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Docket Management Facility (M-30)
U.S. Department of Transportation
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Re: Inspection of Towing Vessels
(Docket No. USCG-2006-24412)

Dear Sir or Madam:

The American Waterways Operators is the national trade association for the tugboat, towboat and barge industry. AWO's 350 member companies include the owners and operators of barges and towing vessels operating on the U.S. inland and intracoastal waterways; the Atlantic, Pacific, and Gulf coasts; and, the Great Lakes. Our industry's 5,000 towing vessels and 27,000 barges comprise the largest segment of the U.S.-flag domestic fleet, both in number of vessels and on-board crew positions. Each year, the barge and towing industry safely and efficiently moves more than 800 million tons of cargo critical to the U.S. economy, including coal, grain, petroleum products, chemicals, steel, aggregates and containers. Tugboats also provide essential services including shipdocking, tanker escort and bunkering in our nation's ports and harbors. On behalf of AWO's members, thank you for the opportunity to comment on the notice of proposed rulemaking on the inspection of towing vessels.

The tugboat, towboat and barge industry is not only an integral part of the U.S. intermodal transportation system, but also the safest and most fuel-efficient, with the smallest carbon footprint, of any surface transportation mode. Ensuring that the federal regulatory regime governing the industry provides for a high level of safety and environmental protection and preserves the economic efficiency of barge transportation is thus a national imperative. Put differently, regulations that do not adequately ensure the safety of all towing vessels, that impose unnecessary costs on companies operating towing vessels, or that result in the diversion of cargo to other modes of transportation are bad not only for the industry, but for the U.S. economy and marine environment.

AWO members are committed to building on the natural advantages of barge transportation and leading the development of higher standards of marine safety and environmental protection. In 1994, AWO became the first transportation trade association to adopt a code of safe practice and environmental stewardship for member companies. Today, compliance with the Responsible Carrier Program is a condition of AWO membership, and members undergo independent third-party audits every three years to demonstrate their continued compliance. AWO was also the first marine transportation trade association to enter into a formal safety partnership with the U.S. Coast Guard. Since its inception in 1995, this award-winning public-private partnership has launched some 40 Quality Action Teams to proactively address safety and environmental challenges in the industry.

In 2004, AWO strongly supported the Department of Homeland Security in requesting new statutory authority to establish an inspection regime for towing vessels based on a safety management system. AWO members participated actively in the Towing Safety Advisory Committee working group that provided advice to the Coast Guard during the development of the notice of proposed rulemaking, and have worked closely with the Coast Guard during the Towing Vessel Bridging Program to facilitate a smooth transition to towing vessel inspection. In April of this year, AWO's Board of Directors overwhelmingly approved the recommendations of the Task Force on the Future of AWO Safety Leadership, a long-range plan to ensure that AWO members, by creating strong safety cultures, continue to lead the industry in safety and environmental stewardship by exceeding regulatory minimums, striving for continuous improvement, and measuring performance. AWO's commitment to safety leadership and the national imperative of ensuring the continued economic vitality of the industry inform our perspective on the towing vessel inspection NPRM.

Against this backdrop, we find much to commend in the NPRM and the collaborative process through which it was developed. Substantively, the NPRM proposes to fully satisfy the statutory requirements for vessel inspection while incorporating innovative features that improve on the traditional inspection model, including safety management systems, Coast Guard-approved third party organizations, and functional requirements. Procedurally, the Coast Guard's extraordinary commitment to consultation with stakeholders via the Congressionally authorized Towing Safety Advisory Committee stands as a model of how government can produce a better product and use limited resources more effectively through a robust effort to gather stakeholder input on the front end of a rulemaking. The towing vessel inspection NPRM is a much better document because of the open, public, and collaborative process by which it was produced.

AWO's comments on the NPRM reflect our strong support for the recommendations made by TSAC in its work with the Coast Guard from 2004 to the present day, including the committee's October 20, 2011 recommendations on the NPRM. TSAC's recommendations to the Coast Guard throughout the regulatory development process have been based on two guiding principles: the value of safety management systems and the need for a risk-based approach that targets new regulatory requirements based on casualty history and risk. AWO's comments on the NPRM reflect our full support for these guiding principles, and,

like TSAC, we find that our most significant concerns with the proposed rule involve areas where we believe the Coast Guard has lost sight of these fundamental principles.

The comments that follow begin with an overview of AWO's most significant comments and concerns on the NPRM, followed by a detailed critique of each of the nine parts of the proposed Subchapter M and associated regulatory changes needed. There are two appendices: Appendix A, authored by Dr. Fred Turek and Dr. Kathy Reid of the Center for Sleep and Circadian Biology at Northwestern University, responds to the discussion of work hours and Crew Endurance Management in the NPRM preamble; Appendix B is a comprehensive "redline" of the draft regulatory text that details the specific additions, deletions, and wording changes to Subchapter M that AWO believes are necessary.

Overarching Comments

Towing Safety Management Systems and the "Coast Guard Option"

AWO believes strongly that a Towing Safety Management System should be required for all companies operating towing vessels covered by Subchapter M. The National Transportation Safety Board has made establishment of a safety management system requirement for all modes of transportation one of its top ten Most Wanted Transportation Safety Improvements because safety management systems work. They are uniquely well suited to address the leading cause of towing vessel accidents: human error, whether occurring on board a vessel or on shore. Safety management systems promote continuous regulatory compliance, provide early warning of problems or deficiencies that could lead to accidents, and prevent accidents caused by equipment failure by ensuring continuous attention to routine vessel maintenance. As stated by the NTSB,

> For over three decades, the NTSB has expressed concern about the lack of safety management and preventive maintenance. NTSB accident investigations have revealed that, in numerous cases, safety management system or system safety programs could have prevented loss of life and injuries. Although an impaired operator or mechanic, a broken vehicle part, or severe weather may be the initiating factor in a transportation accident, there frequently is evidence of a continuous safety problem long before the accident occurred. These programs continually monitor operations and collect appropriate data to identify emerging and developing safety problems before they result in death, injury, or significant property damage. Having identified these risks, these programs then devise interventions and evaluate how well they perform at successfully mitigating risk.[1]

Similarly, support for a safety management system requirement for all towing vessels subject to Subchapter M has been at the core of TSAC's recommendations to the Coast Guard since the committee's first substantive report on towing vessel inspection in

[1] National Transportation Safety Board Web site, www.ntsb.gov/safety/mwl-3.html.

September 2005. As stated by TSAC in its October 2011 recommendations on the NPRM, "Adherence to a safety management system should be the foundation of the towing vessel inspection regime, not an option."[2] AWO agrees. More than 15 years of AWO member experience with safety management systems (both the AWO Responsible Carrier Program and the International Safety Management Code) have demonstrated that adherence to an audited safety management system produces measurable decreases in towing vessel accidents and personal injury claims. Based on AWO member experience with safety management systems over the last decade and a half, we believe that requiring all towing companies operating towing vessels covered by Subchapter M to implement a Towing Safety Management System audited by a Coast Guard-approved third party organization will do more to improve towing vessel safety than any other requirement in the proposed Subchapter M. This essential requirement should not be optional for any towing company.

Having said that, AWO understands and very much appreciates the Coast Guard's stated concern about the cost of the proposed regulations, especially for small companies. (Indeed, we are acutely sensitive to those costs since a great many AWO members are themselves small companies, and most AWO members rely on small companies to perform essential services, such as towing and barge fleeting.) If the final regulations do not allow small companies to comply in a cost-effective way, they will not meet the critical tests posited at the beginning of these comments: improved safety and the continued economic efficiency of barge transportation.

AWO believes that the Coast Guard's proposal to make compliance with a Towing Safety Management System an option rather than a fundamental requirement of the proposed Subchapter M reflects at least three misunderstandings about TSMS and the costs associated with the proposed regulations. First, small companies can implement safety management systems effectively and cost-effectively, as the experience of AWO members has shown. As noted by the NTSB,

> SMS and system safety programs can be effective in all organizations regardless of size. It is important to have information on how to scale these programs – from the smallest operators with just a few personnel and vehicles, to large organizations with thousands of employees and large numbers of vehicles and facilities. Regardless of the size of the organization, it is possible and necessary to foster a safety conscious environment that will identify hazards early on and mitigate the associated risks.[3]

[2] TSAC Towing Vessel Inspection Working Group Review of Notice of Proposed Rulemaking, as approved by TSAC October 20, 2011.

[3] NTSB Web site, www.ntsb.gov/safety/mwl-3.html.

As noted by the TSAC Economic Analysis Working Group in its December 16, 2008 report to the Coast Guard,

> It should be noted . . . that safety programs in the towing industry have traditionally been developed with awareness of the characteristics of companies that employ a small number of individuals. For example, the AWO Responsible Carrier Program was developed with the understanding that it would be used by companies of all sizes. The program is currently used by companies with as few as one or two towing vessels. Similarly, TSAC's recommendations on the content of the towing vessel inspection regime were intended to reflect the needs of small as well as large towing companies.[4]

In this regard, we are perplexed by the Coast Guard's attribution of a quote in the preamble to the NPRM that "[A SMS] will likely have a larger and more devastating impact on smaller companies who do not have the economic means, manpower, or even time to implement a system" to the TSAC Economic Analysis Working Group Report. No such quote appears on page 21, or at any other place, in the December 2008 working group final report. Moreover, to the contrary, the lived experience of AWO members has shown that, far from being "devastating," the investment made in developing and complying with a safety management system has had a significant positive impact on the safety performance of many small companies, the efficiency of their operations, and customer willingness to contract for their services.[5] For many AWO members, including small companies, instituting a safety management system has produced quantifiable benefits in the form of fewer vessel mishaps and personal injuries, which, in turn, lead to cost savings due to reduced insurance premiums and avoidance of expenses such as vessel repairs and time out of service.

Second, the cost comparison between the TSMS and Coast Guard options is not as clear-cut a matter as the Coast Guard's Regulatory Assessment suggests. The Regulatory Assessment implies that the only cost associated with the Coast Guard option that will not also be borne by companies using a TSMS is the cost of an annual Coast Guard inspection. This is not the case. Under the NPRM, a company using the Coast Guard option would incur substantial additional costs to meet detailed and costly "prescriptive requirements" for such things as electrical systems and equipment, without the ability to demonstrate compliance with more flexible "functional requirements" as specified in a TSMS. Similarly, a company using the Coast Guard option could incur substantial demurrage costs while waiting for a Coast Guard inspector to approve a vessel repair or for an OCMI to issue a permit to proceed, while a vessel operating under a TSMS could get underway more quickly following the procedures laid out in the company TSMS.

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[4] TSAC Economic Analysis Working Group Report, December 18, 2008.

[5] AWO member experience has shown that the major costs associated with implementing a safety management system are those related to administrative oversight, including tracking of vessel maintenance and inspections and personnel training.

Third, the decision to make TSMS optional appears to be based on the mistaken assumption that the TSMS requirement is the major driver of costs under Subchapter M. In fact, as discussed in detail below, much more significant cost burdens will derive from proposed equipment requirements that will require substantial and costly modification to existing towing vessels with a history of safe operation. Compliance with the proposed requirements for redundant, independent means of propulsion, steering, and related controls for towing vessels moving tank barges and proposed requirements for electrical systems and equipment on existing towing vessels will far exceed even the Coast Guard's high-end estimates of the costs of a TSMS, without the same corresponding safety benefit. For example, the Coast Guard estimates that the costs of implementing a TSMS range from $61,000 to $150,000 per company. By contrast, AWO members estimate the cost of retrofitting an existing towing vessel to comply with the noted equipment requirements to average $180,000 to $300,000 per vessel, even before factoring in the significant costs associated with time out of service while the vessel is undergoing modification. One AWO member estimates that it will cost as much as $1 million per vessel to bring its existing towing vessels into compliance.

In our part-by-part review of the NPRM below, we offer numerous suggestions to reduce the costs of the regulations without detracting from their safety benefits, including clarifying and streamlining the proposed TSMS requirements, eliminating costly and unnecessary requirements that are not adequately based on risk, and clarifying that the regulations allow for multiple compliance options within the framework of a TSMS (e.g., use of either a periodic survey or program of continuous assessment to meet the requirements for topside vessel surveys and drydocking and internal structural examinations).

Prescriptive Equipment Requirements Not Justified by Casualty History and Risk

AWO believes that the cost of the proposed regulations can be dramatically reduced, with no material diminution in safety benefit, by eliminating prescriptive equipment requirements that are not justified by towing vessel casualty history and risk and that would impose severe financial burdens on owners of existing towing vessels. Like TSAC, we strongly oppose the proposed requirements in Subpart D of Part 143 that would require towing vessels moving tank barges to be equipped with independent, redundant means of propulsion, steering, and related control, and the proposed electrical system requirements for existing towing vessels contained in sections 143.340, 143.345, 143.350, 143.355, and 143.360. We urge that these requirements be deleted from the regulations.

Our principal argument is that the proposed requirements are unnecessary and will not lead to an increase in towing vessel safety that is in any way proportionate to their costs. The proposed requirements of Part 143 Subpart D far exceed current industry best practices for towing vessels moving tank barges and go above and beyond current ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways and ABS Rules for Building and Classing Steel Vessels Under 90 Meters in Length. Towing vessels moving tank barges carrying bulk petroleum products employ a variety of measures to mitigate the risk of a loss of propulsion, steering, or control that often include redundant systems. Dual propulsion engines, dual steering pumps, and duplicate control and

communication equipment are commonly employed by towing vessels moving tank barges and required by major petroleum shippers. Such systems reflect a diversity of design and application and have proven effective over many years. However, most of the redundant systems currently in use would not meet the requirements of Subpart D.

AWO believes that the proposed requirements in Subpart D will have little impact on the prevention of oil spills in the tank barge sector, both because current industry best practices have reduced spills so significantly, and because the proposed requirements would not have prevented those few significant spills that have occurred in the last decade. As noted by TSAC, "[C]urrent industry best practices have produced a dramatic reduction in oil spills from tank barges over the last decade and a half, with a record low 919 gallons spilled (out of nearly 65 billion gallons transported) in 2010, the last year for which complete Coast Guard statistics are available."[6] TSAC also observes, rightly, that "[T]he most recent tank barge spill of significant size, the 2008 *Mel Oliver/Tintomara* collision, was caused by human error of the sort that might well have been prevented by robust adherence to a safety management system, not by equipment requirements such as those proposed in Subpart D."[7] Indeed, the experience of AWO members demonstrates that when an equipment-related mishap such as a steering failure does occur, it is typically the result of deficient maintenance practices that failed to provide early warning of a worn-out system. Safety management systems are optimally suited to prevent such deficiencies.

AWO also reiterates TSAC's observation that, contrary to the implication in the preamble to the NPRM, the Coast Guard is under no statutory mandate whatsoever to impose requirements on towing vessels moving tank barges similar to those in the proposed Subpart D. The non-requirement quoted in the preamble (which called on the Secretary of Homeland Security to "consider" the possible application to towing vessels moving tank barges of standards applicable to self-propelled tank vessels) was contained not in a law passed by Congress, but in a bill (S. 1892, 110th Congress) that never became law. Had Congress intended to direct the Coast Guard to impose (or even simply "consider") the application of additional requirements to towing vessels moving tank barges, it could certainly have done so in the Coast Guard Authorization Act of 2010 (P.L. 111-281), which established statutory deadlines for publication of the notice of proposed rulemaking and final rule on towing vessel inspection. It did not.

The Coast Guard's assessment of the impact of the proposed Part 143 Subpart D is also dramatically understated. If we understand the proposed requirements correctly, they will not impact a mere 26 towing vessels, as stated in the Regulatory Assessment, but will require extensive and expensive modifications to nearly every towing vessel moving tank barges in the United States today, in inland or coastal service. The cost of compliance with these requirements will far exceed the projected $250 to $20,000 per vessel, and instead run

[6] TSAC Towing Vessel Inspection Working Group Review of Notice of Proposed Rulemaking, as approved by TSAC October 20, 2011.

[7] Ibid.

upwards of $200,000 for many existing towing vessels, not including the lost revenue associated with time out of service.

For similar reasons, we urge the deletion of the proposed electrical system requirements for existing towing vessels at §143.340, 143.345, 143.350, 143.355, and 143.360. These prescriptive requirements for existing towing vessels represent a significant departure from the practical, common-sense approach proposed by TSAC, and we are not persuaded by the Coast Guard's explanation in the preamble that there is a solid, risk-based justification for these requirements. Neither TSAC nor ABS Consulting, which conducted in-depth analyses of towing vessel casualties, found electrical deficiencies to be a significant cause of medium- or high-consequence towing vessel casualties. The Coast Guard's attempt to reinterpret the ABS report to find a role for electrical failures in casualties attributed to other causes reads more like an *ex post facto* attempt to justify the proposed requirements than a genuine analysis leading to the conclusion that such requirements are necessary.

AWO believes that the approach recommended by TSAC in its September 2006 report, and reiterated in its October 2011 recommendations on the NPRM, is a practical and responsible approach to ensuring the safety of electrical installations on new and existing towing vessels. TSAC recommended that new towing vessels be outfitted with electrical equipment and wiring that meets the standards of the applicable ABS Rules or other recognized, published standards. For existing towing vessels, TSAC recommended a functional approach to ensuring that electrical equipment and wiring is installed and maintained properly. Specifically, TSAC recommended that:

> For existing towing vessels, all electrical equipment and wiring must be maintained in good operating condition such that no fire hazards or other hazards to personnel are present. All wiring terminations must be made in junction boxes or other electrical fixtures suitable for the purpose intended. All machinery switches, energizers, and circuit breakers must be labeled and maintained in good operating condition. When electrical equipment or wiring on an existing towing vessel is retrofitted or replaced, the new equipment or wiring must meet UL Marine standards or an appropriate equivalent standard.[8]

TSAC explained that:

> This two-tiered approach is intended to ensure that when electrical equipment or wiring on an existing towing vessel is replaced, the new equipment meets minimum standards of safety and appropriateness for the marine environment, without requiring that the entire electrical system be replaced. The working group did not perceive a safety justification – and foresee significant costs – to requiring that, say, the replacement of a single junction box trigger a requirement to upgrade

[8]Report of the Towing Safety Advisory Committee Working Group on Towing Vessel Inspection, September 7, 2006; cited in TSAC Towing Vessel Inspection Working Group Review of Notice of Proposed Rulemaking, October 20, 2011.

> the vessel's entire electrical system to meet standards that did not apply at the time the vessel was built.[9]

AWO agrees. We believe the approach recommended by TSAC gives the Coast Guard sufficient authority to require the replacement of electrical installations on existing towing vessels that pose a manifest safety problem. Indeed, we believe the example cited in the preamble – that electrical deficiencies involving poor installation and maintenance accounted for eight percent of the deficiencies discovered during Maritime Transportation Security Act compliance exams on towing vessels between January 2006 and August 2008 – demonstrates that the Coast Guard has the authority today, under existing regulation, to require changes to unsafe electrical installations on existing towing vessels. It is not necessary to require wholesale changes to electrical system requirements for towing vessels that have operated safely for many years in order to effectively address existing unsafe situations.

This is particularly important given what we believe are the significantly understated costs of retrofitting existing towing vessels to comply with the proposed requirements. Based on cost data provided by AWO members, we estimate the cost of the proposed requirements to run as much as $100,000 per towing vessel, not including time out of service. AWO recommends that the Coast Guard delete the proposed §143.340, 143.345, 143.350, 143.355, and 143.360. We believe the proposed §143.305 (Electrical systems, general) establishes appropriate functional requirements for electrical systems and equipment on existing towing vessels and is consistent with the approach recommended by TSAC.

Coast Guard-Approved Third Party Organizations

AWO strongly supports the Coast Guard's proposal to use approved third party organizations as a critical force multiplier in a multi-layered approach to oversight and enforcement of the proposed regulations. We believe that the combination of internal audits conducted by trained company personnel, external audits conducted by Coast Guard-approved third party organizations, and robust Coast Guard oversight that encompasses all companies and all towing vessels but is targeted to focus scarce Coast Guard resources where they are most needed, is an effective model for ensuring continuous regulatory compliance across the industry. We especially appreciate the Coast Guard's proposal to allow entities other than recognized classification societies to apply for and obtain Coast Guard approval. While we believe that class societies will play an important role in the effective implementation of Subchapter M, we believe that allowing qualified smaller entities to obtain Coast Guard approval to conduct audits or surveys is essential to ensuring a sufficiently sized pool of approved third parties to meet industry demand.

In this regard, we reiterate the recommendation of TSAC that the Coast Guard not wait until final regulations are imminent or in place to develop a process for the approval of third parties seeking to perform Subchapter M compliance verification services. AWO urges the

[9] Ibid.

Coast Guard to publish a Navigation and Vessel Inspection Circular laying out the qualification process for third parties, and establishing a pre-qualification mechanism, as soon as possible so that the agency can ensure that the supply of approved third party organizations will be sufficient to meet industry demand. (The Coast Guard will, of course, retain the authority to require any additional qualification steps that may be needed once the final regulations are published.) We believe such a process will not only help to ensure that the necessary population of approved third party organizations is in place by the time the regulations take effect, but will actually stimulate the development of this important market.

In addition to ensuring a sufficiently sized pool of approved third party organizations to conduct the audits and surveys required under Subchapter M, it will be essential that the approval and oversight mechanisms put in place by the Coast Guard promote consistency (and, more specifically, the consistent application of high standards of quality) by approved third party organizations. This might be done via implementation guidance, training, and/or accreditation of auditors and surveyors. AWO urges the Coast Guard to initiate a dialogue with stakeholders (including third party organizations and owners of towing vessels subject to Subchapter M) to explore the range of options for ensuring a high level of quality and consistency among auditors.

Hours of Service and Crew Endurance Management Programs

AWO strongly opposes a potential requirement, as discussed in the preamble to the NPRM, that towing vessel watchstanding schedules be altered to require a daily minimum of seven to eight hours of uninterrupted sleep. We recognize the importance of preventing fatigue and promoting crew alertness in any 24/7 operating environment, and AWO members have made sizable investments in training and wellness programs, vessel modifications to improve habitability and provide a better sleeping environment, and other measures to prevent or mitigate fatigue. AWO has sponsored and continues to support scientific research aimed at developing baseline data on sleep and wake patterns in towing vessel crewmembers and developing effective strategies to ensure that crewmembers consistently obtain the quantity and the quality of sleep they need to do their jobs safely. Moreover, AWO was an early partner with the Coast Guard in encouraging implementation of the Crew Endurance Management System, which we understood to be a holistic system for managing crew endurance risks that includes the use of tools such as training, light management, environmental changes, operating policies and schedule changes to address endurance risks identified by vessel and company personnel. We were, therefore, surprised and perplexed by the assertion in the preamble that "The central objective of CEMS was and is to ensure that crewmembers have sufficient time off to obtain a daily minimum of 7-8 hours of uninterrupted, high-quality sleep."

This emphasis on uninterrupted sleep differs from the description of CEMS in Navigation and Vessel Inspection Circular 02-08, Criteria for Evaluating the Effectiveness of Crew Endurance Management System Implementation. The NVIC describes CEMS as "a system of proven practices for managing endurance risk factors that affect operational safety and crewmember efficiency in the maritime industry" and goes on to say that "The system is, at

its heart, a continuous-improvement process which allows an organization to focus efforts towards those factors that are most feasibly mitigated and present the greatest possible reduction of risk."[10] The NVIC notes that the "proven practices and procedures" utilized in CEMS "apply to the full scope of endurance management, not simply to fatigue or sleep management. In other words, CEMS encompasses the full range of environmental, physiological, operational, and psychological risk factors affecting performance and safety in normal maritime operations."[11] We are at a loss to reconcile this description of CEMS with the description in the preamble to the NPRM.

