tank barges over 150 gross tons (GT) must meet the survey requirements and be issued an IOPP Certificate with Supplement Form B attached.

**Permanently Moored Vessels**

- e. Permanently Moored Vessels. For the purposes of the regulations, a vessel that is permanently moored at a fixed location, so as to be "substantially a land structure," may be considered an integral part of the facility, regardless of its current use as a pumping facility, temporary storage facility, or work platform. So as not to be subject to the provisions of 46 U.S.C. 3701, the vessel must be so securely and substantially moored by such means as cables, chains, structural steels, etc., to an onshore structure that it may be considered substantially part of that structure (see Chapter 10 of this volume). Vessels used as holding facilities, which have flammable or combustible liquid cargo in bulk aboard for any purpose other than specified below, shall be inspected as tank vessels, unless they meet these provisions.

**Vessels with Containment Systems**

- f. Vessels with Containment Systems. The inspection provisions do not apply to floating vessels that have flammable or combustible liquids within a containment system installed solely for compliance with 33 CFR 154.530, when such liquids would be routinely discharged to the shoreside part of the facility. Although floating non-tank vessels with containment systems only, will not be subject to inspection under 46 U.S.C. Chapters 33 and 37, all on board components, such as piping, collection and holding tanks, vents, and pumps shall be examined for safety and satisfactory operation as part of the facility examination referred to in 33 CFR 154.120.

2. Definitions 33  
CFR 155.110

Oceangoing

- a. Oceangoing. MARPOL 73/78 operational and equipment requirements center on whether the ship is "oceangoing" and a "new ship" or an "existing ship." A U.S. "oceangoing" ship is a vessel that is certificated for ocean service or operates at any time beyond the U.S. territorial sea. All foreign ships are "oceangoing," except those operated exclusively within the Great Lakes or Puget Sound or their connecting and tributary waters.

**NOTE:** Check the applicability section of the regulations for a particular vessel.

New or Existing  
Ship

- b. New or Existing Ship. Three dates are key to determining a vessel's status as "new" or "existing": the vessel's contract date, keel-laying date, and the delivery date. Ships with either a delivery date after 31 December 1979 or a contract date after 31 December 1975 are considered "new." If the contract date is unavailable, the keel-laying date shall be obtained from the ship's International Convention for the Safety of Life at Sea (SOLAS) Safety Construction Certificate. If the keel-laying date is after 30 June 1976, the ship is "new." If the ship's owner/operator provides documentation that the ship's contract date was before 31 December 1975, the ship is considered "existing," as the contract date takes precedence over the keel-laying date. A determination by a party nation on a specific ship's status under MARPOL 73/78 should be accepted by the local unit. If an obvious error has been made concerning a vessel's status, the COTP should contact Commandant (G-MPS-1). The local unit shall accept a party nation's determination as to whether a ship conversion is "major" or "minor." In the absence of such a determination, the COTP should apply the definitions and interpretations in MARPOL Regulations 1(6) through 8.

3. **Equivalents 33** Equivalents for MARPOL 73/78 requirements are granted by Commandant (G-M) only.  
**CFR 155.120** MARPOL 73/78 disallows the substitution of operational methods to control the discharge of oil for a design construction feature. The equivalents granted by the U.S. are contained in enclosure (7) of Commandant Instruction (COMDTINST) M16450.26. Equivalents allowed by foreign countries and acceded to by the U.S. are contained in enclosure (8) to COMDTINST M16450.26. Refer questions concerning equivalents to Commandant (G-MPS-1). It should be noted that for vessels operating exclusively in U.S. domestic service for which the oil transfer procedures calls for the use of an equivalent shore connector, a 1.5-inch quick connect fitting is permitted. This equivalence does not apply to vessels in international service nor to oceangoing vessels of 400 or more gross tons.

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**4. Exemptions**  
**33 CFR**  
**155.130**

When appropriate, exemption requests forwarded to Commandant (G-M) shall include observations or assessments of the situation from the COTP. These will aid in determining whether or not to grant an exemption. Exemption requests shall be forwarded to the Commandant only when all means of alternative compliance have been exhausted.

**5. Cargo Oil Discharge Containment**  
**33 CFR**  
**155.310**

General Provisions

a. General Provisions. The language in this section was changed to clarify the containment requirements for hoses and loading arms, and to require the specified capacity in all conditions of vessel list or trim during the transfer operation. Barges are allowed an option, unavailable to other tank vessels, to use a coaming in lieu of a large containment system. This option exists because the deck construction on many barges makes large, fixed containment impractical or unsafe. Generally, however, coamings installed around the periphery of a vessel should not be allowed in lieu of containment. The safety problems in utilizing the total deck enclosure for containment include conditions of list or trim, rain accumulation, required methods of product removal, fire hazards, structural considerations, and personnel safety. A coaming that is used in lieu of a fixed containment system must be able to keep spilled oil within the coaming and portable containers until properly drained or removed, without discharge into the water.

Drainage

b. Drainage.

(1) Acceptable mechanical means of drain closures include valves, threaded caps or plugs, or solid stoppers (e.g., rubber plugs) in conjunction with concrete (provided the concrete remains sound.) Concrete, plastic or wooden plugs alone, or rags in any fashion, are unsuitable. Rags are never suitable. The present requirements of 46 CFR 35.35-10 for plugging general deck scuppers remain valid.

(2) Drainage installations should be compatible with existing regulations, which require a check valve in the drain line, if flammable liquids are carried, and there is a direct connection of the line to a cargo tank. Drains need not be piped to cargo tanks. Alternative means of containment drainage must not create a potential for discharge. A drainage system will not be accepted when the most likely result is discharge of oil into the water or the bilges of auxiliary spaces, or the mixing of incompatible products. Use of collection tanks is encouraged; pumping of contained oil into portable drums or containers is discouraged. Arrangements between the vessel and the facility for removal of oil spilled into containment systems shall be undertaken in a timely manner.

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**6. Fuel Oil and  
Bulk  
Lubricating  
Oil Discharge  
Containment  
33 CFR  
155.320**

Applicability

- a. Applicability. 33 CFR 155.320 has been revised to require containment when lube oil is transferred and carried in bulk as stores for consumption by the vessel. This section generally applies to the area immediately surrounding the fueling station and associated vents. It does not apply to:
- (1) The vent header system;
  - (2) "Flush deck fittings," even though raised slightly off the deck to prevent the entry of water; and
  - (3) Vents for small independent auxiliary fuel tanks, such as used on barges for pump drive engines, when the tank is designed to be filled with a back flow shut-off nozzle or similar arrangement.

This regulation applies to fuel tank vents fitted with goosenecks as opposed to straight-type vents, which are common on foreign vessels. Most straight-type vents will discharge oil in a 360-degree horizontal pattern that rules out the use of portable containers. Using the bulwarks to keep the oil on the vessel and relying on coamings or plugged scuppers to contain the discharge is unacceptable. Generally, straight vents will require fixed containment around the vent head or modification of the vent itself.

Piping  
Arrangements

- b. Piping Arrangements. Unusual or complex piping arrangements on existing vessels need not be retrofitted if, in fueling the vessel, an equivalent level of protection can be demonstrated (see 33 CFR 155.107). For example, regulations imply the use of external containers. However, devices built into a vent line or a system to contain the required amount of oil, while still permitting the vent to function, will satisfy these requirements. Vent header systems that lead to a final tank for containment are also acceptable. Alternative procedures, methods, or equipment standards shall be clearly explained in the oil transfer procedures for the vessel. This requirement for containment under fuel oil and bulk lubricating vents does not apply to fixed or floating drilling rigs and other platforms.

**NOTE:** Such devices must be brought to the attention of marine chemists and must be capable of gas-freeing.

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Capacity Requirements

- c. Capacity Requirements. In general the capacity of the required fixed discharge containment for fuel oil and bulk lubricating oil vents, overflows, and fill pipes is the volume as specified in 33 CFR 155.320, for each vent, overflow, etc. However, in some cases one fixed discharge containment may suffice for more than one such vent, overflow, or fill pipe. In determining whether the required capacity for a single fixed containment is adequate for a group of vents, overflows, or fill pipes, the distance between the individual devices must be considered along with the location of the associated tanks, the related piping configurations, etc. The final containment design must ensure the containment provided for a group of vents, overflows, etc., has the capability to retain expected discharges.

**7. Bilge Slops/Fuel Oil Tank Ballast Water Discharges Aboard U.S. Non-Oceangoing Ships 33 CFR1 55.330**

Oily Wastes and Bilge Slops

- a. Oily Wastes and Bilge Slops. Most vessels have a waste or slop oil tank. All vessels must have the ability to retain oily waste and oily bilge slops aboard. Use of the bilge itself is acceptable on vessels that have essentially dry bilges, which collect only small quantities of machinery oil drippings. Vessels with wet bilges that are essentially oil-free need not provide a special tank for bilge water disposal. Such arrangements in no way constitute an exemption from assessment of a penalty for discharging a harmful quantity of oil.