The preamble's emphasis on 7-8 hours of uninterrupted sleep is troubling not only because of its inconsistency with prior Coast Guard publications describing the purpose of CEMS, but more importantly, because it reflects an incomplete and selective treatment of the science behind sleep and watchstanding and would subject towing vessels to a standard required and adhered to nowhere else in the maritime industry.[12] Appendix A, authored by Dr. Fred Turek and Dr. Kathy Reid of the Center for Sleep and Circadian Biology at Northwestern University, presents a thorough critique of the preamble discussion and argues persuasively that the Coast Guard has failed to make the case that the proposed changes are justified by the scientific literature and, indeed, could potentially result in crewmembers getting less, not more, sleep per 24-hour period. The proposed requirements discussed in the preamble lack a sound scientific basis and have no place in a final rule on towing vessel inspection.

Part-by-Part Review

In the sections that follow, we present a part-by-part discussion of our detailed comments on the NPRM. In Appendix B, we supplement this discussion with a comprehensive "redline" markup of the NPRM proposing specific wording changes to implement the suggestions made below. (We do not elaborate below on minor editorial changes suggested in the redline solely for the purpose of consistency of usage, proper syntax, clarity, etc., as these are self-explanatory.)

[10] NVIC 02-08, Criteria for Evaluating the Effectiveness of Crew Endurance Management System (CEMS) Implementation.

[11] Ibid.

[12] Even mariners standing a 4-on, 8-off 3-watch schedule do not meet this standard. It is physically impossible to get 8 hours of uninterrupted sleep during an 8-hour off duty period, and virtually impossible to get 7 hours of uninterrupted sleep, given the need to attend to basic physical and social needs. This is reinforced by the scientific literature cited in Appendix A which shows that mariners with two eight-hour off duty periods per day do not obtain anywhere close to 7-8 hours of uninterrupted sleep. The only watchstanding schedule of which we are aware that would allow for the possibility of 7-8 hours of uninterrupted sleep is the 12-on, 12-off schedule employed by some towing vessels in the harbor services sector, which is characterized by intermittent rather than continuous operation. This is not a viable model for sectors of the maritime industry in which an operator must perform continuously for the duration of the watch period.

Part 136 (Certification)

- §136.105 (Applicability): AWO supports the Coast Guard's decision to defer consideration to a subsequent rulemaking of requirements for towing vessels under 26 feet in length, towing vessels used solely for assistance towing, and work boats operating exclusively within a work site and performing intermittent towing within a work site. As noted by TSAC in its October 2011 report, this is consistent with the prior recommendations of TSAC and consistent with the risk-based approach to regulation endorsed by both AWO and TSAC. We also recommend that the applicability language be amended to clarify that towing vessels used within a work site, including a shipyard, for the purpose of maneuvering a barge, including a tank barge, on and off of a drydock or cleaning dock, are not covered by Subchapter M. Many shipyards employ small towing vessels to move tank barges short distances within the confines of the facility for cleaning, staging, or repair. Such towing vessels are of a size that would prohibit physical compliance with the requirements of this subchapter.

- §136.110 (Definitions): AWO recommends the following substantive additions and changes to the definitions in this section:

    - Add a definition of buoyant apparatus and inflatable buoyant apparatus, as these terms are not currently defined in the proposed part 141. The new definitions proposed in the redline are taken from 46 CFR 160.010.

    - Amend the definition of excepted towing vessel to encompass the full range of activities commonly performed by towing vessels in limited geographic or harbor service, including moving vessels on and off drydocks and to or from cleaning docks and shifting vessels within a limited geographic area. AWO strongly supports the Coast Guard's inclusion of the "excepted towing vessels" concept to specify vessels that should not, by virtue of their limited geographic scope of operation, be subject to all of the same equipment requirements as other towing vessels covered by Subchapter M. AWO also notes that from time to time an excepted towing vessel may need to transit to a shipyard or from one port, harbor, or limited geographic area to another for repositioning. Such occasional transits should not disqualify the towing vessel from being considered an excepted towing vessel. When appropriate given the characteristics of such transit, the TSMS applicable to the towing vessel should specify any additional equipment that may be needed to ensure safe operation during the transit.

    - Amend the definition of "harbor assist" to include the use of a towing vessel during maneuvers to dock, undock, shift, escort, push, pull, tow, moor, unmoor, or otherwise assist other vessels as directed within a port, harbor, or limited geographic area. For purposes of this definition, a harbor should be

deemed to include the navigable inland waters of a port inside the Boundary Line.

- Revise the definition of "major conversion" and provide amplifying discussion in the preamble to clarify that this definition is meant to capture changes that are so substantial as to render a towing vessel "substantially a new towing vessel," and not routine events such as engine repowering, hull replating, etc., which may have the effect of extending the life of the towing vessel. We believe this clarification is essential so as to avoid overly restrictive interpretations that have the negative effect of discouraging proper vessel maintenance and/or environmentally beneficial upgrades to a towing vessel.

- In lieu of the term "Towing Safety Management System Certificate," which is used in Part 138 but not defined in §136.110, we recommend adding two separate definitions of the certificates to be issued to the owner or managing operator and to each of the towing vessels found to be in compliance with the TSMS, similar to the approach used under the ISM Code. In the redline, we recommend the new terms "Towing Company Safety Management System Certificate (TCSMSC)" and "Towing Vessel Safety Management System Certificate (TVSMSC)." We intend that a Document of Compliance issued under the ISM Code would satisfy the requirement for a TCSMSC and a Safety Management Certificate issued under the ISM Code would satisfy the requirement for a TVSMSC.

- Delete the proposed definition of "travel time," since this term does not appear anywhere else in the proposed regulations.

- Amend the definition of Western Rivers to be consistent with 33 CFR 164.70 and include those waters specified in 33 CFR 89.27 and such other, similar waters as are designated by the Captain of the Port. This is necessary in order to preserve the current applicability of the navigation safety regulations imported into Subchapter M from 33 CFR Part 164 and avoid the unnecessary new requirement for towing vessels operating on the Gulf Intracoastal Waterway to have fathometers.

- §136.130, 136.140, 136.145, 136.150, 136.165 and 136.170: Delete. The proposed requirements pertain to the "Coast Guard option," which AWO recommends be deleted from the regulations as discussed under "Overarching Comments" above.

- §136.210 (Obtaining or renewing a Certificate of Inspection): §136.210(b)(3)(i) requires that an application for initial certification include objective evidence that the towing vessel's structure and stability comply with the applicable requirements of Subchapter M. For an existing towing vessel without a stability letter, the applicable requirements of Subchapter M are limited to those in §140.605(b), which provides

that the towing vessel be maintained and operated so that the watertight integrity and stability of the towing vessel is not compromised. We urge the Coast Guard to clarify in the preamble to the final rule that an audit report from an approved third party organization noting that the towing vessel is being maintained and operated in a manner that does not compromise its watertight integrity or stability is sufficient to satisfy this requirement.

- §136.220 (Posting): In this electronic age, the arcane requirement for the original Certificate of Inspection to be kept on board the vessel and framed under glass should be replaced with a reasonable and practical requirement to maintain a correct copy of the COI in a safe location from which it is readily available to the master, crew, approved third party organization or Coast Guard.

Part 137 (Vessel Compliance)

- §137.210 (Audited program): We recommend changing the term "audited program" to "program of continuous assessment," the terminology used in the 2008 draft regulatory text reviewed by TSAC. Since, as noted above, AWO strongly recommends that all towing vessels have a TSMS audited by an approved third party organization, we believe the term "audited program" as used in this part is confusing. (All towing vessels, including those using the periodic survey approach to the topside vessel survey and drydocking and internal structural examination requirements, would have an "audited program.") The term "program of continuous assessment" better captures the key distinction between the two proposed compliance options: that is, the ability to conduct the required examinations either in segments over time, versus as a discrete event. We also emphasize that AWO strongly supports maintaining two compliance options, the periodic survey and the program of continuous assessment. In addition, we recommend amending §137.210(b) to provide that surveys may be conducted within 3 months before or after the anniversary date of the previous survey.

- §137.220 (Scope): As detailed in the attached redline, we recommend several changes and clarifications to this section. First, we recommending adding language to §137.220(b)(1) to clarify that entry into confined spaces such as fuel tanks is not required, nor is it required to have tanks gas-freed for this examination unless there is objective evidence of a hazardous condition warranting examination. Second, as previously recommended by TSAC, we recommend adding to §137.220(b)(7) the words "where installed" so as to clarify that watertight doors must be inspected if the vessel is so outfitted, and avoid implying a requirement to have watertight doors where none previously existed. Third, we recommend amending §137.220(g)(9) to clarify that verification of abandon ship and man overboard drills can be accomplished by a review of records of drills, and does not require an auditor or surveyor to personally witness the conduct of the drill.

- §137.305 (Intervals for drydock and internal structural examination): As previously recommended by TSAC, we recommend adding language that allows for the extension

of the required interval for drydocking and interval structural examinations by up to one year for towing vessels operating exclusively on the Great Lakes, to mirror the requirements of the current 46 CFR 42.09(d)(2) with respect to load lines. In addition, we recommend substituting the term "fitness for intended service" in lieu of "seaworthiness" in this section and wherever else the term "seaworthiness" appears in this subchapter.

- §137.315 (Audited program for the TSMS option): In addition to renaming this section "Compliance by program of continuous assessment," as discussed with respect to §137.210 above, we recommend adding language to §137.315(c) to clarify that the items described in §137.330 need not be examined as one event, but may be examined on a schedule over time, provided that the interval between examinations of each item may not exceed the applicable interval described in §137.305.

- §137.325 (General conduct of survey for the TSMS option): In addition to renaming this section "General conduct of drydock and internal structural examination," we recommend that the Coast Guard add language to clarify that entry into confined spaces such as fuel tanks is not required, nor is it required to have tanks gas-freed for this examination unless there is objective evidence of a hazardous condition warranting examination.

- §137.330 (Scope of drydocking): We are proposing only minor wording changes for consistency of usage in this section. However, we believe it will be very important for the Coast Guard to ensure that agency guidance with respect to what constitutes an acceptable repair or acceptable condition on a towing vessel is appropriate for the physical characteristics and operating environment of towing vessels, and does not simply mirror existing guidance applicable to other classes of inspected vessels, such as tank barges or small passenger vessels. In this regard, it may be necessary to amend current agency guidance such as NVIC 7-68, Notes on Inspection and Repair of Steel Hulls, to specifically address towing vessels, or to develop stand-alone guidance applicable to towing vessels (especially inland towing vessels). We note that AWO is currently working with the Coast Guard to explore this issue further through a Bridging and Implementation Team subgroup on Inland Towing Vessel Inspection and Repair Standards. We also note both that TSAC has previously recommended that "Hull fractures in any plating except an oil tank may be covered with an appropriately sized doubler plate, installed using good marine practice, if the hull thickness and condition is suitable,"[13] and that a survey of inland shipyards conducted by the BAIT subgroup found that the cost to crop and renew fractured hull plate is as much as three times greater than the cost of a doubler plate. We urge the Coast Guard to revisit the issue of appropriate standards for inland towing vessel repairs with TSAC after the BAIT subgroup has completed its work (expected in the first half of 2012).

[13] Report of the Towing Safety Advisory Committee Working Group on Towing Vessel Inspection, September 7, 2006.

- §137.335 (Underwater survey in lieu of drydocking): AWO supports the Coast Guard's proposal to allow for the conduct of an underwater survey in lieu of drydocking for towing vessels that meet certain enumerated criteria. Instead of requiring that the owner or managing operator of a towing vessel submit an application to the OCMI prior to conducting a UWILD, however, we recommend that the TSMS applicable to the towing vessel provide for documentation of the items proposed to be included on such application. This approach will provide for transparency and the opportunity for review of the UWILD procedures by an approved third party organization or by the Coast Guard, without subjecting either towing vessel owners or the Coast Guard to the administrative burdens of a pre-approval requirement for UWILDs.

Part 138 (Towing Safety Management Systems (TSMS))

- §138.205, 138.210, 138.215, and 138.220: AWO recommends that the sections specifying the purpose of a Towing Safety Management System and the objectives, functional requirements, and elements of a TSMS be streamlined and revised for clarity, simplicity, and consistency with the ISM Code. We believe the changes proposed in the attached redline (modeled on the language of the ISM Code and the draft regulatory text reviewed by TSAC in 2008) help to clarify the primary goal of a TSMS – to ensure towing vessel safety, prevent injury to persons or loss of life, and avoid damage to the marine environment and to property – and avoid confusing terminology that detracts from this central objective. Consistent with our comments under "Overarching Comments" above, we believe such changes will also help to reduce "fear of TSMS" by small operators who have no prior experience with safety management systems, by avoiding description that makes development and implementation of a TSMS sound more bureaucratic than it is or needs to be.

- §138.225 (Existing safety management systems): AWO strongly recommends that the Coast Guard accept the AWO Responsible Carrier Program as a TSMS under Subchapter M. The RCP, which was modeled on the ISM Code but designed specifically for towing vessels, is the most widely used safety management system in the towing industry today and has been used successfully by hundreds of towing companies and thousands of towing vessels since 1994 to substantially improve the safety of their operations. A copy of the Responsible Carrier Program can be found on AWO's Web site at: http://www.americanwaterways.com/commitment_safety/RCP.pdf. AWO would like to initiate a dialogue with the Coast Guard in early 2012 to discuss planned changes to the RCP and discuss potential steps needed to ensure acceptance of the RCP as a TSMS by the time the final regulations are published. We believe it is in the best interest of the Coast Guard and the towing industry to work together to ensure Coast Guard acceptance of the RCP as a TSMS as an alternative to the ISM Code.

- §138.300 (General): We recommend revising this section to clarify the sequence of events leading to issuance of a COI for a towing vessel under Subchapter M: first, the issuance of a Towing Company Safety Management System Certificate, following successful completion of an audit of the owner or managing operator's TSMS by an approved third party organization; then, issuance of Towing Vessel Safety Management System Certificates to individual towing vessels, following successful completion of towing vessel audits by an approved third party organization; and finally, issuance of a COI by the Coast Guard.

- §138.310 (Internal audits): AWO recommends that the requirements for persons conducting internal audits be revised for consistency with ISM Code 12.4, which provides that internal auditors need not be independent of the areas being audited if this is impracticable due to the size and nature of the company. We also recommend that the proposed requirement that an internal auditor have completed an ISO 9001-2000 course be deleted. This is an unnecessary requirement that exceeds the requirements of the ISM Code and simply adds to the cost of a TSMS, especially for a small company.

- §138.315 (External audits): In addition to numerous changes for clarity and consistency with the sequence of events discussed in our comments on §138.300 above, we recommend the addition of a provision to this section specifying that the OCMI may extend the time period in which an external audit is required if necessary due to the unavailability of an approved third party organization. While we are hopeful that, with proper pre-planning as discussed under "Overarching Comments" above, this situation will not occur, we believe it is prudent to explicitly give the OCMI the flexibility to extend an audit interval if necessary due to unforeseen circumstances.

- §138.410 (Conduct of external audits): We recommend the addition of a new subsection (f) that clarifies what steps will be taken when an auditor discovers a nonconformity. Specifically, we recommend that the auditor be required to notify the owner or managing operator and the Coast Guard immediately of any serious, unsafe condition that poses an imminent hazard to personnel, the towing vessel, or the environment. For less serious nonconformities, we recommend that the auditor require the owner or managing operator to develop and implement a corrective action plan.

- §138.500 (Notification prior to audit): AWO urges the Coast Guard to add language to this section clarifying that a decision to require Coast Guard attendance at an audit conducted by an approved third party organization will not delay the conduct of the audit.

- §138.510 (Required attendance): We recommend that this section be expanded to specify the range of actions that the Coast Guard may take if it has reason to believe that an owner or managing operator has failed to comply with the TSMS or the

requirements of Subchapter M, including requiring a revision of the TSMS or a replacement of the auditor or approved third party organization. Some of the new language recommended in the attached redline is cut and pasted from §139.160, as we believe it fits better in this section.

Part 139 (Third Party Organizations)

- §139.115 (General): AWO recommends that the list of approved third party organizations be made available online for ready access by towing companies and Coast Guard OCMIs.

- §139.120 (Application for approval as a third party organization): AWO urges the Coast Guard to clarify in the regulations the specific program office at Coast Guard headquarters to which applications to become an approved third party organization must be submitted. Simply listing the address of Coast Guard headquarters is too vague and will result in lost applications and lengthy delays.

- §139.130 (Qualifications of auditors and surveyors): The qualification requirements for surveyors are inadequate. AWO recommends several modifications to this section to ensure that surveyors have the necessary background and experience to fulfill the responsibilities of an approved third party organization under Subchapter M.

- §139.135 (Addition and removal of auditors and surveyors): AWO recommends that this section be revised to provide that an approved third party organization must maintain, and provide to the Coast Guard upon request, a list of current and former auditors and surveyors, along with objective evidence that each auditor or surveyor meets or met the qualification requirements of this part.

- §139.160 (Coast Guard oversight activities): We recommend that subsections (f) and (g) be moved to §138.510, since they relate more to Coast Guard oversight of the owner or managing operator's compliance with the TSMS than to oversight of the approved third party organization.

Part 140 (Operations)

- General: AWO observes that, as a general matter, many of the requirements contained in Part 140, including the proposed requirements for occupational health and safety plans, fall overboard protection, and crew orientation and training, are the kinds of items typically addressed in a safety management system. As discussed at length above, AWO believes strongly that a TSMS should be required for all towing vessels covered by Subchapter M. If the Coast Guard does not accept this recommendation and chooses to allow some towing vessels to operate without an accepted TSMS, it will be essential to ensure robust and effective enforcement of these and other policy-and-procedure-based requirements on non-TSMS vessels.

- §140.415 (Orientation for individuals that are not crewmembers): AWO agrees that, in general, it is a prudent practice to conduct a brief safety orientation for individuals aboard a towing vessel who are not members of the crew. However, to address those circumstances in which this is not possible, we recommend that the Coast Guard add a new subsection (b) which provides that a safety orientation need not be provided to an individual who is not a crewmember if that individual is accompanied while on board the towing vessel by a crewmember who is familiar with the items specified in §140.415(a).

- §140.420 (Emergency drills and training): AWO appreciates the Coast Guard's inclusion of e-learning as an option under this section. Given the great strides that have been made in e-learning programs, we recommend that the Coast Guard amend this section to provide that viewing electronically or digitally formatted materials need not be followed by a discussion led by a person familiar with the subject matter if the e-learning program used allows for recording grades or scores at the completion of the training and the individual receiving the training scores higher than a minimum threshold set forth in the TSMS applicable to the towing vessel. This would allow companies to focus individual attention on those individuals whose scores indicate that they have not fully grasped elements of required training, without imposing an across-the-board requirement for follow-up discussion.

- §140.430 (Wearing of work vests): AWO recommends that this section be amended to permit the wearing of type III personal flotation devices as an alternative to work vests. In general, Coast Guard-approved work vests, with the exception of the new Mustang inflatable work vest, are less capable as flotation devices and more difficult to use than typical type III PFDs. Type III PFDs include float coats, and many lightweight vest-type PFDs are similar to but far more capable than work vests. Amending this section to permit the wearing of type III PFDs as an alternative to work vests will promote safety, flexibility, and crew comfort.

- §140.435 (First aid equipment): AWO supports the requirement for an Automatic External Defibrillator on towing vessels engaged in round-the-clock operations that are not excepted towing vessels, and notes that many AWO members have voluntarily equipped their towing vessels with AEDs. Given the well-documented benefits of AEDs in providing life-saving early intervention in the event of a heart attack, we believe the proposed requirement meets the test of risk-based decision making and can be implemented cost-effectively. We also recommend that the Coast Guard clarify that the training required for crewmembers in the use of the AED need not be Coast Guard-approved.

- §140.505 (General health and safety requirements): The phrase "and in a manner that minimizes risk of injury or death" in §140.505(b) is an unnecessary invitation to litigation and should be deleted. Requiring that equipment be used in accordance with manufacturer's recommended practice is a clearer and wholly sufficient standard.

- §140.520 (Personnel hazard exposure and medical records): This provision is unnecessary, anachronistic and should be deleted. In the age of the Health Insurance Portability and Accountability Act, employers simply do not retain medical records on employees containing diagnoses that those employees have not seen.

- §140.610 (Hatches and other openings): We recommend revising subsection (b) to provide that all "hatches, doors, and other openings that were installed to be watertight and weathertight are functioning properly," so as to avoid the unintended consequence of encouraging towing vessel owners to remove existing watertight doors.

- §140.630 (Lookout): AWO urges the Coast Guard to delete this section. The requirements for determining a proper lookout are amply defined in Rule 5 of the Inland and International Navigation Rules, and amplified in subsequent case law. No other class of inspected vessel is subject to additional requirements regarding lookouts, and no such provision is necessary in Subchapter M.

- §140.635 (Navigation watch assessment): As detailed in the attached redline, we recommend revising this section to be consistent with the 2008 draft regulatory text favorably reviewed by TSAC. As written, this section is overly burdensome and impractical for wheelhouse personnel and contains elements better addressed in the TSMS applicable to the towing vessel than in a pre-voyage navigation watch assessment.

- §140.640 (Pilothouse resource management): AWO recommends that this section be deleted, as it is largely redundant of requirements contained in §140.635 and §140.645.

- §140.725 (Additional navigation equipment): As discussed in our comments on Part 136 above, given the definition of Western Rivers in §136.110, this section as written would impose a new and unnecessary requirement for towing vessels operating on the Gulf Intracoastal Waterway to carry fathometers. If the Coast Guard does not modify the definition of Western Rivers as recommended above, §140.725(b)(1) should be modified so as to exclude "those waters specified by 33 CFR 89.25 and 89.27."

- Subpart H (Towing Safety): As detailed in the attached redline, AWO recommends that this subpart be revised to delete §140.815 and §140.820 and substitute the current regulatory requirements of 33 CFR 164.74 and 164.76 with respect to towline and terminal gear. This will eliminate redundant or overlapping language and alleviate confusion about the interplay between the towing safety regulations in 33 CFR Part 164 and this subpart.

- §140.915 (Items to be recorded): This section should be amended to clarify that the enumerated items must be recorded "in accordance with the TSMS applicable to the towing vessel," not <u>in</u> the TSMS.

Part 141 (Lifesaving)

- Table 141.305 (Survival craft): As detailed in the attached redline, AWO recommends that the Coast Guard make several changes to the table, including deleting footnote 1, simplifying the language in footnotes 5 and 6, and copying these footnotes to the body of §141.305 for greater prominence.

- Table 141.335 (Personal lifesaving equipment): In lieu of requiring that one lifejacket per watchstander be located at each watch station (it is unclear what constitutes a watch station for a deckhand), AWO recommends that the table be amended to require that one lifejacket per watchstander be provided in readily accessible locations as specified in the TSMS applicable to the towing vessel.

- §141.340 (Lifejackets): Since the purpose of labeling lifejacket containers is to ensure that crewmembers can readily locate a lifejacket when one is needed, AWO recommends that a new subsection (g) be added to specify that open racks used for lifejacket storage need not be labeled if the lifejackets are clearly visible.

- §141.345 (Lifejacket placards): AWO recommends that this section be amended to require that placards containing information on the donning and use of lifejackets be available to all persons on board the towing vessel, but deleting the requirement that placards be posted. Such placards have more utility in the context of a safety orientation than in an emergency situation.

- §141.360 (Lifebuoys): AWO recommends several changes to this section, including: 1) deleting the reference to towing vessels less than 26 feet, since such towing vessels are not subject to the requirements of Subchapter M; 2) requiring a minimum of 2, not 3, lifebuoys on towing vessels less than 79 feet; and 3) requiring a minimum of 4, not 6, lifebuoys on towing vessels over 79 feet. These numbers are consistent with prudent industry practice for the carriage of lifebuoys on towing vessels and past experience has not shown them to be inadequate. AWO also recommends amending §141.360(b)(2) to clarify that floating electric water lights are not required for towing vessels operating solely on Western Rivers.