Discharge of Oily Wastes and Bilge Slops

- b. Discharge of Oily Wastes and Bilge Slops. Proposals to pump oily wastes and oily bilge slops to fuel tanks or ashore through the bunkering lines have been accepted when proper safeguards have been incorporated. The acceptance of such proposals has raised questions regarding the applicability of 46 CFR 56.50-50(h). This paragraph will be revised to permit the discharge of oily wastes and bilge slops to fuel tanks and tanks ashore through bunkering lines. The system must be arranged to preclude the discharge of fuel into the bilge system. Normally, double check valves (one of these, a stop check valve) will be required between the bilge pump discharge and the bunkering line or fuel tank. The discharge to the fuel tank must enter the top of the tank, if possible. The requirement to have an oily residue (sludge) tank does not apply to U.S. non-oceangoing vessels.

**SECTION B: DOMESTIC INSPECTION PROGRAMS**

**CHAPTER 6: POLLUTION PREVENTION**

**8. Bilge Slops/Fuel Oil Tank Ballast Water Discharges on Oceangoing Ships of Less Than 400 GT  
33 CFR 155.350**

Ships in this category must either retain aboard all oily mixtures and be equipped to discharge them, by fixed or portable means, to a reception facility or have approved oily-water separating equipment. Commandant (G-MVI-3) should be contacted to verify that an oily-water separator has been approved by the International Maritime Organization (IMO). Ships in this category are not required to have a bilge alarm or bilge monitor installed. Ships failing to have the applicable equipment aboard should be processed for civil penalty assessment. For vessels which have separating equipment installed but inoperative, civil penalty proceedings should be used if reasonable efforts have not been made to make repairs; and the ship should be detained in port until the discrepancy is corrected.

**U.S. Self-Propelled Ships of ≤400 GT**

a. U.S. Self-Propelled Ships of ≤400 GT. U.S. self-propelled ships of ≤400 gross tons. May retain all oily mixtures on board in the ship's bilges. An oily residue (sludge) tank is not required.

**Nonsel-Propelled Ships with Auxiliary Machinery <2000 HP**

b. Nonsel-Propelled Ships with Auxiliary Machinery <2000 HP. Nonsel-propelled vessels outfitted with machinery of <2000 HP typically do not present a significant risk of oil pollution from the machinery space bilges. These vessels, in most configurations, are not fitted with a large number of through-hull fittings, nor do these types of vessels employ large amounts of water for cooling and steam plant operation. Therefore, a minimal amount of water is normally found in the bilges of these vessels.

**Equivalency**

c. Equivalency. An equivalency has been established between aonsel-propelled barge with installed auxiliary machinery having a total output of less than 2000 HP in spaces protected by bilge pumping and aonsel-propelled ship of 400 gross tons or less. Barges eligible for the equivalency need not have oil water separators (OWS) if they comply with the requirements set forth in 33 CFR and 155.420(a) for oily bilge slop retention and shore discharge pumping, piping, and discharge connections for oceangoing ships of 100 gross tons and above but less than 400 gross tons. As already required by 46 CFR 56.50-5(e), drip pans must also be installed on inspected vessels under any equipment subject to normal oil leakage.

Equivalency requests for barges should be evaluated for eligibility under approved equivalency for barges with auxiliary machinery having a total output of less than 2000 HP. The OCMI may authorize an eligible barge, whose owners chooses not to install an oily water separator (OWS), to be operated in accordance with the approved equivalency by making the following entry in paragraph 6.1 of the Form A Supplement to the IOPP Certificate (or paragraph 10.1 of Form B, if applicable):

*"2.2, 2.3, and 3 - the machinery space pollution potential of this vessel is equivalent to that of ships of less than 400 gross tons. The vessel is therefore outfitted to comply with the requirements of Regulations 9(2). All oil and oily wastes must be retained on board for discharge to reception facilities."*