- §141.375 (Visual distress signals): AWO recommends that this section, as well as Table 141.370, be amended to clarify that towing vessels operating more than 3 nautical miles from shore on oceans, coastwise, limited coastwise, Great Lakes, or lakes, bays and sounds must carry 12 visual distress signals; towing vessels operating on the same routes less than 3 miles from shore must carry 6 visual distress signals; and excepted towing vessels, towing vessels operating exclusively on Rivers or Western Rivers, and towing vessels operating in a limited geographic area need not carry distress signals.

- §141.380 (Emergency position indicating radiobeacon): AWO recommends deleting subsection (c), which requires that the name of the towing vessel must be marked or painted on each EPIRB. All properly registered EPIRBs will contain vessel identifying information.

Part 142 (Fire Protection)

- §142.240 (Examination, testing, and maintenance): As detailed in the attached redline, AWO recommends taking a functional approach and simplifying this section to require that fire suppression and detection equipment and systems on a towing vessel be maintained annually or as otherwise provided in the TSMS applicable to the towing vessel.

- §142.325 (Fire pumps, fire mains, and fire hoses): AWO recommends clarifying subsection (c) to specify that the fire main must have a sufficient number of fire hydrants with attached hose "to enable a stream of water" to reach any part of the machinery space. It is the ability to project water into the machinery space, and not the length of the hose *per se*, which is important to the ability to extinguish a fire.

- §142.330 (Fire detection in the engine room): AWO recommends revising subsection (g) to provide that a fire detection system must be certified by a Registered Professional Engineer, a recognized classification society, "or alternative entity accepted by the Commandant." The Coast Guard has begun to provide needed flexibility for this existing requirement under the Towing Vessel Bridging Program (e.g., approving the use of NICET Level IV technicians to certify fire detection systems), and should take advantage of the opportunity to explicitly acknowledge the possibility of additional acceptable alternatives in the regulatory text.

- §142.345 (Firemen's outfit): AWO recommends that this section be deleted. It is simply too dangerous to expect two crewmembers to enter a burning engine room to fight a fire, and requiring the carriage of firemen's outfits and self-contained breathing apparatus conveys the expectation that such equipment must be used. In the event of a serious fire, the crew should prepare to abandon ship.

Part 143 (Machinery and Electrical Systems and Equipment)

- §143.210 (Vessels built to class): AWO recommends that subsections (b)(1) and (b)(2) be deleted. As discussed at length under "Overarching Comments" above, AWO opposes the application of the requirements of Subpart D to new or existing towing vessels, as these requirements are not solidly justified by risk. In addition, AWO recommends deleting the reference to potable water requirements that have not yet been promulgated. When the Coast Guard publishes the potable water

regulations, it can amend Subchapter M (and other appropriate subchapters) as needed.

- §143.220 (General): AWO urges the Coast Guard to include clarifying language in the preamble to the final rule that provides guidance on what does and does not constitute a "replacement in kind." It is critical that this requirement not be construed too narrowly in order to avoid subjecting existing towing vessels to unnecessary additional requirements. Where, for example, a piece of equipment such as a generator is replaced with another that has the same function and similar characteristics but is not the exact same model, such replacement should be considered "replacement in kind."

- §143.230 (Guards for exposed hazards): AWO recommends moving the language from §144.345 specifying that "This is not meant to restrict access to towing equipment such as winches, drums, towing gear or steering compartment equipment necessary for the operation of the towing vessel" to this section, where it more properly belongs.

- §143.235 (Machinery space fire prevention): AWO recommends revising this section to establish the functional requirement that piping and machinery components including fittings, flanges, valves, exhaust manifolds, and turbochargers must be suitably insulated where necessary to prevent injuries (similar to wording found in 46 CFR 177.970 and 116.970). This functional requirement is a more appropriate standard that the proposed 150 degree threshold, which is routinely exceeded in much of the equipment in towing vessel engine rooms. Leaving the proposed requirement unchanged would effectively require insulating the entire engines, which would hinder inspection, maintenance, and operations. AWO also recommends moving to this section the language from proposed §144.360(c), since it pertains to machinery space fire prevention.

- §143.240 (Control and monitoring requirements): AWO recommends revising this section to include terminology applicable to towing vessel operations. There is no discrete measure of engine thrust on towing vessels. The amount of thrust is determined and controlled by the throttle position of each engine, and monitored either through engine RPMs or propeller shaft RPMs. The direction of thrust is controlled by the rudders and monitored by the direction of the rudders and wheel wash. As detailed in the attached redline, AWO recommends that this section be revised to require towing vessel operators to control and monitor throttle position and RPMs rather than thrust.

- §143.245 (Alarms and monitoring): AWO recommends several changes to this section, including specifying that the alarm panel located at the operating station need not specify which piece of equipment caused the alarm to actuate and providing that, as an alternative to having a means to test actuation at the operating station, a vessel may have a continuous self-monitoring alarm system that actuates

if an alarm point fails or becomes disabled. AWO also recommends deleting the requirement in subsection (c) for gauges visible at the operating station. The alarm system monitors these critical functions and, if gauges are not already installed, retrofitting them will unnecessarily clutter the operating station and potentially distract the operator of the towing vessel.

- §143.270 (System isolation and markings): AWO recommends revising this section to provide that graywater lines on towing vessels built before the effective date of the final rule need not be fitted with isolation valves or marked if all piping is contained inside a fuel tank or void. We also recommend adding language regarding sanitary discharges adapted from the ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways.

- §143.275 (Fuel system requirements for towing vessels): AWO recommends revising subsection (c)(2) to establish the functional requirement that fuel filters must be "maintained to ensure adequate operation of the generator at all times." In addition, AWO recommends deleting subsection (d), which is redundant of §143.245(a)(9).

- §143.300 (Pressure vessels): As detailed in the attached redline, AWO recommends revising this section to include language copied from 46 CFR Subchapter F with regard to the examination and testing of pressure vessels.

- §143.310 (Shipboard lighting): AWO recommends revising this section to require that automatic battery-operated emergency lighting have a duration of at least 30 minutes, not 3 hours. Three hours is excessive given the relatively small size of towing vessels and the short amount of time needed to evacuate a towing vessel. AWO also recommends several other wording changes as detailed in the attached redline to establish a more functional approach to this requirement. For example, emergency lighting must be provided "to facilitate egress from" crew working and living areas, not necessarily <u>in</u> those spaces.

- §143.325 (Pilothouse alerter system): AWO supports the proposed requirement for pilothouse alerter systems on towing vessels operating round-the-clock and moving barges. Towing vessel casualty history provides a clear risk-based case for such a requirement, and the experience of many AWO members has shown that such systems are a cost-effective means of reducing the risk of accidents caused by operator incapacitation. AWO also supports subsection (b), which provides that a towing vessel need not have a pilothouse alerter system if a second person is provided in the wheelhouse.

- §143.330 (Towing machinery): AWO recommends adding to this section an example of what could constitute an acceptable safeguard against the towing machinery becoming disabled if the tow gets out of line ("e.g., towing bitt with crossbar").

- §143.335 (Remote shutdowns): AWO recommends deleting the word "manual" from this section. Most new engines are electronic, and either an electrical or mechanical shutdown should be an acceptable means of remote shutdown. AWO also recommends deleting from subsection (b) the qualifier "provided that each engine can be independently shut down."

- §143.340, 143.345, 143.350, 143.355, and 143.360: As discussed under "Overarching Comments" above, AWO urges that these prescriptive requirements for existing towing vessels be deleted as unnecessary and not justified by risk. §143.305 appropriately addresses functional requirements for electrical systems and equipment on existing towing vessels and is consistent with the approach recommended by TSAC. With respect to the proposed §143.355 (Electrical grounding and ground detection), we note that many existing towing vessels are ungrounded and ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways(4-5-6/1.3) provide that ungrounded distribution systems are to be provided for vessels carrying oil.

- Subpart D (Requirements for Towing Vessels that Tow Oil or Hazardous Materials in Bulk): As discussed under "Overarching Comments" above, AWO strongly recommends that this subpart be deleted. The proposed requirements are not justified by towing vessel casualty history and would require substantial and extremely costly retrofitting of virtually the entire fleet of towing vessels moving tank barges today.

Part 144 (Construction and Arrangement)

- §144.215 (Special consideration): AWO recommends revising this section to specify that the OCMI may give special consideration to the structural requirements for excepted towing vessels, towing vessels operating exclusively within a limited geographic area, and towing vessels under 65 feet in length, in addition to towing vessels of an unusual design.

- §144.220 (Verification of compliance): AWO recommends clarifying this section to avoid confusion about the scope of the verification required and avoid inappropriately broad interpretations of when a verification of compliance must be conducted. As detailed in the attached redline, AWO recommends that a verification of compliance "with the standards of this part that are applicable to the towing vessel" must be performed "prior to conducting a major conversion as defined in section 136.110 of this subchapter" or upon request of the Coast Guard. Routine events such as engine repowering should <u>not</u> trigger the need for a verification of compliance.

- §144.305 (General): As detailed in the attached redline, AWO recommends several modifications to this section to avoid confusion. Rather than referring to construction and arrangement standards applicable to an existing towing vessel prior to the implementation date of the regulations – standards which, in most cases, do not exist – this section should provide that an existing towing vessel "must be built and maintained in a manner suitable for its intended service and route."

- §144.320 (Watertight integrity): Similar to our recommendations on §144.305 above, AWO recommends revising this section to avoid confusion about the standards applicable to existing towing vessels. We recommend deleting the reference to watertight integrity standards applicable to the towing vessel prior to the effective date of the regulations, and simply requiring that an existing towing vessel meet the requirements of §144.320(a)(1)-(5).

- §144.335 (Handrails and bulwarks): AWO recommends revising subsection (b) to provide that in areas where space limitations "or operational requirements for crew ingress and egress" make deck rails impractical, hand grabs may be substituted for deck rails.

- §144.345 (Guards in dangerous places): As discussed above, AWO recommends that this language be moved to §143.230 (Guards for exposed hazards) to avoid redundancy.

- §144.350 (Exhausts): AWO recommends that subsection (b) be amended to require insulation or guarding for each dry exhaust pipe from an internal combustion engine that is within reach of personnel, and not for water-cooled exhaust manifolds.

- §144.355 (Crew spaces): As detailed in the attached redline, AWO recommends that subsection (d) be revised and clarified to make the functional requirement clearer. The condition of the crew accommodations should "provide a suitable environment for sleep and off-duty rest. Factors to consider include: vibrations, ambient light, noise levels, and general comfort."

- §144.360 (Ventilation for accommodations): Subsection (c) is not related to the subject of this section. AWO recommends that this language be moved to §143.235 (Machinery space fire prevention).

- §144.410 (Structural standards): AWO recommends that subsection (a)(2) be amended to provide that new towing vessels certificated for service on the limited coastwise route from St. Marks to Carrabelle, FL, and the limited Great Lakes route from Chicago to Burns Harbor, IN, may comply with the ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal

Waterways. This is consistent with the standards applied to tank barges certificated for these limited routes.

- §144.415 (Stability): AWO urges that subsections (c)(1) and (2) be deleted. ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways do not impose such requirements on classed vessels, and there is no risk-based justification for subjecting towing vessels operating on protected or partially protected waters to these standards. In addition, we recommend clarifying subsection (c)(3) to provide that each new towing vessel "that is certificated to operate on exposed waters (including oceans, Great Lakes, and coastwise routes more than 20 nautical miles from the mouth of a harbor of safe refuge)," or that requires a load line, must meet the requirements of 46 CFR 170.170 and 174.145.

Manning/Other Conforming Amendments Needed

AWO echoes TSAC in strongly supporting the Coast Guard's statement in the preamble to the NPRM that "we are not proposing to change any of the current manning levels required for towing vessels." To that end, as detailed in the attached redline, we recommend several changes to the current regulatory text to avoid inadvertent changes to the manning or credentialing requirements for mariners on towing vessels. Specifically, we recommend that:

- 33 CFR 155.710(e) be revised so as not to require the person in charge of a transfer of fuel oil to hold a license or merchant mariner credential endorsed as Tankerman-PIC. Rather, the person in charge of a fuel transfer on a towing vessel inspected under Subchapter M should be required <u>either</u> to have a license or Tankerman-PIC endorsement <u>or</u> a letter satisfying the requirements of 33 CFR 155.715 and designating him or her as PIC;

- 46 CFR 15.525(c) be revised to reinstate language that appears to have been inadvertently omitted during the transfer of language from the current requirements at §15.610. That is, a towing vessel operating in the pilotage waters of the Lower Mississippi River must be under the control of an officer who holds a first-class pilot's license or endorsement for the route, "MMC officer endorsement for the Western Rivers," or who meets the requirements of either (c)(1) or (2) of this section, as applicable; and,

- 46 CFR 15.810(b) and §15.820(a)(3) be amended so as not apply to towing vessels inspected under Subchapter M. This is necessary for consistency with the Coast Guard's stated goal (and the recommendations of TSAC) not to use Subchapter M as a means of changing the manning requirements for towing vessels.

In addition, AWO supports the recommendation of TSAC that §15.535 be amended to incorporate the 2006 TSAC recommendation on manning, provide a baseline requirement for a safe watch complement and avoid confusion about the minimum manning that will be required on towing vessel Certificates of Inspection and the role of the TSMS in crewing decisions. As detailed in the attached redline, we recommend that this section be amended to specify that on a towing vessel subject to inspection under Subchapter M, "At least one licensed officer and one additional crewmember must be on duty at all times while the towing vessel is underway. These requirements shall be posted on the towing vessel's Certificate of Inspection." This section should be further amended to provide that:

> Additional manning shall be provided as documented in the Towing Safety Management System applicable to the towing vessel, taking into account the following factors: applicable law and regulation, number, size, and type of barges to be towed; towing route; safety of personnel, equipment, and environment; service in which the tow is engaged; functional duties required of crew in addition to navigation; configuration of towing vessel superstructure, deck, and engine room; extent of automation; size and power of equipment used; prevailing environmental and climatic conditions; and experience of crew.

We believe the TSMS is ideally suited to specify how a towing vessel will be safely crewed, taking this comprehensive list of factors into account.

Conclusion

AWO strongly supports the Coast Guard's efforts to establish an effective and cost-effective inspection regime for towing vessels that will take safety, security, and environmental protection in our industry to a higher level. We believe the notice of proposed rulemaking represents an important, positive step in that direction. We urge the Coast Guard to adopt the recommendations of AWO and TSAC and promulgate a final rule that: 1) requires all towing vessels subject to Subchapter M to comply with a Coast Guard-accepted Towing Safety Management System; 2) eliminates unnecessary requirements that are not solidly justified by towing vessel casualty history and risk; and, 3) incorporates needed modifications to ensure maximum clarity and practicability.

Thank you for the opportunity to comment. We would be pleased to answer any questions or provide further information as the Coast Guard sees fit.

Sincerely,

Jennifer A. Carpenter

Jennifer A. Carpenter

Appendix A

Comments and response to information presented by the Coast Guard in Section IV-L, "Hours of Service and Crew Management Programs," in the Federal Register, Vol. 76, No. 155, August 11, 2011

Prepared by Fred W. Turek, PhD and Kathy J. Reid, PhD
November 11, 2011

A. Introduction

This document is in response to the request from the Coast Guard for additional data and other information related to the views of the Coast Guard on "… potential hours of service (HOS) and crew endurance management program standards and requirements," as detailed in Section IV-L of the August 11, 2011 Federal Register (henceforth referred to as IV-L). We particularly want to respond to this statement from the Coast Guard whose theme runs throughout much of IV-L:

> *Based on the Coast Guard's current research, the Coast Guard is considering requirements that would permit crewmembers on towing vessels: (a) Sufficient time off to obtain at least 8 uninterrupted hours of sleep or at least 7 hours of uninterrupted sleep and an additional sleep period in every 24 hour period; and (b) the means to prevent the disruption of circadian rhythms (p. 49992).*

In response to these two potential new requirements, we provide in Section B below further data, both from our own studies as well as data in the scientific literature, which is not compatible with a number of statements, conclusions and interpretations of the literature as presented by the Coast Guard in Section IV-L. The literature we cite in this response includes a further discussion of some of the literature referred to by the Coast Guard in IV-L, as well as information not included by the Coast Guard in Section IV-L.

In Section C of this response to IV-L, we address some of the relevant 18 bulleted questions posed by the Coast Guard in their Introduction to IV-L. In Section D, we propose studies and scientific data that must be performed and collected before any changes in the rules and regulations are implemented by the Coast Guard regarding either the HOS or attempts to use light management to shift the circadian clock of crews in the maritime industry.

A major contention of the Coast Guard that runs throughout Section IV-L is that it is necessary to change the HOS so that 7-8 hours of "uninterrupted" sleep is available on a 2-watch system where each crewmember is working and on duty for 12 out of every 24 hours over many days (e.g., 14-28 days in a row). There is no data in the scientific literature that crewmembers would be able to routinely obtain 7-8 hours of uninterrupted sleep under a 2-watch system that includes a 7-8 hour continuous rest period. Indeed, we know of no data that would indicate that crewmembers would obtain more or better quality of sleep under a 2-

watch system that allowed for two periods of rest that were 8 (or 7) and 4 (or 5) hours in duration than they obtain on a 6:6:6:6 square watch. Indeed, we are concerned that on a 8:8:4:4 or 7:7:5:5 rectangular two-watch system there would be insufficient time in the shorter rest period to obtain sufficient sleep that is needed over 24 hours. Indeed, based on the literature cited by the Coast Guard, individuals with <u>two</u> 8-hour rest periods per 24 hours (that is, individuals working a on 4-8-4-8 three-watch system) fail to show any significant increase in sleep time compared to those with two 6-hour rest periods per 24 hours. Such data are absolutely necessary before any changes in the HOS regulations are made, especially since some of the changes suggested by the Coast Guard in IV-L might actually lead to less, not more, sleep over 24 hours. That is, based on the scientific literature, moving from a 2-watch square to a 2- watch rectangular schedule could lead to less, not more, sleep per 24 hours, with the result that crewmembers will have increased fatigue and cognitive performance deficits if such a change was made. Concluding remarks are provided in Section E. Literature cited in this response is presented in Section F.

In addition, in Section F, we comment on the use of the FAST model, Figures 2-10, used by the Coast Guard to support their recommendations for a change in watch schedules given that mariners in the real world are not obtaining anywhere near the modeled sleep time used in Figures 8 and 10 when on a 7:7:5:5 work schedule.

B. Section B: Further information on a) the need for 7-8 hours of uninterrupted sleep and b) preventing the disruption of circadian rhythms.

In this section, we respond to the position of the Coast Guard that consideration should be given for new requirements that would allow:

> (a) Sufficient time off to obtain at least 8 uninterrupted hours of sleep or at least 7 hours of uninterrupted sleep and an additional sleep period in every 24 hour period; and (b) the means to prevent the disruption of circadian rhythms.

B-1. Permit crewmembers on towing vessels: (a) Sufficient time off to obtain at least 8 uninterrupted hours of sleep or at least 7 hours of uninterrupted sleep and an additional sleep period in every 24 hour period

A major statement repeated over and over in IV-L by the Coast Guard is that the desired goal of any work schedule on vessels required to be manned 24 hours a day is to implement a 2-watch schedule (i.e., sufficient qualified personnel, with each crewmember being available 12 hours per day) that will allow for a "certain number of hours of uninterrupted sleep, such as 7-8 hours, to reduce the rate of injuries or accidents." While it is indeed desirable to obtain 7-8 hours of sleep per 24 hours to maintain optimal performance, no data are provided by the Coast Guard to indicate that crewmembers would obtain 7-8 hours of sleep if they were provided with an uninterrupted 8-hour period of time to sleep. Indeed, it has been consistently demonstrated that shift workers who work 8 hours and have 16 hours off to sleep only obtain 5-6 hours of sleep when sleep occurs at the "wrong" circadian time (OTA, 1991).

Just as it is difficult to stay awake between 3:00 am and 7:00 am, it is also difficult to fall asleep during the daytime for individuals living on a normal 24-hour light-dark cycle (Kryger et al., 2005). Individuals who work at night and attempt to sleep during the day are often only able to obtain 4-6 hours of sleep (OTA, 1991). Data in the papers cited by the Coast Guard (including Harma et al., 2008 and Lutzhoft et al., 2010), in fact, also show that even when crewmembers are given an 8-hour period to sleep, they cannot achieve 8 hours, or even 7 hours, of uninterrupted sleep. In citing the study in Harma et al., 2008, the Coast Guard is comparing a 6:6:6:6 two-watch system to a 4 on: 8 off: 4 on: 8 off three-watch system, which of course is not comparable to a 4 on: 8 off: 8 on: 4 off two-watch system. The Coast Guard does not reference this key distinction and concludes that these studies support, in effect, a rectangular watch. However, a more in-depth analysis of the data in the cited Harma et al., 2008 paper reveals that even though the pilots/captains have two 8-hour periods of rest per 24 hours, the amount of previous sleep length in the preceding 8-hour window before going on duty for 4 hours averaged (see Fig. 3 in Harma et al., 2008):

3.8 hours
4.3 hours
5.2 hours
5.6 hours
4.0 hours
or
3.7 hours

The differences between 3.7-5.6 hours are due to when the 8-hour rest period fell in the circadian day. The conclusion is clear: even with an 8-hour period of "uninterrupted" sleep, the crews in the study cited by the Coast Guard are getting at a maximum 5.6 hours of time in bed, and at a minimum 3.7 hours, during an 8-hour period of “uninterrupted” sleep opportunity. This contradicts the Coast Guard assumption that if you allow for an 8-hour period of uninterrupted sleep, the crew will obtain 8 hours. Indeed, it argues for the opposite—they will not get 8 hours of sleep, and for some shifts, they will only obtain 3.5-4 hours of sleep during the 8-hour rest window and now only have a 4-hour rest time for a nap on a rectangular 2-watch 8:8:4:4 schedule. In the text of their paper, Harma et al. present the average sleep time in the previous 6-hour sleep opportunity period on a 6:6:6:6 watch as 4 hours and 6 minutes. For the 8-hour time off, it is 4 hours and 50 minutes with no statistical significance between them. Such findings indicate that one will need a split sleep-nap/anchor sleep strategy on either a square or rectangular watch. On 6:6:6:6, you have 6 hours for a nap period; on 8:8:4:4 one only has a 4-hour window for the second sleep period.

A similar conclusion arises from another study cited in IV-L by the Coast Guard. In Lutzhoft et al (see figure below), the total sleep per 24 hours on a 6:6:6:6 schedule was found to be actually more than on an 8-on, 4-off 3-watch schedule, despite the fact that the crews on the 8:4 schedule had a total of 16 hours to sleep vs. 12 hours for those crews on a 6:6 square watch (see Fig. 1).

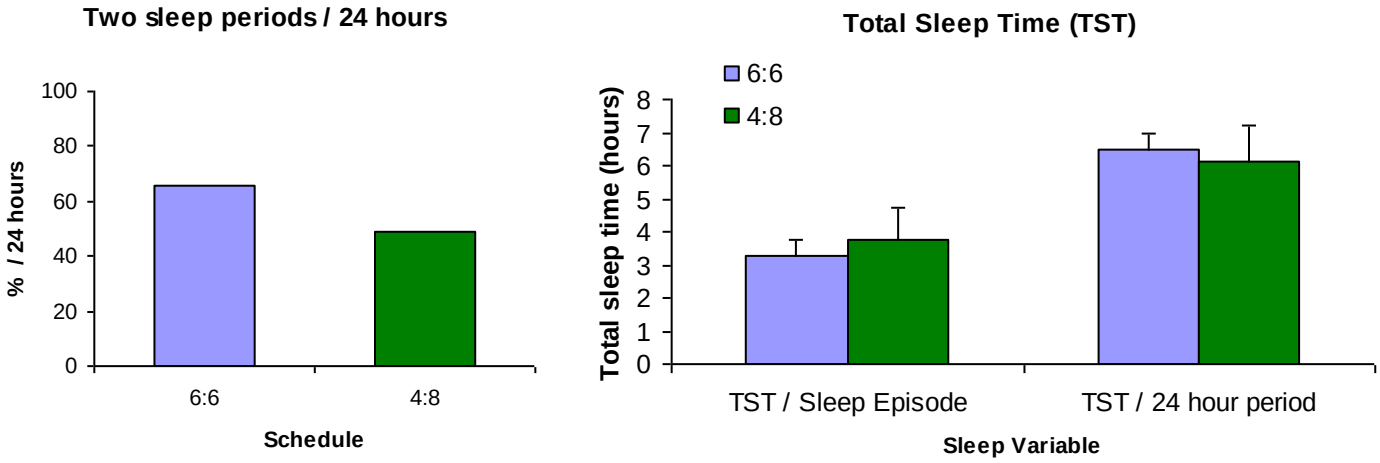

Figure 1. Left panel is a graphic representation of results from Lutzhoft et al. 2010 showing that 66% of sleeps in the 6 on–6 off system were split into 2 sleep episodes during 24 hrs, whereas on a 4 on–8 off schedule, sleep was split into 2 episodes 49.1% of the time. Right panel is a graphic representation of results from Lutzhoft et al. 2010 for mean total sleep time for each sleep episode and for each 24-hr period as determined using actigraphy. Note that crewmembers on a 4:8:4:8 schedule actually slept less (no statistical difference) than those on a 6:6:6:6 schedule despite having two 8-hr opportunities every 24 hrs. Such results do not support the contention of the Coast Guard that mariners would be able to sleep uninterrupted for 7-8 hrs if given an 8-hr sleep opportunity. Data from both of these panels is from 15 crewmembers working a 4 on–8 off schedule (4:8) and 15 crewmembers on a 6 on–6 off schedule (6:6). Data from Lutzhoft et al., 2010.

Thus, allowing 8 hours of uninterrupted sleep time during the circadian day will not lead to 8 hours of sleep. As noted by Lutzhoft et al 2010, "what the effects of split sleeps are in a maritime setting should be further investigated." Certainly, there is a need for such studies before the Coast Guard changes the HOS in a way that may lead to less, not more, sleep over 24 hours. This is particularly the case since it is not at all clear if an 8:8:4:4 rectangular watch (as recommended in CEMS) would lead to more or less sleep over 24 hours compared to a square 6:6 watch given the fact that the sleep opportunity during the second rest period of an 8:8:4:4 watch is only 4 hours.

It is also noteworthy that other studies in which mariners worked a 4 on: 8 off: 4 on: 8 off schedule have also reported that crewmembers are not obtaining 8 hours of "uninterrupted sleep" despite having 8-hour sleep opportunities. For example, Sanquist et al. 1997 found that mariners on a 4:8:4:8 schedule averaged 6.6 hours of sleep per 24 hours with sleep occurring in bouts of less than 5 hours in duration.

Recent data on human performance capabilities in individuals obtaining their total sleep during a single sleep period, or during two sleep periods per day (i.e. an "anchor" sleep period and a "nap" sleep period), has indicated that performance levels are dependent on the total number of hours of sleep per day. That is, individuals obtaining the same total amount of sleep, whether during a single sleep period, or two sleep periods, have similar levels of performance.

Figure 2 shows the basic protocol for this study whereby individuals were allowed to sleep (TIB = time in bed) from 4.2 to 8.2 hours per day during a single "Nocturnal anchor sleep period" or 4.6 to 7.4 hours per day when the sleep times were divided into two bouts, i.e., nocturnal anchor sleep and diurnal nap sleep. The overall conclusion from these studies was that performance levels were better when total sleep time was increased, but performance levels (and sleep time) were similar, for example, when an individual slept 6.2 + 0 hours vs. 4.2 + 2 hours (Mollicone et al., 2007; Mollicone et al., 2008). Thus, the contention of the Coast Guard that 7-8 hours of "uninterrupted" sleep is better than 7-8 hours per 24 hours obtained by a split sleep schedule is not supported by recent scientific literature. It is not clear why the Coast Guard failed to take the data from Mollicone and colleagues into account in putting IV-L together.

Daniel J. Mollicone *Acta Astronautica* 2008

Diurnal nap sleep TIB (h)	Nocturnal anchor sleep TIB (h)			
	4.2	5.2	6.2	8.2
0.0	4.2	5.2	6.2	8.2
0.4	4.6	5.6	6.6	a
0.8	5.0	6.0	7.0	a
1.2	5.4	6.4	7.4	a
1.6	5.8	6.8	a	a
2.0	6.2	7.2	a	a
2.4	6.6	a	a	a

a - Condition not studied. *Mollicone et al. 2008*

Figure 2: Table of the experimental groups for the Mollicone et al.[1-2] anchor sleep, nap sleep study. Circles indicate the sleep intervals most relevant to the 6:6:6:6 square watch schedule during towboat operations. For example, as part of his study, Mollicone et al. compared groups sleeping 6.2h continuously (red circles) with groups sleeping 4.2 hours followed by a later 2.0 hour nap (yellow circles). The major conclusion from the study was that breaking up sleep into two separate periods did not result in adverse sleep or performance outcomes, when compared to individuals sleeping the same amount during continuous sleep intervals. a = no data collected, TIB = Time In Bed.

In conclusion, the beneficial effects of sleep on fatigue and performance are mostly dependent on the total amount of sleep achieved over any 24-hour period and are not dependent on when sleep occurs or on the consolidation of sleep into a single bout. Therefore, the key to any schedule for sleep and wake activities is to design the schedule so the individual can obtain 7-7.5 hours of sleep per 24 hours, regardless of the timing of the work schedule.

B-2. Means to prevent disruption of circadian rhythms

In IV-L, the Coast Guard concludes that "physiological adaptation to nighttime work schedules is required to prevent crewmember fatigue," and later "adapting to nighttime work and daytime sleep requires specific natural and artificial light exposure regimens prior, during and after the night watch to readjust physiological timing."

Recent data we have obtained on sleep of crews on the front watch (also called the captain's watch) or the back watch (also called the pilot's watch) on vessels using a 6:6:6:6 square watch schedule do not support the Coast Guard's contention that readjusting physiological timing would lead to more sleep. Examination of Figure 3 reveals that crews on the front and back watch are sleeping the same amount of time. Crews on the front watch slept about 3.7 hours during the anchor sleep period from about 00:00-06:00, and they usually were able to take a 2-3 hour nap during the 12:00-18:00 sleep period. This is in line with the circadian propensity to sleep during the night and nap in the afternoon. However, surprisingly, crewmembers on the front watch only slept about 3.7 hours during the 6-hour anchor sleep period from 00:00-06:00, which is the prime time for human sleep. <u>This finding makes it very unlikely that crews on a 7:7:5:5 or an 8:8:4:4 watch schedule could obtain close to 7 or 8 hours of sleep even when the endogenous drive to sleep coincided with a 7- or 8-hour rest period.</u> Thus, shifting the body clock of the crews on the back watch to their work schedule would not be expected to increase sleep time, since they are sleeping the same amount as crews on the front watch, who already have their body clock adjusted to this work schedule. Thus, our data indicate that captains (where anchor sleep is at appropriate circadian time) sleep the same amount as pilots (where anchor sleep is at inappropriate circadian time), thus providing no evidence that shifting the pilot's clock to be in-phase, like the captain's clock is in-phase with circadian sleep time, will have any significant impact on sleep.

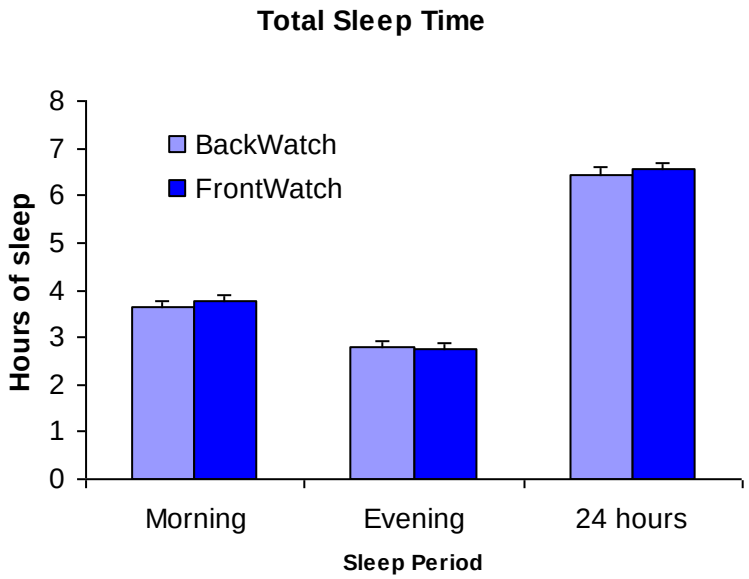

Figure 3. Graphic representation of mean (±standard error of the mean) total sleep time from five consecutive days of actigraphically recorded rest-activity in crew aboard towing vessels on a 6:6:6:6 square watch. Light blue indicates crew on the BackWatch (n=33) working between approximately 00:00-06:00 and 12:00-18:00. Dark blue indicates crew on the FrontWatch (n=37) working between 06:00-12:00 and 18:00-00:00. Morning sleep period refers to sleep in the rest intervals between 00:00-12:00, the evening sleep period refers to sleep in the rest intervals between 12:00-00:00 and the 24 hour sleep period refers to the total sleep time per 24 hour period. Preliminary results (coming to the same conclusion that sleep amount is similar on front and back watches) of this study were provided in Preuss et al., 2010, although this figure is unpublished and represents a larger sample size.

It should be noted that at the last annual meeting of the Associated Professional Sleep Societies (APSS, Minneapolis, MN, June 2011), there was a symposium on the subject of "Correcting misalignment with light and metabolism: From theory to practice" (Symposium O5, Sunday, June 12, 2011). As noted from the title, sleep researchers are continuing to study how theoretical ideas on shifting the human clock, so that the body clock is in synchrony with the work schedule, can be actually implemented in the workplace. While such shifting of the human clock is an interesting theoretical possibility, until data are obtained from real-world conditions (i.e., towing vessel operations), demonstrating that such induced phase shifts are an effective fatigue risk management procedure that can be translated from the laboratory to the towing vessel operational environment, no new rules or regulations should be implemented.

Two papers presented at the June 2011 APSS sleep meeting also indicate how experimental in nature it is to phase shift the human clock for work purposes. Crowley and Eastman, 2011, use various combinations of number and duration of pulses of light in the morning to phase advance circadian rhythms in humans to try to determine what might be effective strategies to advance the clock. Burgess et al., 2011, in an abstract entitled "Healthy humans are sensitive to small degrees of circadian misalignment," conclude that their results "(1) demonstrate that subjective sleepiness and performance consistency are sensitive to a small change in circadian phase angle and (2) support the notion of an ideal circadian phase angle in humans. Thus even

healthy humans may be more sensitive to small changes in circadian phase than previously thought."

Such intriguing scientific data indicates that we are still in the discovery stage in determining the effectiveness of fully phase shifting the circadian clock and in understanding the performance implications for only partially resetting the human circadian clock. The very fact that this is still an area of uncertainty for the use of light management to shift circadian clock in the scientific literature argues against the Coast Guard requiring such a strategy, which itself would be one big experiment without a control group; thus one would not be able to conclude one way or another if this was a good strategy/tactic to be employed.

C. Response to Questions Raised in IV-L

In this section, we address 10 of the 18 questions posed by the Coast Guard in the opening of IV-L.

1. **What would be the best way to manage work and rest schedules to ensure sufficient time off for mariners on towing vessels?**

   Where towing vessels are manned continuously over 24 hours using a 2-watch crew, the time for each rest period must be long enough to allow for a significant sleep period as well as time to engage in social and personal activities. Thus, the two rest periods must have sufficient time for an anchor sleep or a nap sleep period and at the same time, leave enough time for non-sleep activities. Based on the scientific literature, it appears that when given an 8-hour period of time to sleep, mariners only sleep for 3.5-5.5 hours during that sleep opportunity window. Of great concern is that if the next sleep opportunity is only 4 hours, there will not be sufficient time to obtain a significant second period of sleep. Thus, an 8:8:4:4 schedule may allow for less total sleep over 24 hours than a 6:6:6:6 schedule.

2. **How many hours of uninterrupted sleep per day do mariners on towing vessels require?**

   As noted in Section B, based on the scientific literature, it is not the number of <u>uninterrupted</u> hours of sleep per day that is important, but rather the <u>total</u> hours of sleep per 24 hours that is important for performance and maintenance of alertness. Indeed, when the sleep opportunity is not aligned with the circadian cycle, even a period of 12-16 hours of sleep opportunity will not allow for the Coast Guard's recommended 7-8 hours of uninterrupted sleep per 24 hours.

3. **What would be the best method to ensure that sufficient qualified personnel are available for 12 hours of work per day on a towing vessel?**

   Given a split shift system, based on the scientific literature, the best method is to allow for anchor sleep to occur during one sleep opportunity and a nap sleep to occur during the second sleep opportunity. Importantly, there must be time during the nap sleep opportunity for crews to engage in non-sleep social and personal activities as well as to obtain a significant amount of "nap" sleep. It is also important that crewmembers are educated on the importance of obtaining sufficient sleep on a day-to-day basis for optimal health and performance. A single 12-hour work period per 24 hours is unlikely to be a viable option in the towing vessel industry due to the high level of continuous concentration required. (An exception to this is in the barge fleeting/harbor services sector, in which operations are intermittent rather than continuous.)

4. **What would be the benefits to implementing a mandate that mariners on towing vessels obtain a required number of hours of uninterrupted sleep, such as 7-8 hours, for your vessel or organization? Would such a mandate be effective in reducing vessel casualties and other accidents?**

   Based on the scientific literature, it is not possible to obtain 7-8 hours of uninterrupted sleep for both crews, where each crewmember is required to work 12 hours per 24 hours. Allowing crews a 7-8 hour sleep opportunity will not allow crewmembers to routinely obtain 7-8 hours of uninterrupted sleep. In any case, based on the scientific literature, it is the total amount of sleep time, not the total amount of uninterrupted sleep, that is important for maintaining optimal performance (Mollicone et al., 2007; Mollicone et al., 2008). Mandating uninterrupted sleep would be difficult to enforce, given biological and psychosocial constraints.

5. **Despite medical and scientific evidence, discussed below, that most people need at least 7 hours of uninterrupted sleep to restore their cognitive abilities necessary to maintain situational awareness, it is common for watch and rest schedules on towing vessels to fail to permit this minimum amount of uninterrupted sleep. Why have market forces not caused the towing vessel industry to adopt work schedules that permit the minimum amount of uninterrupted sleep necessary for most persons to maintain situational awareness?**

   On the contrary, the medical and scientific literature not discussed in IV-L indicates that most crewmembers, when given a 7-8 hour sleep opportunity, cannot obtain 7-8 hours of uninterrupted sleep. Thus, it is common in the towing vessel industry to allow for two sleep opportunities where each opportunity allows for significant sleep such as on a 6:6:6:6 square watch schedule. Furthermore, based on scientific literature not discussed in IV-L, the total amount of sleep over 24 hours is of prime importance for maintaining optimal levels of performance and alertness, and not the amount of uninterrupted

sleep. As discussed elsewhere in this response, even a 16-hour period of sleep opportunity does not lead to 7-8 hours of uninterrupted sleep when sleep is occurring at the wrong internal circadian clock time.

6. **Would a mandate that mariners on towing vessels obtain a required number of hours of uninterrupted sleep, such as 7-8 hours, require a change in watch schedules? If so, what watch schedules would a towing vessel use?**

   It is not possible to require or mandate that mariners "obtain a required number of hours of uninterrupted sleep, such as 7-8 hours," just as it is not possible to "mandate" that mariners eat or expend (exercise) a certain number of calories per day. Such personal choices cannot be mandated, i.e., you cannot mandate someone to sleep if they cannot fall asleep. Instead, what is needed is to change the culture of mariners (and many other individuals) such that sufficient sleep is understood to be important for optimal performance, safety and health. Such a change in culture will require educational programs that explain the importance of sleep for health and well-being.

7. **Would a mandate that mariners on towing vessels obtain a required number of hours of uninterrupted sleep, such as 7-8 hours, require more than changes in watch schedules?**

   Yes, a mandate that required mariners to obtain 7-8 hours of uninterrupted sleep would require the use of pharmacological agents or behavioral therapies (e.g., exercise, sleep hygiene, cognitive behavioral therapy for insomnia) that would enable mariners to achieve the mandated 7-8 hours of uninterrupted sleep. One cannot "force" the individual to do something that may not be possible for him/her to do.

8. **Would a crew endurance management program requirement alone, without a specification requirement that mariners on towing vessels obtain a required number of hours of uninterrupted sleep, such as 7-8 hours, be effective in combating fatigue?**

   No, however, if there was a CEM program that enabled crews to obtain 7-8 hours of total sleep over a 24-hour period, such a program could be effective in combating fatigue, based on the scientific literature. Presently, there is no evidence that crews working square or rectangular watches can obtain 7-8 hours of uninterrupted sleep, necessitating a need for educational programs about the need for split sleep strategies for about 7-8 hours of total sleep.

9. **Would a crew endurance management program requirement alone, without a specification requirement that mariners on towing vessels obtain a required number of hours of uninterrupted sleep, such as 7-8 hours, reduce casualties and injuries?**

   There is no evidence, one way or another, for reducing casualties and injuries, although based on scientific literature on the importance of sleep time for optimal performance, this may be possible if crews can achieve 7-8 hours of total sleep on a day-to-day basis.

10. **What is the appropriate phase-in period or method for implementing hours of service and crew endurance management program standards or requirements?**

    There is no appropriate phase-in period or method until evidence is provided that a particular implementation of a new HOS requirement is effective, especially when some of the proposed HOS schedules in IV-L could lead to less sleep per 24 hours and increased fatigue.

D. Data needed before any changes are made in the rules and regulations for scheduling crews in the towboat/vessel industry

In Section IV-L (p. 49996), the Coast Guard refers to some of the aspects of the voluntary CEMS program that are designed to decrease fatigue in the commercial maritime industry and concludes:

> *However, while these activities are extremely important, the central objective of CEMS was and is to ensure that crewmembers have sufficient time off to obtain a daily minimum of 7-8 hours of uninterrupted, high-quality sleep. The Coast Guard has information suggesting that this daily sufficient sleep is crucial to maintain alertness and the cognitive abilities to maintain situational awareness and adequate physical capacity in the work environment.*

Implied in this statement is that the Coast Guard has information that 7-8 hours of uninterrupted sleep is crucial to maintain alertness. However, as noted in Section B above, the Coast Guard failed to take into account recent data suggesting that the total amount of sleep per 24 hours, and not the amount of uninterrupted sleep, determines fatigue, alertness and performance levels. Furthermore, throughout IV-L, the Coast Guard suggests that mariners will be able to obtain 7-8 hours of uninterrupted sleep if they are given a 7-8 hour period of sleep opportunity, despite the fact that the literature they cite to support a change in schedule from a square 6:6:6:6 or a rectangular 8:8:4:4 watch demonstrates that mariners do not obtain anywhere near 7-8 hours of uninterrupted sleep when given an 8-hour sleep opportunity. New studies are required before any new rules or regulations are implemented since the studies referred to in IV-L do not support any changes in the present work regulations. While the Coast Guard cites papers that compared a 2-watch (12 hours of work per 24 hours) to a 3-watch (8 hours of work per 24 hours) to support the change from a 6:6:6:6 to a 8:8:4:4 watch schedule,

one cannot argue that there is literature showing an 8-hour period of rest is better than a 6-hour period of rest when the paper being cited compares a 2-watch (total of 12 hours on duty for each crewmember) with a 3-watch (total of 8 hours on duty for each crewmember) schedule.

Since no scientific evidence is presented that crews actually sleep more or better on a rectangular 2-watch system vs. a square 2-watch system, it would be irresponsible to require such a watch change. Indeed, a 8:8:4:4 watch might actually decrease sleep time per 24 hours, and increase fatigue with potential catastrophic consequences. Indeed, as noted in IV-L, the most "dangerous" time is the final two hours of the pilot watch for the 0000-0600 work period: a dangerous time that would be doubled on an 8-hour watch extended over the nighttime.

Since the cited results by the Coast Guard demonstrate that mariners do not, on average, obtain anywhere near 7-8 hours of uninterrupted sleep even when given 8-hour sleep opportunities per 24 hours, it is clear that more studies are needed to:

1. Determine why mariners are only obtaining 5-6.5 hours of sleep over a 24-hour period, regardless of whether they are given two 6-hour or two 8-hour sleep opportunities per 24 hours.
2. Determine how a split sleep (i.e., anchor sleep and nap sleep) strategy can be used to obtain 7-8 hours of total sleep per 24 hours—a strategy which would be necessary on either a 6:6:6:6 square or 8:8:4:4 rectangular watch.

With respect to #1, more data are needed on sleep habits and perhaps sleep disorders (e.g., sleep apnea, restless leg syndrome, insomnia, etc.) in mariners, and there is a need for therapeutic strategies for improving sleep habits and for diagnosing and treating sleep disorders.

With respect to #2, even a paper cited by the Coast Guard (Lutzhoft et al., 2010) concluded that more research on split sleep schedules was needed, in particular, and in general, more research on crew schedules and fatigue management is needed since relatively few maritime studies have been performed. This latter point is particularly important since it would clearly be premature to mandate that crews work 7:7:5:5 or 8:8:4:4 rectangular watches when we are unaware of any published data (none cited in IV-L) that would indicate such a change from the industry standard 6:6:6:6 schedule would be an effective countermeasure for fatigue management.

Finally, since the Coast Guard in IV-L specifically requested "public comments on the report "Demonstration Project: Implementing the Crew Endurance Management System on Towing Vessels," we want to make clear that the CEMS demonstration project did not provide any data to support any changes in HOS or any endurance management standards. The fact that crews were followed in the winter before a CEMS program was initiated, and followed up in the summer after an educational program, precludes any evaluation of effectiveness of the CEMS program other than to say such a program was possible to implement. The CEMS

demonstration project aboard towing vessels in 2005 was just that—a "Demonstration Project" and not a scientific study.

E. Concluding Remarks

Prior to mandating any rule changes in work schedules in the maritime industry, the Coast Guard should base any recommendations on the scientific literature that: 1) explores anchor sleep/nap sleep strategies; 2) compares sleep times on different watch schedules where the total amount of sleep and work opportunities are equivalent; 3) evaluates the effectiveness of educational programs to change the culture of crews on board towing vessels such that sufficient sleep each day becomes a priority for crew management, safety and health; 4) documents why mariners do not obtain 7-8 hours of sleep per 24 hours, including evaluation of sleep habits and sleep disorders, especially sleep apnea, in a population of workers that follows a nationwide trend for increased obesity, diabetes and cardiovascular disease; and 5) evaluates effective strategies for the treatment of sleep disorders. Clearly, there is a need for more research and data that would support any rule changes in HOS or crew watch schedules, especially since there is evidence that some of the proposed work changes by the Coast Guard could lead to less sleep and more fatigue, and thus, negative consequences for required changes in HOS in the face of clear scientific data against such changes and/or the lack of scientific data to support their recommendations.