9. **Bilge Slops Discharges—Oceangoing Ships  $\geq$  400 GT, < 10,000 GT, Excl. Ships That Carry Ballast Water In Their Fuel Oil Tanks**
- Vessels of this category must have, at a minimum, an oily-water separator capable of producing an effluent of less than 100ppm of oil. They must also have a tank for oily residues (sludge) that cannot be handled through the oily-water separator. Additionally, these vessels must have pipelines installed for the discharge of oily mixtures to waste reception facilities. (33 CFR 155.360)
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10. **Bilge Slops/Fuel Oil Tank Ballast Water Discharges on Oceangoing Ships  $\geq$  10,000 GT, and Oceangoing Ships  $\geq$  400 GT That Carry Ballast Water In Their Fuel Oil Tanks**
- In addition to an approved oily-water separator, such vessels must also have an approved bilge monitor or alarm. If the vessel owner chooses a system with an approved bilge monitor, the continuous monitor record shall be maintained aboard the vessel for 3 years from the date of the last entry on that record. (33 CFR 155.370)
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11. **Oily-Water Separating Equipment, Bilge Alarm, and Bilge Monitor Approval Standards**
- Commandant (G-MVI-3) should be contacted when there is a question concerning such equipment approved by the IMO. (33 CFR 155.380)

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**12. Pumping, Piping, and Discharge Requirements for Oceangoing Ships of  $\geq 100$  GT, but  $< 400$  GT**

This regulation requires a means on the weather deck near the discharge outlet to stop each pump that is used to discharge oily wastes. This requirement may be satisfied by an installed pressure switch that shuts down the pump that is discharging oily wastes when the stop valve is closed. (33 CFR 155.420)

**13. Placard**

The placard shall be posted, as specified, in any machinery space that generates or collects oily waste (e.g., auxiliary spaces on unmanned barges). Pleasure boats 26 feet or more in length must also comply with this provision. (33 CFR 155.450)

**14. Prohibited Oil Spaces**

This section applies to all self-propelled vessels. Where collision bulkheads are not fitted, the requirement applies to the forwardmost continuous bulkhead. (33 CFR 155.470)

**15. Designation of Person-In-Charge (PIC)**

The operator or his or her agent must designate in advance individuals who may serve as persons-in-charge; a current list of such individuals should be available. The person who signs the Declaration of Inspection (DOI) described in 33 CFR 156.150 is the "person-in-charge" until his relief signs the DOI. (33 CFR 155.700)

**16. Oil Transfer Procedures**

The intent of this section is that written directions for oil transfer operations must be aboard whenever the vessel is in service, although they are used only during transfer operations. 33 CFR 155.720(b) was added because the Coast Guard has documented spills from fuel day tank transfers, cargo tank transfers, and other internal vessel transfers. The Pollution Incident Reporting System (PIRS) documented approximately 140 spills per year from such transfers from 1973-1977. The written procedures for internal vessel oil transfers need not be so complex as for cargo or fuel transfers to a facility or another vessel; however, they should be available for reference before and during internal transfers. (33 CFR 155.720)

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**SECTION B: DOMESTIC INSPECTION PROGRAMS**

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**17. Availability of Oil Transfer Procedures 33 CFR 155.740**

- General
- a. General. The intent of this section is that vessel personnel involved in oil transfer operations know the necessary procedures, regardless of language differences. Vessel owners and operators may decide what crews to hire, but whoever supervises the transfer must be able to perform with minimal risks of pollution. Transfer procedures need not be posted on unmanned tank barges, but must be readily available to transfer personnel. On tank vessels, detailed data and procedures need not be permanently posted, but must be kept aboard the vessel in a place that is accessible to personnel involved in the transfer.
- Posted Procedures
- b. Posted Procedures. Directions for transfer operations, with the contents required by 33 CFR 155.750, can be written simply enough to be posted; no separate manual is necessarily required. Such directions are not intended as training manuals for tankermen, but they must explain any abnormal or complicated instructions so that the transfer system may be operated safely. On an unmanned tank barge, for example, a simple line drawing of the piping arrangement showing any unique features and properly labeled, may suffice. Emergency phone numbers shall also be entered in these procedures.

**18. Contents of Oil Transfer Procedures 33 CFR 155.750**

This regulation requires detailed information for the oil products transferred to or from a vessel. Its intent is to ensure that the prevention regulations are applied to all oil products transferred in bulk. Tank barges have had difficulty keeping oil cargo information on board due to space limitations, and because 33 CFR 155.750(a)(1) has been strictly interpreted to require a separate cargo information card for each cargo for which the barge is certificated. As this section is intended to provide the tankerman or person-in-charge with information on the hazards and correct handling of the products with which he or she is dealing, only information cards for cargoes actually aboard should be required. Cargoes with similar characteristics can be listed together on one information card for convenience; however, those cargoes with significantly different characteristics (such as different grades) should be listed separately. Marine safety personnel should:

- a. Point out essential cargo information, such as special hazards, if the cargo is different from oil, and procedures for oil spills;
- b. Allow summary data where feasible; and
- c. Allow revision of the procedures under 33 CFR 155.760, when legitimate problems arise in existing procedures.