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G. FAST

In IV-L, the Coast Guard cites the FAST algorithm and produces nine figures (Figs 2-10) for assessing the effects of work and rest schedules on human health and performance. The Coast Guard is correct in stating that the scientific evidence shows that restricted sleep degrades performance, but there is no evidence in the FAST model that mariners will be able to obtain 7-8 hours of uninterrupted sleep on a 7:7:5:5 or 8:8:4:4 rectangular watch.

Fatigue Avoidance Scheduling Tool (FAST) is a fatigue-modeling program developed by Steve Hursh and others that has been used in the armed forces. A review of this program and several others was conducted in 2002 at a Fatigue and Performance Modeling Workshop. Several publications stemmed from this meeting and were published in an issue of Aviation, Space, and Environmental Medicine, Vol. 75, No. 3, Section II, March 2004. While it was agreed that these models provide useful information to predict fatigue levels, the point was made that further validation of these models is needed, including the SAFTE model on which the FAST is based. It is unclear whether the SAFTE model as presented in Figures 2-10 has been updated to include more recent findings in the literature on recovery from sleep loss and on performance during split sleep schedules (Mollicone et al., 2007; Mollicone et al., 2008).

Nine different sleep-wake schedules and two different work schedules were used to generate Figures 2-10 in IV-L. Only two of the modeled schedules resulted in maintenance of fatigue scores above critical levels (Figs 8 and 10 below). Unacceptable fatigue levels are indicated by a drop of daily fatigue below the dotted line; this line indicates that fatigue levels have reach a level that results in a performance impairment similar to that seen at a blood alcohol concentration of 0.05%. Both of these schedules required a total of 10.5 hours of sleep per 24-hour period with no overnight work. The work schedules were for a 7-hour work period during the day and a 5-hour work period in the evening (Fig 8) or 7-hour work period during the day but with an early start time and a 5-hour work period in the evening (Fig 10). Sleep data from either field or laboratory based studies indicate that it is unlikely that crew will be able to obtain 10.5 hours of sleep a day under this type of work schedule. Even under optimal conditions it is not typical for most people to sleep 10.5 hours each and every day. In a study of sleep during a 2-watch 7:7:5:5 schedule, we found that mariners spent about 8 hours in bed per day but only slept about 6.5 hours (Turek and Reid, unpublished results), not the 10.5 hours of sleep used in the FAST model Figures 8 and 10. Indeed, we found crewmembers on a 7:7:5:5 hour schedule had, on average, sleep durations of 3.5 hours in the morning and 2.5 hours in the evening. Other studies from the literature indicate that crews with two 8 hour rest periods per day (Sanquist et al., 1997) sleep approximately 6.5-6.8 hours per day and a study by Lutzhoft et al., 2010 reports that crew slept just over 6 hours a day when on a 4 on 8 off schedule. Given the findings from these studies it is unlikely that crews working 12 hours a day in a split 7:7:5:5

schedule will be able to get 10.5 hours of sleep each day. Indeed, we know of no data that would suggest that mariners on a 7:7:5:5 (total of 12 hours of sleep opportunity) rectangular watch schedule would obtain anywhere near the 10.5 hours of sleep needed in the FAST model to maintain fatigue scores above initial levels (Figs 8 and 10), and we fail to see how the FAST model (particularly Figs 8 and 10) relates to real-world sleep times on a 7:7:5:5 schedule. Overall, fatigue models can be useful tools in predicting fatigue, but these predictions are just that. When making regulations that impact an entire industry and the safety of the crew and the public, scientific data, and not generic models of fatigue, are necessary before any regulatory changes are mandated.

Figure 8 (From IV-L)
FAST – Watch Schedule Assessment
Work on Day Watch

Six and one-half hours of sleep during the night (0000-0630) prior to day watch and
Four hours of sleep (1430-1830) prior to evening watch.

Modeling sequence for each 24-hour day:
Sleep 0000-0630 - Leisure 0631-0659 - Work 0700-1400 - Leisure 1401-1429,
Sleep 1430-1830 - Leisure 1831-1859 - Work 1900-2400 - Leisure None,
Repeat sequence for 30 consecutive days.

Sleep quality:
Modeled with two brief interruptions (less than 1 minute) during each hour of sleep

Figure 10 (From IV-L)
FAST – Watch Schedule Assessment
Work on Day Watch

Four and one-half hours of sleep during the night (0000-0430) prior to day watch and
Six hours of sleep (1230-1830) prior to evening watch

Modeling sequence for each 24-hour day:
Sleep 0000-0430 - Leisure 0431-0459 - Work 0500-1200 - Leisure 1201-1229,
Sleep 1230-1830 - Leisure 1831-1859 - Work 1900-2400 - Leisure None,
Repeat sequence for 30 consecutive days.

Sleep quality:
Modeled with two brief interruptions (less than 5 minutes) during each hour of sleep

Appendix B
AWO Redline of Proposed Subchapter M and Related Regulatory Text

Amend 33 CFR 155.710(e) as follows:

(e) The operator or agent of each vessel to which this section applies shall verify to his or her satisfaction that the PIC of any transfer of fuel oil requiring a Declaration of Inspection--

(1) On each inspected vessel required by 46 CFR chapter I to have an officer aboard, except a towing vessel inspected under subchapter M of that chapter, holds a valid license or merchant mariner credential issued under 46 CFR chapter I, subchapter B, authorizing service as a master, mate, pilot, engineer, or operator aboard that vessel, or holds a valid merchant mariner's document or merchant Mariner credential endorsed as Tankerman-PIC; . . .

(5) On each towing vessel inspected under subchapter M of 46 CFR chapter I, either complies with the requirements of paragraph (e)(1) of this section or carries a letter satisfying the requirements of Sec. 155.715 and designating him or her as a PIC, unless equivalent evidence is immediately available aboard the vessel or at his or her place of employment.

Comment [JAC1]: Recommend addition for consistency with CG stated goal of not changing manning /credentialing requirements for towing vessels.

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PART 15--MANNING REQUIREMENTS

3. The authority citation for part 15 continues to read as follows:

Authority: 46 U.S.C. 2101, 2103, 3306, 3703, 8101, 8102, 8103, 8104, 8105, 8301, 8304, 8502, 8503, 8701, 8702, 8901, 8902, 8903, 8904, 8905(b), 8906 and 9102; and Department of Homeland Security Delegation No. 0170.1.

Sec. 15.501 [Amended].

4. In ~~Sec.~~section ~~-~~15.501(b), remove the word ``Emergency'' and add, in its place, the word ``emergency''.

5. Revise ~~Sec.~~ section 15.505 to read as follows:

Sec. 15.505 Changes in the certificate of inspection.

All requests for changes in manning as indicated on the certificate of inspection must be to:

(a) The Officer in Charge, Marine Inspection (OCMI) who last issued the certificate of inspection; or

(b) The OCMI conducting the inspection, if the request is made in conjunction with an inspection for certification.

Sec. 15.510 [Amended].

6. In ~~Sec.~~ section 15.510, remove the word ``therefrom''.

Sec. 15.520 [Amended].

7. In ~~Sec.~~ section 15.520(b), remove the word ``OCMI'' and add, in its place, the words ``Officer in Charge, Marine Inspection (OCMI)''.

Sec. 15.610 [Amended].

8. In ~~Sec.~~ section 15.610(b)(2), remove the number ``12'' and add, in its place, the word ``four''.

9. Add ~~Sec.~~ section 15.535 to subpart D to read as follows:

Sec. 15.535 Towing vessels.

(a) The requirements in this section for towing vessels apply to a towing vessel certificated under subchapter M of this chapter.

(b) Except as provided in this paragraph, every towing vessel of at least 8 meters (at least 26 feet) in length, measured from end to end over the deck (excluding sheer), must be under the direction and control of a person licensed as master or mate (pilot) of towing vessels or as master or mate of vessels of greater than 200 gross register tons holding either an endorsement on his or her license for towing vessels or a completed Towing Officer's Assessment Record (TOAR) signed by a designated examiner indicating that the officer is proficient in the operation of towing vessels. This does not apply to any vessel engaged in assistance towing, or to any towing vessel of less than 200 gross register tons engaged in exploiting offshore minerals or oil if the vessel has sites or equipment so engaged as its place of departure or ultimate destination.

(c) Any towing vessel operating in the pilotage waters of the Lower Mississippi River must be under the control of an officer who holds a first-class pilot's license or endorsement for that route, MMC officer endorsement for the Western Rivers, or who meets the requirements of either paragraph (c)(1) or (2) of this section as applicable:

(1) To operate a towing vessel with tank barges, or a tow of barges carrying hazardous materials regulated under part N or O of this subchapter, an officer in charge of the towing vessel must have completed at least 12 round trips over this route as an observer, with at least 3 of those trips during hours of darkness, and at least 1 round trip of the 12 within the last 5 years.

(2) To operate a towing vessel without barges, or a tow of uninspected barges, an officer in charge of the towing vessel must have completed at least four round trips over this route as an observer, with at least one of those trips during hours of darkness, and at least one round trip of the four within the last 5 years.

(c)Minimum manning for towing vessesl. On a towing vessel subject to inspection under subchapter M of this chapter:

Comment [JAC2]: Language omitted from current 15.610.

Comment [JAC3]: Per working group and TSAC recommendations.

(1) At least one licensed officer and one additional crewmember must be on duty at all times while the towing vessel is underway. These requirements shall be posted on the towing vessel's Certificate of Inspection.
(2) Additional manning shall be provided as documented in the Towing Safety Management System applicable to the towing vessel, taking into account the following factors: applicable law and regulation; number, size, and type of barges to be towed; towing route; safety of personnel, equipment, and environment; service in which the tow is engaged; functional duties required of crew in addition to navigation; configuration of towing vessel superstructure, deck, and engine room; extent of automation; size and power of equipment used; prevailing environmental and climatic conditions; and experience of crew.

Sec. 15.810(amended).

Revise 15.810(b) to read as follows:

(b) The minimum number of mariners holding a license or MMC officer endorsement as mate required to be carried on every inspected, self-propelled, seagoing and Great Lakes vessel, except a towing vessel inspected under subchapter M of this chapter, and every inspected, seagoing, passenger vessel must not be less than the following, except when reductions are authorized under paragraph (e) of this section:

Sec. 15.820(amended).

Revise 15.820(a(3) as follows:

(3) Inland (other than Great Lakes) vessels of 300 gross tons and over, except for towing vessels inspected under subchapter M of this chapter, if the OCMI determines that an individual with a license or the appropriate MMC officer endorsement responsible for the vessel's mechanical propulsion is necessary.

PART 136--CERTIFICATION

Subpart A--General

Sec.
136.100 Purpose.
136.105 Applicability.

[[Page 50005]]

136.110 Definitions.
136.112 Incorporation by reference.
136.115 Equivalents.
136.120 Special consideration.
136.130 ~~Options for obtaining certification of a towing vessel~~[Reserved]
136.140 ~~Application for a Certificate of Inspection (COI).~~[Reserved]
136.145 ~~Inspection for certification.~~[Reserved]
136.150 ~~Annual and periodic inspections.~~[Reserved]

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Comment [JAC4]: Amended for consistency with stated CG goal and TSAC recommendation of not changing manning requirements for towing vessels.

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Comment [JAC5]: Amendment to Chief Engineer requirements for consistency with CG goal and TSAC recommendation not to increase manning requirements for towing vessels.

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Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 136.100 Purpose.

This part sets out the applicability for subchapter M and describes the requirements for obtaining and renewing a Certificate of Inspection (COI).

Sec. 136.105 Applicability.

(a) This subchapter is applicable to all U.S.-flag towing vessels as defined in ~~Sec. 136.110~~section 136.110 engaged in pushing, pulling, or hauling alongside, except:

(1) A ~~vessel~~towing vessel less than 26 feet (8 meters) in length measured from end to end over the deck (excluding the sheer)~~, unless pushing, pulling, or hauling a barge that is carrying dangerous or hazardous materials~~;

(2) A ~~vessel~~towing vessel engaged in one or more of the following:

(i) A ~~vessel~~towing vessel used for assistance towing;

(ii) A ~~vessel~~towing vessel towing recreational vessels for salvage; or

(iii) A ~~vessel~~towing vessel transporting or assisting the navigation of recreational vessels within and between marinas and marina facilities, within a limited geographic area, as defined by the local Captain of the Port (COTP).

(3) Work boats operating exclusively within a worksite and performing intermittent towing within the worksite, including maneuvering a tank barge on and off of a drydock or cleaning dock;

(4) Seagoing towing vessels over 300 gross tons subject to the provisions of Subchapter I of this chapter;

Comment [JG6]: Many shipyards and similar facilities employ towing vessels of less than 26 feet to move tank barges short distance within the facility for cleaning, staging or repair. Such vessels are of a size that would prohibit physical compliance with the requirements of this subchapter.

(5) A ~~vessel~~towing vessel inspected under other subchapters of this chapter that may perform occasional towing;

(6) A public ~~vessel~~towing vessel that is owned or bareboat chartered and operated by the United States, or by a State or political subdivision thereof, or by a foreign nation, except when the ~~vessel~~towing vessel is engaged in commercial service.

(7) A ~~vessel~~towing vessel which has surrendered its Certificate of Inspection (COI) and is laid up, dismantled, or otherwise out of service; and

(8) A propulsion unit used for the purpose of propelling or controlling the direction of a barge where the unit is controlled from the barge, not normally manned, and not utilized as an independent ~~vessel~~towing vessel.

(b) A ~~vessel~~towing vessel that is otherwise exempt from inspection may request application of this part.

Sec. 136.110 Definitions.

ABS Rules means the standards developed and published by the American Bureau of Shipping regarding the design, construction and certification of commercial vessels.

Accepted Safety Management System means a safety management system deemed by the Coast Guard to be equivalent to the requirements of this subchapter.

Accommodation space means any:

(1) Messroom;
(2) Lounge;
(3) Sitting area;
(4) Recreation room;
(5) Quarters;
(6) Toilet space;
(7) Shower room;
(8) Galley;
(9) Berthing space;
(10) Clothing-changing room; and
(11) A similar space open to individuals.

Approved third party organization means a third party organization approved by the Coast Guard in accordance with part 139 of this subchapter.

Assistance towing means towing a disabled vessel for consideration.

Audit means a systematic, independent, and documented examination to determine whether activities and related results comply with ~~planned arrangements~~ the Towing Safety Management System (TSMS) and whether the~~se arrangements~~ TSMS is~~are~~ implemented effectively and ~~are~~is suitable to achieve stated objectives. This examination includes a thorough review of appropriate reports, documents, records and other objective evidence to verify compliance with applicable requirements.

(1) The audit may include, but is not limited to:
(i) Examining records;
(ii) Asking responsible persons how they accomplish specific tasks;
(iii) Observing persons performing required tasks;
(iv) Examining equipment to insure proper maintenance and operation; and

(v) Checking training records and work environments.

(2) The audit may be limited to random selection of a representative sampling throughout the system that presents the auditor with sufficient objective evidence of system compliance.

Berthing space means a space that is intended to be used for sleeping and is provided with installed bunks and bedding.

Bollard pull means the maximum static pulling force that a towing vessel can exert on another vessel or an object when its propulsion engines are applying thrust at maximum horsepower.

Buoyant apparatus is flotation equipment(other than lifeboats, liferafts, and personal flotation devices) designed to support a specified number of persons in the water, and of such construction that it retains its shape and properties and requires no adjustment or preparation for use.

Change in ownership means any change resulting in a change in the day-to-day operational control of an approved third party organization that conducts audits and surveys, or a change that results in a new entity holding more than 50 percent of the ownership of the approved third party organization.

Class Rules means the standards developed and published by a classification society regarding the design, construction and certification of commercial vessels.

Class II piping systems means those piping systems identified as class II in Table 56.04-2 of Subchapter F of this Chapter.

Coastwise means a route that is not more than 20 nautical miles offshore on any of the following waters:

(1) Any ocean;

(2) The Gulf of Mexico;

(3) The Caribbean Sea;

(4) The Bering Sea;

(5) The Gulf of Alaska; or

(6) Such other similar waters as may be designated by a Coast Guard District Commander.

Cold water means water where the monthly mean low water temperature is normally 15 degrees Celsius (59 degrees Fahrenheit) or less.

Conflict of Interest means a conflict between an individual's or an organization's private interests and the interests of another party with whom they are providing a service to or for, or in a capacity which serves the public good.

Consideration means an economic benefit, inducement, right, or profit

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including pecuniary payment accruing to an individual, person, or entity, but not including a voluntary sharing of the actual expenses of the voyage, by monetary contribution or donation of fuel, food, beverage, or other supplies.

Crewmember means all persons carried on board the ~~vessel~~towing vessel to provide navigation and maintenance of the ~~vessel~~towing vessel, its machinery, systems, and arrangements essential for propulsion and safe navigation, maintaining the tow, or to provide services to other persons aboard and shall not be construed as controlling the status of any person carried on board for purposes of 46 U.S.C. 30104.

Deficiency means a failure to meet minimum requirements of the vessel inspection laws or regulations.

Disabled vessel means a vessel that needs assistance, whether docked, moored, anchored, aground, adrift, or under way, but does not mean a barge or any other vessel not regularly operated under its own power.

~~Document of Compliance means a certificate issued, pursuant to this subchapter, by an approved third party organization to the owner or managing operator of a towing vessel, which signifies that the owner or managing operator complies with the Towing Safety Management System (TSMS) applicable to the towing vessels which it operates.~~

Downstreaming means approaching a moored barge from upstream and attempting to land~~ing~~ with tow knees square against the upstream end of the barge.

Drydock means hauling out a ~~vessel~~towing vessel or placing a ~~vessel~~towing vessel in a drydock or slipway for an examination of all accessible parts of the ~~vessel~~towing vessel's underwater body and all through-hull fittings and appurtenances.

Element means a component of the safety management system, including policies, procedures, or documentation required to ensure a functioning towing safety management system.

Engine room means the enclosed area where any main-propulsion engine is located. It comprises all deck levels within that area.

Essential system means a system that is required to ensure a ~~vessel~~towing vessel's survivability, maintain safe operation, control the ~~vessel~~towing vessel, or ensure safety of on-board personnel, including systems for:

(1) Detection or suppression of fire;

(2) Emergency dewatering or ballast management;

(3) Navigation;

(4) Internal and external communication;

(5) Vessel control, including propulsion, steering, maneuverability and their essential auxiliaries (e.g., lube oil, fuel oil, cooling water pumps, machinery space ventilation);

(6) Emergency evacuation and abandonment;

(7) Lifesaving;

(8) Control of a tow; and

(9) Any other marine engineering system identified in an approved ~~Towing Safety Management System (~~TSMS~~)~~ identified by the cognizant Officer in Charge, Marine Inspection (OCMI) as essential to the ~~vessel~~towing vessel's survivability, maintaining safe operation, controlling the ~~vessel~~towing vessel, or ensuring safety of onboard personnel.

Excepted towing vessel means a towing vessel that is:

(1) Used solely for any one or a combination of the following services:

(i) Within a limited geographic area, ~~such as a fleeting area for barges or a commercial facility,~~ and used for restricted service, such as making up or breaking up larger tows, moving vessels on and off drydocks or to and from cleaning docks, or shifting vessels within the limited geographic area;

(ii) For harbor-assist;

(iii) For response to emergency or pollution;

(iv) ~~When t~~Transiting from ~~a~~the port, harbor, or limited geographic area of operation to a shipyard for repairs or for periodic survey, drydock examination, internal structural examination or audit required by

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this subchapter, or for repositioning to another port, harbor, or limited geographic area; or

(2) ~~Exempted~~ Excepted by the cognizant Officer in Charge, Marine Inspection (OCMI).

Existing towing vessel means a towing vessel, subject to inspection under this ~~subchapter, that~~subchapter, which is not a new towing vessel, as defined in this section.

External Audit means an audit conducted by a party with no direct affiliation to the ~~vessel~~towing vessel or owner or managing operator being audited.

Fixed fire-extinguishing system means:

(1) A carbon dioxide system that satisfies 46 CFR subpart 76.15 and is approved by the Coast Guard;

(2) A manually operated, clean agent system that satisfies National Fire Protection Association (NFPA) Standard 2001 (incorporated by reference in ~~Sec.~~section 136.112 of this subchapter) and is approved by the Coast Guard; or

(3) A manually operated, water mist system that satisfies NFPA Standard 750 (incorporated by reference in ~~Sec. 136.112~~section 136.112 of this part) and is approved by the Coast Guard.

Fleeting area means a limited geographic area where individual barges are moored or assembled to make a tow or wait to load or unload cargo. The barges are not in transport, but are temporarily marshaled and waiting for pickup by different ~~vessel~~towing vessels that will transport them to various destinations.

Fully attended means that a person who is appropriately trained to monitor and operate engineering equipment is located in the engine room at all times while the ~~vessel~~towing vessel is underway.

Galley means a space containing appliances with cooking surfaces that may exceed 121 degrees Celsius (250 degrees Fahrenheit) such as ovens, griddles, and deep fat fryers.

Great Lakes means a route on the waters of any of the Great Lakes and of the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, and west of a line along the 63rd meridian from Anticosti Island to the north shore of the St. Lawrence River.

Gross Tons means the gross ton measurement of the ~~vessel~~towing vessel under 46 U.S.C. chapter 145, Regulatory Measurement. For a ~~vessel~~towing vessel measured under only 46 U.S.C. chapter 143, Convention Measurement, the ~~vessel~~towing vessel's gross tonnage measured under 46 U.S.C. chapter 143 is used to apply all thresholds expressed in terms of gross tons.

Harbor of Safe Refuge means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a ~~vessel~~towing vessel can navigate and safely moor. The suitability of a location as a harbor of safe refuge will be determined by the cognizant Officer in Charge, Marine Inspection, and varies for each ~~vessel~~towing vessel, dependent on the ~~vessel~~towing vessel's size, maneuverability, and mooring gear.

Harbor-assist means the use of a towing vessel during maneuvers to dock, undock, shift, escort, push, pull, tow, moor, ~~or~~ unmoor, stand by or otherwise assist other vessels as directed within a port, harbor, or limited geographic area. For purposes of this definition, a harbor includes the navigable inland waters of a port inside the Boundary Line. ~~a vessel or to escort a vessel with limited maneuverability.~~

Comment [JAC7]: The TSMS applicable to the towing vessel should identify any additional equipment that may needed for safe operation during such transit.

Horsepower means the horsepower stated on the Certificate of Inspection (COI), which is the sum of the manufacturer's listed brake horsepower for all installed propulsion engines.

Independent means the equipment is arranged to perform its required function regardless of the state of operation, or failure, of other equipment.

Inflatable buoyant apparatus is flotation equipment that depends on inflated compartments for buoyancy and is designed to support a specified number of persons completely out of the water.

Inland Waters means the navigable waters of the United States shoreward of the Boundary Lines as described in 46 CFR part 7, excluding the Great Lakes and, for towing vessels, excluding the Western Rivers.

Internal Audit means an audit that is conducted by a party which has a direct affiliation to the ~~vessel~~towing vessel or owner or managing operator being audited.

International Voyage means a voyage between a country to which SOLAS applies and a port outside that country. A country, as used in this definition, includes every territory for the international relations of which a contracting government to the convention is responsible or for which the United Nations is the administering authority. For the U.S., the term ``territory'' includes the Commonwealth of Puerto Rico, all possessions of the U.S., and all lands held by the U.S. under a protectorate or mandate. For the purposes of this subchapter, ~~vessel~~towing vessels are not considered as being on an ``international voyage'' when solely navigating the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap des Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd meridian.

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Lakes, bays, and sounds means a route on any of the following waters:

(1) A lake other than the Great Lakes;

(2) A bay;

(3) A sound; or

(4) Such other similar waters as may be designated by the cognizant Coast Guard District Commander.

Length means the horizontal distance measured from end to end over the deck, excluding the sheer. Fittings and attachments are not included in the length measurement.

Limited coastwise means a route that is not more than 20 nautical miles from a harbor of safe refuge.