**SECTION B: DOMESTIC INSPECTION PROGRAMS**

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- 19. Emergency Shutdown** This section addresses the transfer of oil from a vessel to a facility or to other vessels. Installation of additional remote shutdown stations may be necessary, depending upon the movements of the Person-in-Charge (PIC) during the transfer. In lieu thereof, consideration may be given the use of appropriate portable radio communications between the PIC and the crewmember located at the remote shutdown station. (33 CFR 155.780)
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- 20. Communications** This regulation requires continuous communications to ensure that rapid shutdown of the transfer is possible. Voice communications may not be sufficient, due to ambient noise levels in the area or distance between persons-in-charge. (33 CFR 155.785)
- 
- 21. Deck Lighting** The vessel is responsible for providing illumination consistent with the requirements of 33 CFR 154.570 to ensure pollution-free operation. The adequacy of existing vessel cargo deck lighting will normally be determined by practical demonstration. Verification by instruments may be required in questionable instances. (33 CFR 155.790)
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- 22. Tank Vessel Security** Notwithstanding the provisions of 46 CFR 35.05-15(b), moored tank barges shall be kept under surveillance when they are not gas free. Boarding officers must assess each situation to ensure that local procedures satisfy the requirement for vessel security, in the particulars of mooring/berthing facilities, location of personnel acting as watchmen, environmental considerations, and other factors. (33 CFR 155.810)
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- 23. Tank Vessel Integrity** The listed openings must be tightly shut, except as allowed by 33 CFR 155.815(b), to prevent the entry of water or loss of oil. When tank vessels have oil cargo or oil residue aboard while in U.S. navigable waters or the contiguous zone, they must comply with the provisions of this section. Tank vessels that are gas-freed are not covered by this section. (33 CFR 155.815)
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- 24. Records** Records that must be maintained and "available for inspection by the COTP or OCMI" shall be readily available to Coast Guard personnel. In the case of unmanned tank barges, they generally will be kept with the vessel's COI. The licensed officer or certificated tankerman who will conduct the transfer operation in each locale shall be listed as required by 33 CFR 155.700. (33 CFR 155.820)
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**E. REQUIREMENTS FOR TRANSFER OPERATIONS INVOLVING VESSELS (33CFR156)**

**1. Applicability** Government owned vessels engaged in commerce are subject to these requirements; other public vessels are usually required by agency guidelines to meet or exceed them. Transfers of oil to, from, or within a vessel are regulated, if the vessel has a capacity of 250 barrels or greater of "that" oil (including internal fuel and lube oil transfers, which have been the source of numerous spills in the past). The word "that" is emphasized to draw attention to its presence in 33 CFR 156.100 (also 33 CFR 154.100). The regulation was not meant to apply to a vessel with a cumulative on board capacity of 250 or more barrels of oil, but rather to vessels with an on board capacity of 250 or more barrels of a specific type of grade of oil. (33 CFR 156.100)

**2. Suspension Orders** The intent of this section is to allow for issuance of rapid suspension orders, when conditions threaten an imminent discharge of oil; the rule also allows suspension if Coast Guard personnel are not allowed access to inspect the operation to verify compliance. The COTP or officer in charge, marine inspection (OCMI) shall be advised immediately of any action to suspend a transfer operation (in most cases, he or she is consulted prior to any suspension order). In any event, the operator is free to immediately contact the COTP or OCMI to question the suspension order, or to advise of corrective action to have the order lifted. (33 CFR 156.112)

**3. Person-In-Charge: Limitations 33 CFR 156.115** Generally, the facility and each vessel involved should have a person-in-charge during an oil transfer, unless the COTP determines that there is no increased risk of pollution in single-operator transfers involving more than one vessel. In determining whether to grant a request for a single-operator transfer, the COTP should consider the following:

- a. At the facility in question, and under specified or controlled conditions, can one person effectively perform all required operations?
- b. How complex is the operation? What degree of mechanization is available to assist the operator?
- c. Can one person-in-charge operate the emergency shutdown for each transfer and respond to spills adequately?
- d. What has been the past performance of the facility?

Mooring two adjacent barges manifold-to-manifold may be an acceptable arrangement for a single-operator transfer, mooring them end-to-end, which places the manifolds a considerable distance apart, may be unacceptable (see paragraph 31.C.17 above). Such requests should not be referred to Commandant (G-M) as exemption requests under 33 CFR 156.110.

**4. Requirements  
for Oil  
Transfer**

- General
- a. General. Vessel and facility owner/operators are responsible for the actions or inactions of their employees, and to train personnel and ensure their compliance with safety and environmental standards. Because personnel error is a predominant cause of oil spills, training and personnel compliance are essential to any pollution prevention program. (33 CFR 156.120)
- Vessel Moorings
- b. Vessel Moorings (33CFR156.120(a)). The intent is for mooring lines to be regularly checked throughout the transfer operation, to prevent the parting of hoses that could lead to an oil spill. If the person-in-charge of a vessel or facility is not satisfied with the intended operation at the pretransfer conference, the transfer shall not proceed until such time as the process is clearly understood and accepted. In crew or watch changes during cargo transfers, the oncoming crewmember should ensure that all provisions of the DOI are being met; when he or she signs the form, he or she becomes the person-in-charge. (33 CFR 156.120(a))
- Fixed and Portable Transfer Systems  
33 CFR 156.120(g)
- c. Fixed and Portable Transfer Systems (33CFR156.120(g)). This regulation supersedes the provisions of 46 CFR 35.35-20(d), which allows loading of Grade D and E cargoes through an open hatch. Due to static electricity combustion hazards produced by free-falling Grade D and E cargoes, and the health hazard from fumes posed to personnel in the cargo hold above the "deep tank," loose hose transfers over hatch tops are not permitted. The term "fixed connection" should be interpreted to mean the fixed cargo piping system installed on the vessel. In cases where the fixed cargo piping system does not exist, or where it is impossible or undesirable to use this system, the COTP should consider granting an alternative under 33 CFR 156.107 to allow use of a "portable transfer system." This system should consist of the following:
- (1) Hose that meets the requirements of 33 CFR 154.500, or portable piping that meets the requirements of 46 CFR 56.
  - (2) Connections that meet the requirements of 33 CFR 156.130.
  - (3) A closure, such as a manhole cover, Butterworth plate, or flange, or deepwell pump stack, that forms a vaportight seal over the opening in the tank top through which the cargo is transferred. This closure should be bolted or dogged in place, and the hose and drop line should be connected to it.

**SECTION B: DOMESTIC INSPECTION PROGRAMS**

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**NOTE:** The alternative of a portable transfer system should be restricted to transfers of Grade D and E cargoes. However, approval has previously been given by Commandant (G-MSE) to certain parcel chemical tankers for transfer of cargo by this method. Continued acceptance should be considered for such vessels.

- (4) A metallic drop line that meets the requirements of 46 CFR 153.282 (not necessary for transferring Grade E, edible vegetable or animal oils).
- (5) A drip pan of at least 1/2-barrel capacity under each connection on the weather deck or ashore.
- (6) A shutoff valve at or near the point of entry into the tank.

Securing of Certain Discharge and Sea Suction Valves 33 CFR 156.120(h)

- d. Securing of Certain Discharge and Sea Suction Valves (33 CFR 156.120(h)). This regulation prohibits simultaneous cargo transfer and ballasting or deballasting of cargo tanks, except for specific circumstances set forth in 33 CFR 157 that are consistent with MARPOL 73/78. These are:
  - (1) Ballasting or deballasting of segregated ballast tanks (SBT's) because the pump and piping system are separate from the cargo system;
  - (2) Ballasting or deballasting of dedicated clean ballast tanks (CBT's), in accordance with 33 CFR 157 or where an independent ballast system for CBT's is installed; and
  - (3) Simultaneous ballasting and cargo discharge, in accordance with 33 CFR 157, to prevent hydrocarbon vapor emissions on a tank vessel with a crude oil washing (COW) system. The intent is to prevent accidental mixing of ballast water and cargo oil, or loss of oily mixtures to the water.
- e. Hose Requirements (33 CFR 156.120(j)). If the first fabric layer (the "breaker" layer) is loosely woven and primarily intended to aid in bonding the cover to the rest of the hose, it is not considered a reinforcement layer. Hose repairs are allowed, provided the reinforcement is not penetrated, there are no leaks, and the repaired hose meets the testing requirements in 33 CFR 156.170.
- f. Emergency Shutdown Mechanism (33 CFR 156.120(r)). This paragraph is meant to ensure that the equipment is operable. Triggering the device is not always necessary to do this.