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Limited geographic area means a local area of operation, usually within a single harbor or port. The local Captain of the Port (COTP) determines limited geographic areas for each zone.

Machinery space means any enclosed space that either contains an installed, internal combustion engine, machinery, or systems that would raise the ambient temperature above 45 degrees Celsius in all environments the ~~vessel~~towing vessel operates in.

Major conversion means a conversion of a ~~vessel~~towing vessel that changes the towing vessel such that it is essentially a new towing vessel~~, as determined by the Coast Guard,~~ by (i) substantially ~~changes~~ changing the dimensions ~~or carrying capacity~~ of the ~~vessel~~towing vessel, ~~changes~~ (ii) substantially changing the type of ~~vessel~~towing vessel, (iii) substantially ~~prolongs~~ prolonging the life of the ~~vessel~~towing vessel

(other than the replacement of propulsion engines), or (iv) making otherwise substantial changes to the vesseltowing vessel which, as determined by the Coast Guard, render it essentially a new towing vessel such that it is essentially a new vessel.

Major non-conformity means an identifiable deviation which poses a serious threat to personnel, vessel safety, or a serious risk to the environment, and requires immediate corrective action, including the lack of effective and systematic implementation of a requirement of the Towing Safety Management System (TSMS)TSMS.

Managing operator means an organization or person, such as the manager or the bareboat charterer of a vesseltowing vessel, who has assumed the responsibility for operation of the vesseltowing vessel from the ship owner and who, on assuming responsibility, has agreed to take over all the duties and responsibilities imposed by this subchapter.

New towing vessel means a towing vessel, subject to inspection under this subchapter, that:

(1) Was contracted for, or the keel which was laid on or after, [EFFECTIVE DATE OF FINAL RULE];

(2) Underwent a major conversion that was initiated on or after [EFFECTIVE DATE OF FINAL RULE]; or

(3) Is built without a contract, the keel laying date will be used to determine applicability.

Non-conformity means a situation where objective evidence indicates a non-fulfillment of a specified requirement.

Objective evidence means quantitative or qualitative information, records, or statements of fact pertaining to safety or to the existence and implementation of a safety management system element, which is based on observation, measurement, or testing that can be verified. This may include, but is not limited to towing gear equipment certificates and maintenance documents, training records, repair records, Coast Guard documents and certificates, surveys, or class society reports or records of an approved third party organization.

Oceans means a route that is more than 20 nautical miles offshore on any of the following waters:

(1) Any ocean;

(2) The Gulf of Mexico;

(3) The Caribbean Sea;

(4) The Bering Sea;

(5) The Gulf of Alaska; or

(6) Such other similar waters as may be designated by the cognizant Coast Guard District Commander.

Officer in Charge, Marine Inspection (OCMI) means an officer of the Coast Guard designated as such by the Coast Guard and who, under the direction of the Coast Guard District Commander, is in charge of a marine inspection zone, described in part 3 of this chapter, for the performance of duties with respect to the inspection, enforcement, and administration of vessel safety and navigation laws and regulations. The ``cognizant OCMI'' is the OCMI who has immediate jurisdiction over a vesseltowing vessel for the purpose of performing the duties previously described.

Oil or hazardous materials in bulk, as used in this subchapter, means that the towing vessel tows, pushes, or hauls alongside tank barge(s) certificated under subchapters D or O of this chapter.

Operating station means the principal steering station on the ~~vessel~~towing vessel, or the barge being towed or pushed, from which the ~~vessel~~towing vessel is normally navigated.

Owner means the owner of a ~~vessel~~towing vessel, as identified on the ~~vessel~~towing vessel's certificate of documentation or state registration.

Policy means a specific statement of principles or guiding philosophy that demonstrates a clear commitment by management; a statement of values or intent that provides a basis for consistent decision making.

Power and lighting circuit means a branch circuit as defined in NFPA 70-2002-National Electric Code (NEC) (incorporated by reference in ~~Sec.~~section 136.112 of this subchapter) Article 100 that serves any essential system, a distribution panel, lighting, motor or motor group, or group of receptacles. Where multiple loads are served, the circuit is considered to be the conductor run that will carry the current common to all the loads. ``Power limited circuit'' conductors under Article 725 of the NEC and ``instrumentation'' conductors under Article 727 of the NEC are not considered to be power and lighting circuits.

Pressure vessel means a closed tank, cylinder or vessel containing gas, vapor or liquid, or a combination thereof, under pressure.

Procedure means a specification of a series of actions, acts, or operations which must be executed in the same manner in order to achieve a uniform approach to compliance with applicable policies.

Propulsor means a device (e.g., propeller, water jet) which imparts force to a column of water in order to propel a ~~vessel~~towing vessel, together with any equipment necessary to transmit the power from the propulsion machinery to the device (e.g., shafting, gearing, etc.).

Recognized Classification Society means the American Bureau of Shipping (ABS) or other classification society recognized by Coast Guard in accordance with Part 8 of this chapter.

Recognized hazardous conditions means conditions that are:

(1) Generally known among persons in the towing industry as causing, or likely to cause, death or serious physical harm to persons exposed to those conditions; and

(2) Routinely controlled in the towing industry.

Rivers means a route on any river, canal, or other similar body of water designated by the cognizant Officer in Charge, Marine Inspection.

~~Safety Management Certificate means a certificate issued, pursuant to this subchapter, by an approved third party organization to a towing vessel, which signifies that the towing vessel operates in accordance with the Towing Safety Management System (TSMS) applicable to the towing vessel.~~

Safety Management System means a structured and documented system enabling the owner or managing operator and ~~vessel~~towing vessel personnel to effectively implement the owner or managing operator's safety and environmental protection policies and that is routinely exercised and audited in a way that ensures the policies and procedures are incorporated into the daily operation of the ~~vessel~~towing vessel.

~~Salt water means~~

Skiff means a small auxiliary boat carried onboard a towing vessel.

SOLAS means the International Convention for Safety of Life at Sea, 1974, as amended.

Survey means an examination of the ~~vessel~~towing vessel, its systems and equipment to verify compliance with applicable regulations, statutes, conventions, and treaties.

Terminal gear means the additional equipment or appurtenances at either end of the hawser or tow cable that connect the towing vessel and tow together and may include such items as

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thimbles, chafing gear, shackles, pendants and bridles.

~~Third-party organization means an organization approved by the Coast Guard to conduct independent verification that Towing Safety Management Systems or towing vessels comply with applicable requirements contained in this subchapter.~~

Tow means a vessel or vessels being moved, by pulling, pushing, or hauling along side, by ~~combination of~~ a towing vessel ~~and one or more barges or a vessel not under its own power~~.

Towing Company Safety Management System Certificate (TCSMSC) ~~Document of Compliance~~ means a certificate issued, pursuant to this subchapter, by an approved third party organization to the owner or managing operator of a towing vessel, which signifies that the owner or managing operator complies with the Towing Safety Management System (TSMS) applicable to the towing vessels which it operates.

Towing Safety Management System (TSMS) mean a Safety Management System meeting the requirements of part 138 of this subchapter.

Towing Vessel Safety Management System ~~Safety Management~~ Certificate (TVSMSC) means a certificate issued, pursuant to this subchapter, by an approved third party organization to a towing vessel, which signifies that the towing vessel operates in accordance with the Towing Safety Management System (TSMS) applicable to the towing vessel.

Towing vessel means a commercial vessel engaged in or intending to engage in the service of pulling, pushing, or hauling along side, or any combination of pulling, pushing, or hauling along side.

Towing Vessel Record (TVR) means a book, notebook, or electronic record used to document events required by this subchapter.

~~Travel time means the time that it takes for a crewmember to proceed to the towing vessel, inclusive of periods spent on commercial and non commercial carriers, transferring between carriers, layovers, and other delays.~~

Unsafe practice means a habitual or customary action or way of doing something which creates significant risk of harm to life, property, or the marine environment; or which contravenes a recognized standard of care contained in law, regulation, applicable international convention or international, national or industry consensus standard.

Vessel includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

Warm water means water where the monthly mean low water temperature is normally more than 15 degrees Celsius (59 Fahrenheit).

Western Rivers means the Mississippi River, its tributaries, South Pass, and Southwest Pass, to the navigational demarcation lines dividing the high seas from harbors, rivers, and other inland waters of the United States, and the Port Allen-Morgan City Alternate Route, and that part of the Atchafalaya River above its junction with the Port Allen-Morgan City Alternate Route including the Old River and the Red River, and those

Comment [JG8]: Somewhat redundant with "approved third party organization" and inconsistent with actual usage throughout the subchapter.

Comment [JAC9]: Every usage of this term (as a noun) in the subchapter refers only to the vessels being towed, not to both the towing vessel and vessels being towed.

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Comment [JAC10]: This term is not used anywhere else in the subchapter.

waters specified in 33 CFR 89.25 and 89.27 and such other, similar waters as are designated by the Captain of the Port.

Workboat means a vessel that pushes, pulls, or hauls alongside equipment including dredging, construction, maintenance, ~~or~~ and repair equipment and vessels undergoing cleaning or repair within a worksite.

Worksite means an area ~~specified by the cognizant Officer in Charge, Marine Inspection (OCMI)~~ within which workboats are operated over short distances for dredging, construction, maintenance, or repair work, ~~and may include~~ including shipyards, owner's yards, ~~or~~ lay-down areas used by marine construction projects and other areas specified by the cognizant Officer in Charge, Marine Inspection (OCMI).

Work space means any area on the ~~vessel~~towing vessel where the crew may be present while on duty and performing their assigned tasks.

Comment [JG11]: The proposed definition failed to include all of this definition, copied from 33 CFR 164.70. It has been restored to preserve the applicability of the navigation safety regulations also incorporated into this subchapter.

Sec. 136.112 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federalregulations/ibr_locations.html. Also, it is available for inspection at U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street, SW., Washington, DC 20593-0001, and is available from the sources listed in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101	
NFPA 750--Standard on Water Mist Fire Protection Systems, 2006	136.110
NFPA 2001--Standard on Clean Agent Fire Extinguishing Systems, 2008	136.110
NFPA 70-2002-National Electric Code (NEC), 2002	136.110
International Maritime Organization (IMO), 4, Albert Embankment, London, SE1 7SR, United Kingdom	
Resolution A. 520(13), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements, 1983	136.115

Sec. 136.115 Equivalents.

(a) The Coast Guard may approve any arrangement, fitting, appliance, apparatus, equipment, calculation, information, or test, which provides a level of safety equivalent to that established by specific provisions of this subchapter. Requests for approval must be submitted to the Coast Guard via the cognizant Officer in Charge, Marine Inspection (OCMI). If necessary, the Marine Safety Center may require engineering evaluations and tests to demonstrate the equivalence of the substitute.

(b) The Coast Guard may accept compliance with the provisions of the International Convention for Safety of Life at Sea (SOLAS), 1974, as amended, applicable to the ~~vessel~~towing vessel's size and route as an equivalent to compliance with applicable requirements of this subchapter. Requests for a determination of equivalency for a particular ~~vessel~~towing vessel must be submitted to the Marine Safety Center via the cognizant OCMI.

(c) The Coast Guard may approve a novel lifesaving appliance or arrangement as an equivalent if it has performance characteristics at least equivalent to the appliance or arrangement required under this subchapter and has been evaluated and tested under International Maritime Organization (IMO) Resolution A.520(13) (incorporated by reference by ~~Sec.~~section 136.112 of this part), Code of Practice for the Evaluation, Testing and Acceptance of Prototype Novel Life-Saving Appliances and Arrangements.

(d) The Coast Guard may accept alternative compliance arrangements in lieu of specific provisions of the ~~Towing Safety Management System (TSMS)~~TSMS for the purpose of determining that an equivalent safety management system is in place onboard a ~~vessel~~towing vessel. The Coast Guard may consider the size and corporate structure of a ~~vessel~~towing vessel's management when determining the acceptability of an equivalent system. Requests for determination of equivalency must be submitted to Coast Guard via the cognizant OCMI.

(e) Alternate compliance arrangements must be documented within the TSMS applicable to the ~~vessel~~towing vessel.

Sec. 136.120 Special consideration.

Based on review of relevant information and the ~~Towing Safety Management System~~TSMS applicable to the ~~vessel~~towing vessel, the cognizant Officer in Charge, Marine Inspection (OCMI) who issues the Certificate of Inspection may give

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special consideration to authorizing departures from the specific requirements, when unusual circumstances or arrangements warrant such departures and an equivalent level of safety is provided.

Sec. 136.130 ~~Options for obtaining certification of a towing vessel.~~[Reserved]

~~(a) TSMS or annual Coast Guard inspections. This subchapter provides two options for obtaining a Certificate of Inspection for a towing vessel.~~

Comment [JG12]: Both the NTSB and TSAC have strongly recommended that each towing vessel subject to this subchapter be operated under a Coast Guard-approved TSMS. The October 20, 2011 TSAC report on the NPRM reaffirms TSAC's support for a TSMS requirement for all towing vessels subject to Subchapter M as the foundation of the new inspection regime.

~~The first option is annual inspection of the towing vessel by the Coast Guard, as discussed in Sec. Sec. 136.150 through 136.165, part 137, and parts 140 through 144. The second option is to comply with the requirements for use of a towing safety management system (TSMS) and for use of approved third parties, as discussed in Sec. 136.210 and parts 137 through 144 of this subchapter. Regardless of the option chosen, the Coast Guard is responsible for issuing a towing vessel Certificate of Inspection and may board a vessel at any time to verify compliance and take appropriate action. An owner or operator choosing the annual inspection option under Sec. Sec. 136.150 through 136.170 may use a management system, vessel operations manual, or logbook to meet this subchapter's recordkeeping requirements.~~

~~(b) Specifying option. When submitting an application for a Certificate of Inspection, the owner or operator must specify which option he or she chooses for each particular towing vessel. Owners or operators may choose separate options for separate vessels within their fleet.~~

~~(c) Changing option. Requests to change options during the period of validity of an existing Certificate of Inspection must be accompanied by a new application to the OCMI for a new Certificate of Inspection. If the requirements for the new option are met, the OCMI will issue the vessel a new Certificate of Inspection.~~

~~(d) Drydock examinations. The option chosen for obtaining a vessel's Certificate of Inspection does not impact the frequency of required drydock examinations. Underwater inspections in lieu of a drydock (UWILD) can be used to obtain a Certificate of Inspection regardless of which option is chosen.~~

Sec. 136.140 ~~Application for a Certificate of Inspection (COI).~~ [Reserved]

~~Owners and operators must submit a written application for an inspection for certification to the cognizant OCMI. To renew a Certificate of Inspection (COI), owners and operators must submit an application at least 30 days before the expiration of the towing vessel's current certificate. Form CG-3752, Application for Inspection of U.S. Vessel, must be submitted to the OCMI at or nearest to the port where the vessel is located. When renewing a COI, the owner or operator must schedule an inspection for certification within the 3 months before the expiration date of the current COI.~~

Sec. 136.145 ~~Inspection for certification.~~ [Reserved]

~~(a) Frequency of inspections. After receiving an application for inspection, the OCMI will inspect a towing vessel located in his or her jurisdiction at least once every 5 years. The OCMI must ensure that every towing vessel is of a structure suitable for its intended route. If the OCMI deems it necessary, he or she may direct the vessel to be put in motion and may adopt any other suitable means to test the towing vessel and its equipment.~~

~~(b) Nature of inspections. The inspection for certification will include an inspection of the structure, pressure vessels, machinery and equipment. The inspection will ensure that the vessel is in satisfactory~~

~~condition and fit for the service for which it is intended, and that it complies with the applicable regulations for such vessels. It will include inspections of the structure, pressure vessels and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire detecting and extinguishing equipment, pilot boarding equipment, and other equipment. The inspection will also determine that the vessel is in possession of a valid certificate issued by the Federal Communications Commission, if required. The inspector will also examine the vessel's lights, means of making sound signals, and distress signals, to ensure that they comply with the requirements of the applicable statutes and regulations. The inspector will also examine the vessel's pollution prevention systems and procedures.~~

~~(c) Time of issuance of Certificate of Inspection. The OCMI will issue a vessel a new Certificate of Inspection upon completing the inspection for certification.~~

Sec. 136.150 ~~Annual and periodic inspections.~~[Reserved]

~~(a) Annual inspection. A towing vessel subject to subchapter M and choosing the Coast Guard option, or required to have the Coast Guard option, must undergo an annual inspection within 3 months before or after each anniversary date, except as specified in paragraph (b) of this section.~~

~~(1) Owners and operators must contact the cognizant OCMI to schedule an inspection at a time and place which he or she approves. No written application is required.~~

~~(2) Annual inspections will be similar to the inspection for certification but will cover less detail unless the cognizant marine inspector finds deficiencies or determines that a major change has occurred since the last inspection. If the cognizant marine inspector finds deficiencies or that a major change to the vessel has occurred, he or she will conduct a more detailed inspection to ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If the vessel passes the annual inspection, the marine inspector will endorse the vessel's current Certificate of Inspection.~~

~~(3) If the annual inspection reveals deficiencies in a vessel's maintenance, the owner or operator must make any or all repairs or improvements within the time period specified by the OCMI.~~

~~(4) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.~~

~~(b) Periodic inspection. If an owner or operator chooses the Coast Guard inspection option, his or her vessel must undergo a periodic inspection within 3 months before or after the second or third anniversary of the date of the vessel's Certificate of Inspection. This periodic inspection will take the place of an annual inspection.~~

~~(1) Owners and operators must contact the cognizant OCMI to schedule an inspection at a time and place the OCMI approves. No written application is required.~~

~~(2) The scope of the periodic inspection is the same as that for the inspection for certification, as specified in Sec. 136.145. The OCMI will ensure that the vessel is in satisfactory condition and fit for the service for which it is intended. If the vessel passes the periodic~~

~~inspection, the marine inspector will endorse the vessel's current Certificate of Inspection.~~

~~(3) If the periodic inspection reveals deficiencies in a vessel's maintenance, the owner or operator must make any or all repairs or improvements within the time period specified by the OCMI.~~

~~(4) Nothing in this subpart limits the marine inspector from conducting such tests or inspections he or she deems necessary to be assured of the vessel's seaworthiness.~~

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Sec. 136.165 ~~Certificate of Inspection: conditions of validity.~~[Reserved]

~~To maintain a valid Certificate of Inspection, an owner or operator who chooses the Coast Guard option must complete the annual and periodic inspections within the periods specified in Sec. 136.150(a) and (b), and the cognizant OCMI must endorse the vessel's Certificate of Inspection.~~

Sec. 136.170 ~~Compliance for the Coast Guard option.~~[Reserved]

~~All owners or managing operators of more than one towing vessel required to have a Certificate of Inspection (COI) by this subchapter and choosing the Coast Guard inspection option, must ensure that each vessel under their ownership or control is issued a valid Certificate of Inspection (COI) according to the following schedule:~~

~~(a) Within 3 years of the effective date of this subchapter, 25 percent of the towing vessels must have onboard valid COIs;~~

~~(b) Within 4 years of the effective date of this subchapter, 50 percent of the towing vessels must have onboard valid COIs;~~

~~(c) Within 5 years of the effective date of this subchapter, 75 percent of the towing vessels must have onboard valid COIs; and~~

~~(d) Within 6 years of the effective date of this subchapter, 100 percent of the towing vessels must have onboard valid COIs.~~

Sec. 136.175 Approved equipment.

Where equipment in this subchapter is required to be of an approved type, such equipment requires the specific approval of the Coast Guard. A listing of approved equipment and materials may be found online at http://cgmix.uscg.mil/equip/default.aspx. Each Officer in Charge, Marine Inspection (OCMI) may be contacted for information concerning approved equipment and materials.

Sec. 136.180 Appeals.

Any person directly affected by a decision or action taken under this subchapter, by or on behalf of the Coast Guard, may appeal in accordance with ~~Sec.~~section 1.03 in subchapter A of this chapter.

Subpart B--Certificate of Inspection

Sec. 136.200 Certificate required.

(a) A towing vessel may not be operated without having onboard a valid Certificate of Inspection (COI) issued by the U.S. Coast Guard.

(b) Each towing vessel certificated under the provisions of this subchapter must be in full compliance with the terms of the COI.

(c) If necessary to prevent delay of the ~~vessel~~towing vessel, a temporary COI may be issued to a towing vessel pending the issuance and delivery of the regular COI. The temporary COI must be carried in the same manner as the regular COI and is equivalent to the regular COI that it represents.

(d) A towing vessel on a foreign voyage between a port in the United States and a port in a foreign country, whose COI expires during the voyage, may lawfully complete the voyage without a valid COI provided the voyage is completed within 30 days of expiration and the certificate did not expire within 15 days of sailing on the foreign voyage from a U.S. port.

Sec. 136.203 Compliance ~~for the TSMS option~~schedule.

All owners or managing operators of more than one towing vessel required to have a Certificate of Inspection (COI) by this subchapter must ensure that each ~~vessel~~towing vessel under their ownership/control is issued a valid Certificate of Inspection (COI) according to the following schedule:

(a) Within 1 year of issuance of the ~~Towing Safety Management System (TSMS)~~Towing Company Safety Management System ~~TSMS~~ Certificate (TCSMSC) under ~~Sec.~~section 138.305 of this subchapter, 25 percent of the towing vessels under their ownership/control must have onboard valid COIs;

(b) Within 2 years of issuance of the ~~TSMS Certificate~~TCSMSC under ~~Sec.~~section 138.305 of this subchapter, 50 percent of the towing vessels under their ownership/control must have onboard valid COIs;

(c) Within 3 years of issuance of the ~~TSMS Certificate~~TCSMSC under ~~Sec.~~section 138.305 of this subchapter, 75 percent of the towing vessels under their ownership/control must have onboard valid COIs; and

(d) Within 4 years of issuance of the ~~TSMS Certificate~~TCSMSC under ~~Sec.~~section 138.305 of this subchapter, 100 percent of the towing vessels under their ownership/control must have onboard valid COIs.

Sec. 136.205 Description.

A towing vessel's Certificate of Inspection describes the ~~vessel~~towing vessel, route(s) that it may travel, minimum manning requirements, minimum safety equipment carried, horsepower, and other information pertinent to the ~~vessel~~towing vessel's operations as determined by the Officer in Charge, Marine Inspection.

Sec. 136.210 Obtaining or renewing a Certificate of Inspection (COI).

(a) A Certificate of Inspection (COI) is obtained or renewed through the U.S. Coast Guard by making application to the cognizant Officer in Charge, Marine Inspection (OCMI) of the marine inspection zone in which the towing vessel is principally operated, or in which the owner or managing operator maintains management offices.

(b) The following documentation must be submitted:

(1) A completed Form CG 3752, ``Application for Inspection of U.S. Vessel'';

(2) Objective evidence that the owner or managing operator and ~~vessel~~towing vessel are in compliance with the ~~Towing Safety Management System (TSMS)~~TSMS requirements of part 138 of this subchapter~~ if a TSMS is applicable to the vessel~~;

(3) For initial certification--

(i) Objective evidence that the ~~vessel~~towing vessel's structure and stability, and essential systems comply with the applicable requirements contained in this subchapter for the intended route and service. This objective evidence may be in the form of a report issued by an ~~approved third party~~approved third party organization or other means acceptable to the Coast Guard; and

(ii) ~~Vessel~~Towing vessel particular information.

(4) ~~For vessels utilizing the TSMS option, o~~Objective evidence that the ~~vessel~~towing vessel is equipped, maintained, and surveyed in compliance with ~~Sec. Sec.~~sections 137.200 and 137.300 of this subchapter; and

(5) A description of any substantial modifications to the original design and construction of the ~~vessel~~towing vessel.

(c) A towing vessel currently classed by a recognized classification society will be deemed to be in compliance with the design, construction, stability, equipment, and survey requirements of this subchapter.