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**CHAPTER 6: POLLUTION PREVENTION**

- g. Duties of Personnel (33 CFR 156.120(t) and (u)). 33 CFR 156.120(t)(1) has been modified to make it clear that the person-in-charge must be able to supervise all personnel during transfer operations. "At the site" means that the transfer point is in view, and that the person-in-charge is in a position to supervise the overall transfer operation and to respond to emergencies immediately. The requirements in 33 CFR 156.120(t) and (u) are not redundant. 33 CFR 156.120(t) applies to the person-in-charge; 33 CFR 156.120(u) requires all personnel on duty to comply with transfer guidelines. However, if a person-in-charge is engaged in a single-operator transfer, he or she must comply with the requirements of both 33 CFR 156.120(t) and (u). In making crew or watch changes, oncoming crewmembers shall ensure that all provisions of the DOI are being met. By signing the declaration, the oncoming person-in-charge assumes responsibility for the transfer from that point on.
- h. Communications (33 CFR 156.120(v)). This paragraph does not require persons-in-charge to speak English, but it does require these persons to be able to speak to each other directly or through an interpreter who is continually present (this assumes that each, in turn, can communicate with his subordinates).

**5. Discharge Cleanup**

The intent of this section is to control the spread of oil and to check its source before resuming transfer operations. COTP authorization is required for resumption of normal transfer operations, not for the removal of discharged oil from the water and its return to proper storage. As long as removal by the spiller is performed properly, the COTP will not interfere in the cleanup operations. There should, of course, be no spills or leaks in the work area during transfer operations. A leak into containment devices is not considered a discharge into the water; stopping a leak without halting the transfer may be sufficient. However, the specified containment capacity must be available throughout the transfer operation. (33 CFR 156.125)

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**6. Declaration of Inspection (DOI)** 33 CFR 156.150(f) requires operators of vessels and facilities to keep a copy of the DOI aboard for 1 month. When vessels (particularly unmanned barges) operate in a relatively limited area and conduct many transfers per month, so that unreasonably large numbers of DOI's would accumulate, the COTP may permit the vessel operator to keep only the DOI from the last transfer aboard. In most cases, the COTP will be concerned only with the most recent transfer that may have caused a spill. If more information is required, the facility copy of the DOI is available for 1 month (in all but vessel-to-vessel transfers). Should a problem arise with a particular vessel, the COTP should monitor the vessel's operations directly, rather than rely upon the DOI, to verify routine compliance. The requirements of 46 CFR 35.35-30 will be revised to ensure compatibility with the DOI requirements of 33 CFR 156.150. The ship/shore safety checklist from the International Oil Tanker and Terminal Safety Guide, sufficiently expanded to include the requirements of these regulations, is acceptable. (33 CFR 156.150)

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**7. Supervision By Person-In-Charge** If the person-in-charge must use a shelter during transfer operations in bad weather, the shelter must allow proper observation and supervision of the transfer and unimpeded operation of the emergency shutdown mechanism. (33 CFR 156.160)

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**8. Equipment Tests and Inspections**

Introduction a. Introduction. The high pressure test is intended to expose a weakness or leak under controlled conditions, so that corrective action can be taken before a spill. Testing to 1.5 MAWP is standard engineering practice and does not damage or destroy a hose in good working condition. On the other hand, testing only to MAWP is not a conclusive indicator of hose condition and is not suitable to determine that a hose is safe for transfer operations. Hose, piping, and loading arms covered by this regulation are not subject to the testing required under 33 CFR 126.15(o). (33 CFR 156.170)

**SECTION B: DOMESTIC INSPECTION PROGRAMS**

**CHAPTER 6: POLLUTION PREVENTION**

Transfer Piping  
Systems

b. Transfer Piping Systems.

- (1) A vessel's "oil transfer pipe system" includes the discharge pump and piping or hose between the pump and the vessel's deck manifold (which connects to the facility or other vessel's transfer system). The portions of the vessel's oil transfer pipe system, not including nonmetallic hose(s), must be tested annually to a minimum of 1.5 times the NAWP of the pipe system. In this instance, the MAWP can be assumed to be either the pressure at which the transfer piping relief valve is set or, where no relief valve(s) are fitted, the maximum discharge pressure including hydraulic shock that can be developed by the vessel's pump. For centrifugal pumps this is the pressure developed by the pump at zero flow conditions, i.e., pump "shutoff head." All nonmetallic cargo hose(s) used on a vessel as part of its oil transfer system must also be tested to 1.5 times its MAWP, which will be a minimum of 1,552 kPa per 33 CFR 155.800 and 156.170(c)(1).
- (2) The test pressure for facility transfer piping and loading arm(s) under 33 CFR 156.170(c)(4) is 1.5 times the MAWP. This test pressure may be less than 1,552 kPa if the facility operator can demonstrate to the COTP's satisfaction by written procedures in their operations manual that an operating pressure or relief valve setting of less than 1,034 kPa is used by the facility. The hose that runs between the facility's manifold and the vessel's deck manifold is separate and distinct from the facility "oil transfer pipe system" and must be tested to 1.5 times the hose's MAWP but not less than 1,552 kPa. This figure represents 1.5 times a MAWP of at least 1,034 kPa, required for facility oil hose assemblies under 33 CFR 154.500. A facility "oil transfer system" extends from the last valve inside the containment required by the EPA (See 40 CFR 112.) through the transfer pipe to the loading arm or manifold.

**SECTION B: DOMESTIC INSPECTION PROGRAMS**

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Acceptance of  
Alternative Cargo  
Piping Test  
Pressures for  
Vessels

- c. Acceptance of Alternative Cargo Piping Test Pressures for Vessels. Achieving test pressures of 150% MAWP for annual cargo piping tests on tank vessels is often impractical while vessels are in service, where transfers are conducted by vacuum or suction method, or outside the shipyard where special equipment is not available. Therefore, as provided by 33 CFR 156.107, alternative test pressures of not less than 100% MAWP may be used for in-service annual cargo piping tests, provided that a 150% MAWP test of the cargo piping is conducted at least twice in any five year period. It is envisioned that the 150% MAWP tests will be conducted during drydock periods at the discretion of the vessel owners or operators. Those vessels with longer drydock intervals must make arrangements to conduct the 150% MAWP tests at least twice in any five year period. All alternatives must provide an equivalent level of safety and protection from pollution. Accurate records of the required tests must be maintained aboard the vessel. These records shall be made available to the OCMI or COTP upon request. An alternative to the 150% MAWP test of hoses should not normally be granted. Sections of piping that cannot be tested without pressurizing cargo tanks, shall not be pressure tested due to the possibility of causing structural damage aboard the vessel. These sections of piping shall be visually examined during periods of availability.
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## F. MARINE SANITATION DEVICE (MSD) REGULATIONS

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1. **Authority** The EPA issued regulations on 29 January 1976 to revise federal standards for MSDs. These regulations, 40 CFR 140, apply to all vessels aboard which toilet facilities have been installed.

**NOTE:** They do not require installation of MSDs aboard vessels that have no toilets at all.

Under the authority of Section 312 of the FWPCA (33 U.S.C. 1322), the Coast Guard issued regulations to implement the EPA's standards on 12 April 1976. These regulations, 33 CFR 159, establish operating procedures and design and construction requirements for all MSDs, and apply to all vessel owners and manufacturers and manufacturers of MSDs.

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2. **Definition** The term "marine sanitation device" includes any equipment for installation aboard a vessel that is designed to receive, retain, treat, or discharge sewage; it does not include "portable devices" (i.e., those that can be carried on and off the vessel). 33 CFR 159 became effective on 30 January 1977 for "new" vessels, and on 30 January 1980 for "existing" vessels (see 33 CFR 159.3 for definitions).
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3. **State Requirements** Vessels complying with 33 CFR 159 are not subject to state or local MSD requirements. However, a state may prohibit discharge of all sewage from vessels within any or all of its waters by obtaining an EPA determination that adequate shoreside facilities for the safe removal and treatment of sewage are reasonably available for such waters in which the prohibition would apply. In such waters, vessels must secure all flow-through MSDs to prevent any discharge into the water.
- 

### 4. Certification of MSDs

- General Procedures
- a. **General Procedures.** All MSDs must be certified by the Coast Guard. If the device was built before 30 January 1976, it is considered an "existing" device. MSDs in this category (except no-discharge devices built before 30 January 1975) were certified by an official letter from the Commandant. No-discharge devices built after 30 January 1975 were certified by 33 CFR 159.12(b) without need for a letter; however, some manufacturers requested and received a letter in the certification process. Currently, if the device was manufactured on or after 30 January 1976 and is Coast Guard certified, it will have a label to this effect (except for certain no-discharge devices).

Labeling

- b. Labeling. No-discharge devices used solely for the storage of sewage and flushwater at ambient pressure and temperature may be certified by definition (see 33 CFR 159.12(a)). Devices certified in this manner cannot be automatically labeled by the manufacturer; however, upon Coast Guard certification of the devices, labels identifying them as such may be attached. Such labels give the certification number and indicate whether the devices have been type-approved for inspected or uninspected vessels (See MSM II-C2 concerning inspection of MSDs).
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