(d) A towing vessel with a valid load line certificate issued in accordance with Subchapter E of this chapter may be deemed in compliance with the structural, drydocking, and stability requirements of this subchapter. The frequency of drydockings must meet the standards set forth in ~~Sec.~~section 137.310 of this subchapter.

(e) A towing vessel with a valid International Safety Management Code certificate issued by a recognized classification society will be deemed in compliance with the TSMS requirements of this subchapter.

Sec. 136.215 Period of validity.

(a) A Certificate of Inspection (COI) for a towing vessel is valid for 5 years from the date of issue.

(b) A COI is invalid upon the expiration or revocation of the owner or managing operator's ~~Towing Safety Management System~~~~TSMS~~Towing Company Safety Management System Certificate (TCSMSC) or International Safety Management Code Certificate.

(c) A COI may be suspended and withdrawn or revoked by the cognizant Officer in Charge, Marine Inspection at any time for noncompliance with the requirements of this subchapter.

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Sec. 136.220 Posting.

Comment [JG13]: In this electronic age, this arcane requirement for framing under glass should be replaced with a reasonable and practical requirement to maintain a correct copy of the COI in a safe location from which it is readily available to the master, crew, approved third party or Coast Guard.

(a) The original or a true and correct copy of the Certificate of Inspection (COI) must be safely maintained ~~framed under glass or other transparent material and posted in a conspicuous place~~ onboard the towing vessel or ~~.~~

~~(b) If posting is impractical, such as in an open boat, the COI must~~ be ~~kept onboard in a weathertight container and~~ readily available at the offices of the owner or managing operator.

Sec. 136.225 Temporary certificate.

If necessary to prevent delay of the towing vessel, a temporary Certificate of Inspection (COI), Form CG-854, may be issued by the cognizant Officer in Charge, Marine Inspection (OCMI), pending the issuance and delivery of the regular COI. Such temporary COI must be ~~carried~~maintained in the same manner required ~~as~~for the regular COI in section 136.220 of this subpart.

Sec. 136.230 Routes permitted.

(a) The area of operation for each towing vessel and any necessary operational limits are determined by the cognizant Officer in Charge, Marine Inspection (OCMI) and recorded on the ~~vessel~~towing vessel's Certificate of Inspection (COI). Each area of operation, referred to as a route, is described on the COI under the major headings ``Oceans,'' ``Coastwise,'' ``Limited Coastwise,'' ``Great Lakes,'' ``Lakes, Bays, and Sounds,'' or ``Rivers,'' as applicable. Further limitations imposed or extensions granted are described by reference to bodies of waters, geographical points, distances from geographical points, distances from land, depths of channel, seasonal limitations, and similar factors.

(b) Operation of a towing vessel on a route of lesser severity than those specifically described or designated on the COI is permitted unless expressly prohibited on the COI. The general order of severity of routes is: Oceans; coastwise; limited coastwise; Great Lakes; lakes, bays, and sounds; and rivers. The cognizant OCMI may prohibit a ~~vessel~~towing vessel from operating on a route of lesser severity than the primary route on which a ~~vessel~~towing vessel is authorized to operate, if local conditions necessitate such a restriction.

(c) When designating a permitted route or imposing any operational limits on a towing vessel, the cognizant OCMI may consider:

(1) The route-specific requirements of this subchapter;

(2) The performance capabilities of the ~~vessel~~towing vessel based on design, scantlings, stability, subdivision, propulsion, speed, operating modes, maneuverability, and other characteristics;

(3) The suitability of the ~~vessel~~towing vessel for nighttime operations and use in all weather conditions;

(4) ~~Vessel~~Towing vessel operations in globally remote areas or severe environments not covered by this subchapter. Such areas may include, but are not limited to, polar regions, remote islands, areas of extreme weather, and other remote areas where timely emergency assistance cannot be anticipated; and

(5) The ~~Towing Safety Management System~~TSMS applicable to the ~~vessel~~towing vessel~~, if the vessel has a TSMS~~.

Sec. 136.235 Certificate of Inspection (COI) amendment.

(a) An amended Certificate of Inspection (COI) may be issued at any time by the cognizant Officer in Charge, Marine Inspection (OCMI). The amended COI replaces the original, but the expiration date remains the same as that of the original. An amended COI may be issued to authorize and record a change in the dimensions, gross tonnage, owner, managing operator, manning, persons permitted, route permitted, conditions of operations, or equipment of a towing vessel, from that specified in the current COI.

(b) A request for an amended COI must be made to the cognizant OCMI by the owner or managing operator of the towing vessel at any time there is a change in the character of the ~~vessel~~towing vessel or in its route, equipment, ownership, operation, or similar factors specified in its current COI.

(c) Prior to the issuance of an amended COI, the cognizant OCMI may require that the owner or managing operator of the towing vessel provide an audit report. The report must:

(1) Be from an approved third~~-~~ party organization and prepared in accordance with parts 138 and 139 of this subchapter; and

(2) Consider the change in the character of a ~~vessel~~towing vessel or in its route, equipment, ownership, operation, or similar factors specified in its current COI.

Sec. 136.240 Permit to proceed.

Permission to proceed to another port for repairs may be required for a towing vessel that is no longer in compliance with its Certificate of Inspection (COI). This may include damage to the ~~vessel~~towing vessel, failure of an essential system, or failure to comply with a regulation, including failure to comply with the ~~Towing Safety Management System (TSMS)~~TSMS requirements, if appropriate.

(a) The ~~vessel~~towing vessel may proceed to another port for repair, if:

(1) In the judgment of the owner or~~,~~ managing operator~~, or~~ and master, the trip can be completed safely;

(2) ~~If utilizing a TSMS, t~~The TSMS applicable to the towing vessel addresses the condition of the ~~vessel~~towing vessel ~~that has resulted in non-compliance~~ and the necessary conditions under which the ~~vessel~~towing vessel may safely proceed to another port for repair;

(3) ~~If utilizing a TSMS, t~~The ~~vessel~~towing vessel proceeds as provided in the TSMS and does not tow while proceeding unless the owner or managing operator determines that it is safe to do so; and

(4) The owner or managing operator ~~must~~ notifies~~y~~ the cognizant Officer in Charge, Marine Inspection (OCMI) in whose zone the non-compliance occurs or is discovered, ~~before the vessel proceeds~~ and any other OCMI zones through which the ~~vessel~~towing vessel will transit, before the towing vessel proceeds.

(b) If ~~utilizing a TSMS and this~~the TSMS applicable to the towing vessel does not address the condition of the ~~vessel~~towing vessel ~~that has resulted in non-compliance~~ and the necessary conditions under which the ~~vessel~~towing vessel may safely proceed to another port for repair, the owner, managing operator, or master must apply to the cognizant OCMI in whose zone the non-compliance occurs or is discovered for permission to proceed to another port for repairs as follows:

(1) The application may be made electronically, in writing, or verbally. The cognizant OCMI may require a written description, damage surveys, or other documentation to assist in determining the nature and seriousness of the non-compliance;

(2) The ~~vessel~~towing vessel will not engage in towing, unless the cognizant OCMI determines it is safe to do so; and

(3) The permit may be issued by the Coast Guard on Form CG-948, ``Permit to Proceed to Another Port for Repairs,'' or in letter form and will state the conditions under which the ~~vessel~~towing vessel may proceed to another port for repair.

(c) The cognizant OCMI may require inspection of the ~~vessel~~towing vessel by a Coast Guard Marine Inspector or examination by an ~~approved third-party surveyor~~approved third party organization prior to the ~~vessel~~towing vessel proceeding.

Sec. 136.245 Permit to carry excursion party or temporary extension or alternation of route.

(a) A towing vessel must obtain approval to engage in an excursion prior to carrying a greater number of persons than permitted by the Certificate of Inspection (COI) or a temporary extension or alteration of area of operation.

(b) The ~~vessel~~towing vessel may engage in an excursion, if:

(1) In the opinion of the owner, managing operator, or master the operation can be undertaken safely;

(2) ~~If utilizing a TSMS, t~~The TSMS applicable to the towing vessel addresses the temporary excursion

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operation contemplated, the necessary conditions under which the ~~vessel~~towing vessel may safely conduct the operation, including the number of persons the ~~vessel~~towing vessel may carry, the crew required, and any additional lifesaving or safety equipment required;

(3) ~~If utilizing a TSMS, t~~The ~~vessel~~towing vessel proceeds as provided in the TSMS; and

(4) The owner, managing operator, or master notifies the cognizant Officer in Charge, Marine Inspection (OCMI) at least 48 hours prior to the temporary excursion operation. The cognizant OCMI may require submission of the pertinent provisions of the TSMS applicable to the ~~vessel~~towing vessel for review and onboard verification of compliance. If the cognizant OCMI has reason to believe that the TSMS applicable to the ~~vessel~~towing vessel is insufficient for the intended excursion, additional information requested and/or additional requirements may be imposed.

(c)(1) If a TSMS applicable to the ~~vessel~~towing vessel does not address the temporary excursion operation, then the owner or managing

operator must submit an application to the cognizant OCMI. The application must state the intended route, number of passengers or guests, and any other conditions applicable to the excursion that exceed those specified in the COI.

(2) The cognizant OCMI may issue Form CG-949, ``Permit To Carry Excursion Party'' or a letter. The cognizant OCMI will indicate on the permit the conditions under which it is issued, the number of persons the ~~vessel~~towing vessel may carry, the crew required, any additional lifesaving or safety equipment required, the route for which the permit is granted, and the dates on which the permit is valid. The application may be made electronically, in writing, or verbally.

(d) The ~~vessel~~towing vessel may not engage in towing during the excursion, unless the cognizant OCMI determines it is safe to do so.

(e) The cognizant OCMI may require inspection of the ~~vessel~~towing vessel by a Coast Guard Marine Inspector, or examination by an ~~approved third party~~approved third party organization.

Sec. 136.250 Load lines.

Each towing vessel operating outside the Boundary Line (as set forth in 46 CFR part 7) is subject to Subchapter E ``Load Lines'' as follows:

(a) On international voyages: If 79 feet (24 meters) or more in length and built on or after July 21, 1968, or 150 gross tons and over if built before that date;

(b) On domestic voyages, including Great Lakes: If 79 feet (24 meters) or more in length and built on or after January 1, 1986, or 150 gross tons and over if built before that date.

PART 137--VESSEL COMPLIANCE

Subpart A--General

Sec.

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 137.100 Purpose.

This part describes the procedures owners or managing operators of towing vessels must use to demonstrate compliance with the requirements of this subchapter.

Sec. 137.105 Definitions.

The definitions provided in section 136.110 of this subchapter apply to this part.

Sec. 137.110 [Reserved]

Sec. 137.115 Issuance of Certificate of Inspection (COI).

The owner or managing operator of a towing vessel must demonstrate that the vessel complies with this part to be eligible for Certificate of Inspection (COI) in accordance with ~~Sec.~~ section 136.210 of this subchapter.

Sec. 137.120 Responsibility for compliance.

(a) The owner and managing operator must ensure that the towing vessel is in compliance with this subchapter and other applicable laws and regulations at all times.
(b) Non-conformities and deficiencies must be corrected in a timely manner in order to prevent harm to life, property, and the marine environment.

Sec. 137.125 Towing Safety Management System (TSMS).

~~If a Towing Safety Management System (~~The TSMS~~)~~ ~~is~~ applicable to the towing vessel~~, the TSMS~~ must:
(a) Include policies and procedures to ensure compliance with this part; and
(b) Provide objective evidence that documents compliance with the TSMS.

Sec. 137.130 Program for towing vessel compliance ~~for the TSMS option~~.

The owner or managing operator of a towing vessel ~~choosing to utilize a TSMS~~ must, through the TSMS applicable to the towing vessel, implement a program for towing vessel compliance with this subchapter. Each program must include:

(a) Owner or managing operator policy regarding the conducting of surveys, drydock examinations and internal structural examinations of towing vessels;

(b) Procedures for conducting towing vessel surveys, drydock examinations and internal structural examinations, as described in this part;

(c) Procedures for reporting and correcting non-conformities and deficiencies;

(d) Identification of individual(s), and their qualifications, responsible for the management of the program; and

(e) Documentation of compliance activities.

Sec. 137.135 Reports and documentation ~~required for the TSMS option~~.

(a) Reports detailing surveys of a towing vessel conducted by an approved third party organization must include:

(1) Towing v~~V~~essel name;

(2) Other towing vessel identifier such as official number or state number;

(3) Name and business address of owner or managing operator;

(4) Date(s) of the survey;

(5) Date the Report of Survey was issued if different than the date the survey was concluded;

(6) Name of the surveyor;

(7) Name and business address of the approved third party organization the surveyor represents;

(8) Signature of the surveyor;

(9) A list or description of the items examined or witnessed;

(10) A descriptive listing of all non-conformities identified during the survey, including those which were corrected during the course of the survey;

(11) A descriptive listing of:

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(i) All non-conformities remaining at the end of the survey;

(ii) The required corrective action(s);

(iii) The latest date of required corrective action, not to exceed thirty days from date of discovery; and

(iv) Means by which the approved third party organization will verify that satisfactory corrective action has occurred.

(12) Identification of items that need to be repaired or replaced

before the vessel continues in service; and
(13) A statement that the vessel complies with the applicable requirements of this subchapter and is fit for service and route, subject to correction of non-conformities.
(b) ~~For a vessel subject to an audited program, t~~The owner or managing operator must provide objective evidence of compliance with this part in accordance with the ~~Towing Safety Management System~~TSMS applicable to the vessel.

Subpart B--Surveys ~~for Certification for the TSMS Option~~

Sec. 137.200 ~~Frequency of survey~~Documenting compliance with survey requirements.

The owner or managing operator of a towing vessel must document compliance with this subpart as follows:
(a) Prior to obtaining the towing vessel's initial Certificate of Inspection (COI), the owner or managing operator must provide to the Coast Guard a report of a survey as described in ~~Sec.~~section ~~—~~137.215 of this part that demonstrates that the towing vessel complies with the survey requirements of this part.
(b) For re-issuance of the towing vessel's COI:
(1) Provide objective evidence of compliance through a periodic survey as described in ~~Sec.~~section ~~—~~ 137.205 of this part; or
(2) Provide objective evidence of compliance through a ~~an audited~~ program of continuous assessment as described in ~~Sec.~~section ~~—~~137.210 of this part.

Sec. 137.205 Compliance by p~~P~~eriodic survey.

(a) The owner or managing operator of a towing vessel who demonstrates that the towing vessel complies with section 137.215 of this part ~~compliance —~~through a periodic survey must:
(1) Have the towing vessel surveyed annually by an approved third~~—~~party ~~surveyor~~organization;
(2) Ensure the survey is conducted in accordance with section 137.215;
(3) Ensure the survey is conducted within 3 months of the anniversary of the issuance of the Certificate of Inspection;
(4) Ensure the ~~Towing Safety Management System (~~TSMS~~)~~ applicable to the towing vessel includes policies and procedures for complying with this section; and
(5) Make the applicable sections of the TSMS available to the surveyor.
(b) The approved third~~—~~ party organization must issue a report which meets the requirements of ~~Sec. —~~section 137.135 of this part.

Sec. 137.210 Compliance by program of continuous assessment~~Audited program~~.

(a) The owner or managing operator of a towing vessel may d~~D~~emonstrate that the towing vessel complies~~ance~~ with section 137.215 of this part by a program of continuous assessment as provided in the TSMS applicable to the towing vessels~~through an audited program~~. The ~~Towing Safety Management System applicable to the vessel~~TSMS must include:

(1) Procedures for surveying and testing contained in ~~Sec.~~ section 137.215 of this part;

(2) Equipment, systems, and onboard procedures to be surveyed;

(3) Identification of items that need repair or replacement before the towing vessel continues in service;

(4) Procedures for documenting and reporting non-conformities and deficiencies;

(5) Procedures for reporting and correcting major non-conformities;

(6) The responsible person(s) in management who has the authority~~,~~ to:

(i) Stop all towing vessel operations pending correction of non-conformities and deficiencies;

(ii) Oversee towing vessel compliance activities; and

(iii) Track and verify that non-conformities and deficiencies were corrected.

(7) Procedures for recordkeeping.

(b) The owner or managing operator is not required to survey the items as described in ~~Sec.~~ section 137.220 of this part as one event, but may survey items on a schedule over time, provided that the next ~~interval between~~ successive survey~~s~~ of any item occurs within three months of the anniversary of the previous survey~~does not exceed 1 year~~, unless otherwise prescribed.

(c) ~~Prior to placement into an audited program, a~~A towing vessel must successfully complete an initial audit by an approved third ~~-~~party organization. Then, the vessel must be audited in accordance with the provisions of part 138 of this subchapter.

(d) If the cognizant Officer in Charge, Marine Inspection (OCMI) has reason to believe that the procedures for demonstrating compliance with section 137.215 of this part are ~~an audited program is~~ deficient, that OCMI may:

(1) Require an audit or survey of the towing vessel in the presence of a representative of the cognizant OCMI;

(2) Increase the frequency of the audits; or

(3) Require that the vessel comply with the periodic survey requirements of ~~Sec.~~ section 137.205 of this part.

(4) Require any specific action within his power and authority deemed appropriate~~.~~; or

(5) For continued deficient audits, revoke the towing vessel's ~~move the vessel and or owner or managing operator from the TSMS system~~Towing Vessel Safety Management System Certificate (TVSMSC).

Sec. 137.215 General conduct of survey.

(a) ~~When conducting a~~A survey of a towing vessel ~~as~~ required by this subpart~~, the surveyor~~ must determine that the surveyed item or system functions as designed, is free of defects or modifications that reduce its effectiveness, is suitable for the service intended, and functions safely in a manner consistent for towing vessel type, service and route.

(b) The survey must address the items in ~~Sec.~~ section 137.220 of this part as applicable, and include:

(1) A review of certificates and documentation held on the towing vessel;

(2) Visual examination and tests of the towing vessel and its equipment and systems in order to confirm that their condition is properly maintained and that proper quantities are onboard;

(3) Observation of drills or training to determine that the program of drills and training is carried out properly; and

(4) Visual examination to confirm that unapproved modifications were not made to the towing vessel or its equipment.

(c) The thoroughness and stringency of the survey will depend upon the condition of the towing vessel and its equipment.

(d) The owner or managing operator must notify the cognizant Officer in Charge, Marine Inspection (OCMI) when the condition of the towing vessel, its equipment, systems, or operations, create an unsafe condition.

(e) If the ~~The~~ cognizant OCMI has reason to believe that the TSMS procedures for demonstrating compliance with this subpart are deficient or that ~~may require that~~ the owner or managing operator has failed to comply with the TSMS procedures, the OCMI may require that the owner or managing operator provide for the attendance of an approved third-party ~~surveyor~~organization ~~or auditor~~ to assist with verifying compliance with this subpart.

Sec. 137.220 Scope of survey.

The survey required by this subpart ~~owner or managing operator of a towing vessel~~ must ~~examine~~include an examination ~~or have examined~~of the following systems, equipment, and procedures to ensure that the towing vessel and its equipment are suitable for the service for which the towing vessel is certificated:

(a) ~~Towing Safety Management System (~~TSMS~~)~~. (1) Verify that the towing vessel is enrolled in a TSMS that complies with part 138 of this subchapter;

(2) Verify that the policies and procedures applicable to the towing vessel are available to the crew;

(3) Verify that internal and external audits are conducted in accordance with the approved TSMS; and

(4) Verify that recordkeeping requirements of this subchapter are met.

(b) Hull structure and appurtenances. Verify that the towing vessel complies with part 144 of this subchapter and examine the condition of, and where appropriate, witness the operation of, the following:

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(1) All accessible parts of the exterior and interior of the hull, the watertight bulkheads, and weather decks. Entry into confined spaces such as fuel tanks that are not gas free is not required. A confined space is not required to be gas-freed to allow for examination unless there is objective evidence of a hazardous condition warranting examination;

(2) All watertight closures in the hull, decks, and bulkheads, including through hull fittings and sea valves;

(3) Superstructure, masts, and similar arrangements constructed on the hull;

(4) Railings and bulwarks and their attachments to the hull structure;

(5) The presence of guards or rails in dangerous places;

(6) All weathertight closures above the weather deck and the provisions for drainage of sea water from the exposed decks;

(7) Watertight doors, where installed, verifying local and remote operation and
proper fit;

(8) All accessible interior spaces to ensure that they are adequately ventilated and drained, and that means of escape are maintained and operate as intended; and

(9) Towing v~~V~~essel markings.

(c) Machinery, fuel, and piping systems. Verify that the towing vessel complies with applicable requirements contained in part 143 of this subchapter and examine the condition, and where appropriate, witness the operation of the following:

(1) Engine control mechanisms, including primary and alternate means, if the towing vessel is equipped with alternate means, of starting machinery, directional controls, and emergency shutdowns;

(2) All machinery essential to the routine operation of the towing vessel,
including generators and cooling systems;

(3) All fuel systems, including fuel tanks, tank vents, piping, and pipe fittings;

(4) All valves in fuel lines, including local and remote operation;

(5) All overboard discharge and intake valves and watertight bulkhead pipe penetration valves;

(6) Means provided for pumping bilges; and

(7) Machinery shut-downs and alarms.

(d) Steering systems. Examine the condition and, where appropriate, witness the operation of the following:

(1) Steering systems and equipment ensuring smooth operation;

(2) Auxiliary means of steering, if installed; and

(3) Alarms.

(e) Pressure vessels and boilers. Examine, maintain, repair, and test unfired pressure vessels and boilers in accordance with subpart ~~C~~B of part 143 of this chapter.

(f) Electrical. Verify that the towing vessel complies with applicable requirements contained in part 143 of this subchapter and examine the condition and, where appropriate, witness the operation of the following:

(1) All cables, as far as practicable, without undue disturbance of the cable or electrical apparatus;

(2) Circuit breakers, including testing by manual operation;

(3) Fuses, including ensuring the ratings of fuses are suitable for the service intended;

(4) All generators, motors, lighting fixtures, and circuit interrupting devices;

(5) Batteries, including security of stowage;

(6) Electrical apparatus that ~~, which~~ operates as part of or in conjunction with a fire detection or alarms system installed onboard the vessel, to ensure operation in case of fire; and

(7) All emergency electrical systems, including any automatic systems if installed.

(g) Lifesaving. Verify that the towing vessel complies with applicable requirements contained in part 141 of this subchapter and examine the condition of lifesaving equipment and systems as follows:

(1) Towing v~~V~~essel is equipped with the required number of lifejackets, work vests, and immersion suits, as applicable;

(2) Serviceable condition of each lifejacket, work vest, and marine buoyant device;

(3) Each lifejacket, other personal floatation device, and other lifesaving device found to be defective and incapable of repair, was destroyed;

(4) Each item of lifesaving equipment found to be defective has been repaired or replaced;

(5) Each piece of expired lifesaving equipment has been replaced;

(6) Operation of each rescue boat and its launching appliance and survival craft launching appliance in accordance with Subchapter W of this chapter;

(7) Servicing of each inflatable liferaft, inflatable buoyant apparatus, and inflatable lifejacket as required by Subchapter W of this chapter;

(8) Operation of each hydrostatic release unit as required by Subchapter W of this chapter; and

(9) Towing v~~V~~essel's crew conducted abandon ship and man overboard drills under simulated emergency conditions. This may be verified by a review of records of drills.

(h) Fire protection. Verify that the towing vessel complies with applicable requirements contained in part 142 of this subchapter and examine or verify fire protection equipment and systems as follows:

(1) Towing v~~V~~essel is equipped with the required fire protection equipment for the vessel's route and service;

(2) Examinations, testing, and maintenance as required by ~~Sec.~~section 142.240 of this subchapter are performed; and

(3) Training requirements of ~~Sec.~~ section 142.245 of this subchapter are carried out.

(i) Towing gear. Verify that the towing vessel complies with applicable requirements contained in parts 140 and 143 of this subchapter and examine or verify the condition, and where appropriate, the operation of the following:

(1) Deck machinery including controls, guards, alarms and safety features;

(2) Hawsers, wires, bridles, push gear, and related vessel fittings for damage or wear; and

(3) Towing v~~V~~essel complies with 33 CFR part 164, if applicable.

(j) Navigation equipment. Verify that the towing vessel complies with applicable requirements contained in part 140 of this subchapter and examine or verify the condition and, where appropriate, the operation of the following:

(1) Navigation systems and equipment;

(2) Navigation lights;

(3) Navigation charts or maps appropriate to the area of operation and corrected up to date;

(4) Operation of equipment and systems necessary to maintain visibility through the pilothouse windows; and

(5) Towing v~~V~~essel complies with 33 CFR Part 164, if applicable.

(k) Sanitary examination. Examine quarters, toilet and washing spaces, galleys, serving pantries, lockers, and similar spaces to ensure that they are clean and decently habitable.

(l) Unsafe practices. (1) Verify that all observed unsafe practices, fire hazards, and other hazardous situations are corrected, and all required guards and protective devices are in satisfactory condition; and

(2) Ensure that bilges and other spaces are free of excessive accumulation of oil, trash, debris, or other matter that might create a fire hazard, clog bilge pumping systems, or block emergency escapes.

(m) Vessel personnel. Verify that the:

(1) Towing v~~V~~essel is manned in accordance with the towing vessel's Certificate of Inspection;

(2) Crew is maintaining towing vessel logs and records in accordance with applicable regulations and the TSMS ~~appropriate~~applicable to the vessel;

(3) Crew is complying with the ~~crew~~ safety and ~~personnel~~occupational health requirements of part 140 of this subchapter;

(4) Crew has received training required by parts 140, 141, and 142 of this subchapter; and

(5) Towing v~~V~~essel complies with part 140 of this subchapter.

(n) Prevention of oil pollution. Examine the towing vessel to ensure compliance with the oil pollution

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prevention requirements set forth in ~~Sec.~~ section 140.655 of this subchapter.

(o) Miscellaneous systems and equipment. Examine all items in the vessel's outfit, such as ground tackle, markings, and placards, which are required to be carried by the regulations in this subchapter.

Subpart C--Drydock and Internal Structural ~~Surveys~~Examinations

Sec. 137.300 Documenting compliance ~~for the TSMS option~~ with drydock and internal structural examination requirements.

The owner or managing operator of a towing vessel must document compliance with this subpart as follows:

(a) Except as provided in paragraph (c) of this section, the owner or managing operator must provide to the Coast Guard a report of a survey as described in ~~Sec.~~ section 137.215 of this part that demonstrates that the towing vessel complies with the drydock and internal structural ~~survey~~examination requirements of this part, prior to obtaining the towing vessel's initial Certificate of Inspection (COI).

(b) For re-issuance of the towing vessel's COI:

(1) Provide objective evidence of compliance through a periodic survey as described in ~~Sec.~~section~~-~~ 137.310 of this part; or

(2) Provide objective evidence of compliance through a ~~an audited~~ program of continuous assessment as described in ~~Sec.~~ section 137.315 of this part.

(c) Objective evidence of compliance with the load line assignment, certification, and marking requirements in subchapter E (Load lines) of this chapter must be provided as described in ~~Sec.~~ section 137.320 of this part.

Sec. 137.305 Intervals for drydock and internal structural examination.

(a) ~~Regardless of the option chosen to obtain a COI, e~~Each towing vessel must undergo a drydock examination and internal structural examination at the following intervals:

(1) A towing vessel that is exposed to salt water more than 6 months in any 12-month period since the last survey must undergo a drydock and an internal structural ~~survey~~examination at least twice every 5 years, with not more than 36 months between drydockings; and

(2) A vessel that is exposed to salt water not more than 6 months in any 12-month period since the last survey must undergo a drydock and an internal structural ~~survey~~examination at least once every 5 years.

(3) A towing vessel that operates exclusively on the Great Lakes may extend the required interval for drydocking and internal structural examination for up to 1 year, provided the towing vessel undergoes a satisfactory survey by an approved third-party organization.

(b) The cognizant Officer in Charge, Marine Inspection may require

further examination of the towing vessel whenever damage or deterioration to hull plating or structural members is discovered or suspected that may affect the ~~seaworthiness~~fitness of a towing vessel for its intended service. This may include examination of the towing vessel on drydock, including:

(1) Internal structural examination of any affected space of a towing vessel, including fuel tanks;

(2) Removal of the towing vessel from service to assess the extent of the damage and to effect permanent repairs; or

(3) Adjusting the drydock examination intervals to monitor the towing vessel's structural condition.

Sec. 137.310 Compliance by ~~P~~periodic survey~~ for the TSMS option~~.

(a) The owner or managing operator of a towing vessel may demonstrate that the towing vessel complies with ~~Sec.~~ section 137.330 of this part by having an approved third~~-~~ party ~~surveyor~~organization conduct a survey of the towing vessel.

(b) The survey must be conducted at the intervals prescribed in section ~~Sec~~. ~~–~~137.305 of this part.

(c) The ~~Towing Safety Management System (~~TSMS~~)~~ applicable to the towing vessel must include policies and procedures for complying with this section.

(d) The applicable sections of the TSMS must be made available to the surveyor~~ conducting the survey~~.

(e) The drydock and internal structural ~~survey~~examination must be documented in a report that meets the requirements of section ~~complies with the information required in Sec.~~ 137.205(b) of this part.

Sec. 137.315 ~~Audited program for the TSMS option~~Compliance by program of continuous assessment.

(a) The owner or managing operator of a towing vessel may demonstrate compliance with this subpart through a~~n audited~~ program of continuous assessment as provided in the TSMS applicable to the towing vessel.

~~The Towing Safety Management System (~~TSMS~~) applicable to the vessel~~ must include:

(1) Procedures for conducting an ~~An~~ examination that meets the requirements contained in ~~Sec.~~section 137.325 of this part;

(2) Qualifications of the personnel authorized to carry out examinations that are comparable to the requirements of an approved third~~-~~ party ~~surveyor~~organization as provided for in ~~Sec.~~section~~–~~ 139.130 of this subchapter;

(3) Procedures for documenting and reporting non-conformities and deficiencies;

(4) Procedures for reporting and correcting major non-conformities;

(5) Identification of a responsible person in management who has the authority to stop all towing vessel operations pending correction, oversee towing vessel compliance activities, and track and verify the correction of non-conformities and deficiencies; and

(6) Identification of objective evidence that supports the completion of all elements of a towing vessel's drydock and internal structural examinations.

(b) The approved third- party organization responsible for auditing the TSMS must be notified whenever activities related to ~~credit~~ drydocking or internal structural examinations are to be carried out.

(c) The owner or managing operator is not required to examine the items as described in section 137.330 of this part as one event, but may examine items on a schedule over time, provided that the interval ~~The interval~~ between examinations of each item may not exceed the applicable interval described in ~~Sec.~~ section 137.305 of this part.

(d) Prior to commencing work related to drydock examination or internal structural examination, the owner or managing operator must notify the cognizant Officer in Charge, Marine Inspection (OCMI) of the zone within which those activities ~~related to credit drydocking or internal structural surveys~~ are to be carried out.

(e) If the OCMI described in paragraph (d) of this section has reason to believe that the TSMS procedures for demonstrating compliance with ~~an audited program of drydock and internal structural survey is deficient~~section 137.330 of this part are deficient, the OCMI ~~s/he~~ may:

(1) Require an audit of ongoing drydocking procedures and documentation applicable to the towing vessel in the presence of a representative of the cognizant OCMI;

(2) Increase the frequency of ~~the~~ audits of the towing vessel; or

(3) Require a survey by an approved third-~~-~~party organization.

(4) Require any specific action within his power and authority deemed appropriate; or,~~.~~

(5) For continued deficiencies, revoke the towing vessel's Towing Vessel Safety Management System Certificate (TVSMSC).~~move the vessel and/or owner or managing operator from the TSMS system.~~

Sec. 137.320 Towing v~~V~~essels holding a valid load line certificate.

(a) A towing vessel with a valid load line certificate issued by a Recognized Classification Society will meet the requirements of ~~this S~~section 137.330 of this part.

(b) The cognizant OCMI may request copies of all pertinent load line survey documentation, including ~~to include~~ the last two periodic surveys.

Sec. 137.325 General conduct of drydock and internal structure examination ~~survey for the TSMS option~~.

(a) ~~When conducting a survey of a towing vessel as required by this subpart, the surveyor~~The drydock examination and internal structural examination of a towing vessel required by this subpart must determine that the hull and related structure and components are free of significant defects, deterioration, damage, or modifications that reduce effectiveness, and that the towing vessel is suitable for route and service.

(b) The ~~survey~~drydock examination and internal structural examination must address the items in ~~Sec.~~ section 137.330 of this part as applicable, and include:

(1) Access to internal spaces as appropriate;

(2) Visual ~~survey~~examination of the external structure of the vessel to confirm that the condition is properly maintained; and

(3) Visual survey to confirm that unapproved modifications were not made to the towing vessel.

(4) Entry into confined spaces such as fuel tanks that are not gas free is not required. A confined space is not required to be gas-freed to allow for examination unless there is objective evidence of a hazardous condition warranting examination.

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(c) The thoroughness and stringency of the survey will depend upon the condition of the towing vessel.

(d) The owner or managing operator must notify the cognizant Officer in Charge, Marine Inspection (OCMI) when the condition of the towing vessel creates ~~an unsafe condition~~ a recognized hazardous condition.

~~(e) The cognizant OCMI may require that the owner or managing operator provide for the attendance of an approved third-party surveyor or auditor to assist with verifying compliance with this subpart.~~

Comment [JAC14]: The term "unsafe condition" is not defined in this subchapter, but recognized hazardous condition is.

Sec. 137.330 Scope of drydock examination and internal structural examination.

(a) ~~This regulation applies to all towing vessels covered by this subchapter. T~~he drydock examination must be conducted while the towing vessel is hauled out of the water or placed in a drydock or slipway. The ~~Coast Guard inspector or surveyor~~ person conducting this examination must:

(1) Examine the exterior of the hull, including bottom, sides, headlog, and stern; all appendages for damage, fractures, wastage, pitting, or improper repairs.

(2) Examine each tail shaft for bends, cracks, and damage, including the sleeves or other bearing contact surface(s) on the tail shaft for wear. The tail shaft need not be removed for examination if these items can otherwise be properly evaluated;

(3) Examine rudders for damage; upper and lower bearings for wear; and rudder stock for damage or wear. Rudders need not be removed for examination if these items can be properly evaluated without doing so;

(4) Examine propellers for cracks and damage;

(5) Examine exterior components of the machinery cooling system for leaks, damage, or deterioration;

(6) Open and examine all sea chests, thr~~u~~ough-hull fittings, and strainers for damage, deterioration, or fouling; and

(7) On wooden towing vessels, pull fastenings as required for examination.

(b) An internal structural examination~~/survey~~ required by this part may be conducted while the towing vessel is afloat or out of the water. It consists of a complete examination of the towing vessel's main strength members, including the major internal framing, the hull plating and planking, voids, and ballast, cargo, and fuel oil tanks. Where the internal framing, plating, or planking of the towing vessel is concealed, sections of the lining, ceiling, or insulation may be removed or the parts otherwise probed or exposed to determine the condition of the hull structure. Fuel oil tanks need not be cleaned out and internally examined if the general condition of the tanks is determined to be satisfactory by external examination.

Sec. 137.335 Underwater survey in lieu of drydocking.

(a) ~~This section applies to all towing vessels subject to this subchapter. If a Towing Safety Management System (~~The TSMS~~) is~~ applicable to the towing vessel~~, the TSMS~~ may include policies and procedures for employing and documenting an underwater survey in lieu of drydocking (UWILD). A UWILD may be conducted if:

(1) No obvious damage or defects in the hull adversely affecting the ~~seaworthiness~~fitness of the towing vessel for its intended service are present;

(2) The towing vessel has been operated satisfactorily since the last drydocking;

(3) The towing vessel is less than 15 years of age;

(4) The towing vessel has a steel or aluminum hull; and

(5) The towing vessel is fitted with an effective hull protection system.

(b) The TSMS applicable to the towing vessel~~owner or operator must submit an application at least 90 days before the vessel's next required drydock examination. The application~~ must provide for documentation of the following items. These items may be documented in the TSMS or another location specified in the TSMS applicable to the towing vessel~~include~~:

(1) The procedure for carrying out the underwater survey;

(2) The time and place of the underwater survey;

(3) The method used to accurately determine the diver's or remotely operated vehicle (ROV)'s location relative to the hull;

(4) The means for examining all through-hull fittings and appurtenances;

(5) The condition of the towing vessel, including the anticipated draft of
the towing vessel at the time of the survey;

(6) A description of the hull protection system; and
(7) The name and qualifications of any third party examiner, if used.
(c) If a towing vessel is 15 years old or older, a UWILD may be conducted ~~the Commandant may approve an underwater survey instead of a drydock examination,~~ at alternating intervals. ~~The owner or operator must submit an application to the OCMI at least 90 days before the vessel's next required drydock examination.~~ The owner or managing operator may follow this option if--
(1) The vessel is qualified under paragraphs (a)(1), (2), (4), and (5) of this section; and
~~(2) The application includes the information described in paragraphs (b)(1) through (7) of this section; and~~
(2~~3~~) During the towing vessel's drydock examination preceding the underwater survey, a complete set of hull gauging was taken which indicated that the towing vessel was free from appreciable hull deterioration.
~~(d) After the drydock examination required by paragraph (c)(3) of this section, the OCMI will submit a recommendation for future underwater surveys, the results of the hull gauging, and the results of the Coast Guard's drydock examination to Commandant for review.~~

PART 138--TOWING SAFETY MANAGEMENT SYSTEMS (TSMS)

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 138.100 Purpose.

The purpose of this part is to prescribe requirements for owners or managing operators of towing vessels to implement ~~who adopt~~ a Towing Safety Management System (TSMS) ~~to comply with the requirements of this subchapter~~.

Sec. 138.105 Definitions.

The definitions provided in ~~Sec.~~section ~~—~~136.110 of this subchapter apply to this part.

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~~Sec. 138.110 Incorporation by reference.~~

~~Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. Also, it is available for inspection at U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street, SW., Washington, DC 20593-0001, and is available from the sources listed in paragraph (b) of this section.~~

~~(b) The material approved for incorporation by reference in this part and the sections affected are:~~

~~International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case Postale 56, CH-1211 Geneva 20, Switzerland~~

~~9001-2000, 2000..... 138.310~~

Sec. 138.115 Compliance.

Owners or managing operators of towing vessels that are subject to this subchapter must obtain the Towing Company Safety Management System Certificate (TCSMSC) issued under ~~Sec.~~section ~~-~~138.305 of this part no later than [DATE 2 YEARS AFTER EFFECTIVE DATE OF FINAL RULE]~~ if they do not want to be subject to an annual, Coast Guard inspection regime~~.

Subpart B--Towing Safety Management System (TSMS)

Sec. 138.200 Safety management.

All towing vessels must be operated in compliance with a ~~n owner- or managing operator-implemented~~ Towing Safety Management System~~ or be subject to an annual, Coast Guard inspection regime~~.

Sec. 138.205 Purpose of ~~Towing Safety Management System (~~TSMS~~)~~.

(a) The purpose of a TSMS ~~safety management system~~ is to ensure towing vessel safety, prevent injury to persons or loss of life, and avoid damage to the marine environment and to property ~~establish policies, procedures, and required documentation to ensure the owner or managing operator meets its established goals~~ while ensuring continuous compliance with all regulatory requirements. ~~The safety management system must contain a method to ensure all levels of the organization are working within the framework~~.

(b) A ~~Towing Safety Management System~~ TSMS establishes and maintains:

(1) Management policies and procedures that serve as an operational protocol for all levels ~~within management~~ of the organization;

(2) Procedures to produce objective evidence that demonstrates compliance with the requirements of this subchapter;

(3) Procedures for an owner or managing operator to conduct internal audits to ensure ~~self-evaluate~~ that ~~ensure~~ it is following the ~~its own~~ policies and procedures laid out in the TSMS and complies with the requirements of this subchapter;

(4) Procedures for external audits of the company management system and towing vessels ~~Arrangements for a periodic evaluation~~ by an approved ~~an independent~~ third-~~p~~Party organization to ensure ~~determine how well~~that the ~~an~~ owner or managing operator and the~~ir~~ towing vessels are complying with the TSMS ~~their stated policies and procedures, and to verify that those policies and procedures comply~~ and with the requirements of this subchapter; and

(5) Procedures for correcting problems ~~identified by management personnel and third parties~~ and facilitating continuous improvement.

Sec. 138.210 Objectives of ~~Towing Safety Management System (~~TSMS~~)~~.

Comment [JAC15]: Revised to focus on primary goal – safety – with language adapted from ISM Code, and to simplify and improve clarity of language.

Comment [JAC16]: Revised for simplicity/consistency with ISM Code. Very similar to draft language supported by TSAC in 2008.

The ~~Towing Safety Management System (~~TSMS~~)~~, ~~through policies, procedures, and documentation~~ must:

(a) ~~(a)~~ Provide for safe practices in vessel operation and a safe working environment;

(b) Establish safeguards against all identified risks;

(c) Continuously improve safety management skills of personnel ashore and aboard vessels, including preparing for emergencies related to safety and environmental protection; and,

(d) Ensure compliance with mandatory rules and regulations, taking into account relevant national or international regulations, standards, codes, and industry guidelines. ~~Demonstrate management responsibility. The management must demonstrate that they implemented the policies and procedures as contained in the TSMS and the entire organization is adhering to their safety management program.~~

~~(b) Document management procedures. A TSMS must describe and document the owner or managing operator's organizational structure, responsibilities, procedures, and resources which ensure quality monitoring.~~

~~(c) Ensure document and data control. There must be clear identification of what types of documents and data are to be controlled, and who is responsible for controlling activities, including: Approval, issue, distribution, modification, removal of obsolete materials, and other related administrative functions.~~

~~(d) Provide a process and criteria for selection of third parties. Procedures for selection of third parties must exist that include how third parties are evaluated, including selection criteria.~~

~~(e) Establish a system of recordkeeping. Records must be maintained to demonstrate effective operation of the TSMS. This should include audit records, nonconformity reports and corrective actions, auditor qualifications, auditor training, and other records as considered necessary.~~

~~(f) Identify and meet training needs. Documented procedures for identifying training needs and providing training must be established and maintained.~~

~~(g) Ensure adequate resources. Identify adequate resources and procedures necessary to comply with the TSMS.~~

Sec. 138.215 Functional requirements of a ~~Towing Safety Management System (~~TSMS~~)~~.

The owner or managing operator of a towing vessel subject to this subchapter must develop, implement and maintain a TSMS that includes the following ~~The~~ functional requirements of a ~~Towing Safety Management System (~~TSMS~~)~~ include:

(a) ~~(a)~~ Safety and environmental protection policies;

(b) Instructions and procedures to ensure ~~Policies and procedures to provide direction for the~~ safe operation of ~~the~~ towing vessels and protection of the environment in compliance with applicable U.S. law, including the Code of Federal Regulations, and, if on an international voyage, applicable international conventions to which the United States is a party;

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Comment [JAC17]: Revised for simplicity, clarity and consistency with ISM Code.

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(c~~b~~) Defined levels of authority and lines of communication between and among shoreside and vessel personnel;

(d~~c~~) Procedures for reporting accidents and non-conformities;

(e~~d~~) Procedures to prepare for and respond to emergency situations ~~by shoreside and vessel personnel~~;

(~~e~~) ~~Procedures for verification of vessel compliance with this subchapter;~~

(f) ~~Procedures to manage contracted, ongoing towing or vessel assist services (vender safety) .~~

(g) Procedures for internal audit~~sing~~ of the TSMS, as applied to the owner or managing operator and to the towing ~~including shoreside and~~ vessels;

(h) Procedures for external audits of the TSMS by an approved third-party organization;

(i) Procedures for management review of internal and external audit reports and correction of non-conformities; and, ~~and~~

(j) Procedures to evaluate recommendations made by personnel at all levels of the organization~~management personnel~~.

Sec. 138.220 ~~Towing Safety Management System (~~TSMS~~)~~ elements.

The Towing Safety Management System (TSMS) must include the elements listed in paragraphs (a) through (e) of this section. If an element listed is not applicable to an owner or managing operator, appropriate justification must be documented and is subject to acceptance by the approved third~~-~~ party organization auditing the TSMS.

(a) ~~Safety management system~~TSMS administration and management ~~organization~~. The TSMS must include a ~~A~~ policy ~~must be in place~~ that outlines how management will ~~intends to~~ ensure compliance with this ~~sub~~part.

Supporting this policy, the following procedures and documentation must be included:

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(1) Management organization--(i) Responsibilities. A description of the company ~~The management o~~Organization and the~~,~~ authority~~,~~ and responsibilities of individuals who manage, perform and verify work relating to and affecting safety and pollution prevention.

(ii) Designated person. ~~Each owner or managing operator must designate in writing the shoreside person(s) responsible for ensuring the TSMS is implemented and continuously functions throughout management and the fleet, and the shoreside person(s) responsible to ensure that the vessels are properly maintained and in operable condition, including those responsible for emergency assistance to each towing vessel.~~ To ensure the safe operation of each towing vessel and provide a link between management and towing vessel personnel, the owner or managing operator must designate a person or persons ashore having direct access to the highest level of management. The responsibility and

Comment [JAC18]: Revised for consistency with ISM Code

authority of the designated person or persons must include monitoring the safety and pollution prevention aspects of each towing vessel and ensuring that adequate resources and shore-based support are applied, as required.

(iii) Master Authority. Each owner or managing operator must define the scope of the master's authority. The master's authority must provide for the ability to make final determinations on safe operations of the towing vessel. Specifically, it must provide the authority for the master to cease operation ~~if an unsafe condition exists~~of the towing vessel.

(2) Audit Procedures. (i) Procedures for ensuring that ~~conducting~~ internal and external audits~~,~~ are conducted in accordance with ~~Sec. Sec.~~sections 138.310 and 138.315 of this part.

(ii) Procedures for identifying and correcting non-conformities. The TSMS must contain procedures for any person working ~~within the management~~ in the owner's or managing operator's organization to report non-conformities. The procedures must describe how an initial report should be made and the actions that will be taken to follow up and ensure appropriate resolution.

(b) Personnel. Policies must be in place that cover the owner or managing operator's ~~approach to~~ manag~~ing~~ement of its personnel, including, but not limited to, employment, training, and health and safety of personnel. Supporting these polices, the following procedures and documentation must be included:

(1) Employment procedures. The TSMS must contain procedures related to the employment of individuals. Procedures must be in place to ensure adequate qualifications of personnel, to include background checks,pre-employment tests in compliance with drug and alcohol standards, and that personnel are capable of performing the required tasks.

(2) Training of personnel. The TSMS must contain a policy related to the training of personnel, including:

(i) New hire orientation;

(ii) Duties associated with the execution of the TSMS;

(iii) Execution of operational duties;

(iv) Execution of emergency procedures;

(v) Occupational health;

(vi) Crew safety; and

(vii) Training required by this s~~S~~ubchapter.

(c) Verification of towing vessel compliance. The TSMS must ~~Policies must be in place that cover the owner or managing operator's approach~~ contain policies for ensuring vessel compliance with this subchapter, including, but not limited to, policies on towing vessel survey and maintenance, safety, the environment, security, and emergency preparedness. Supporting these policies, the following procedures and documentation must be included in the TSMS:

(1) Maintenance and survey. Procedures outlining the owner or managing operator's survey regime must specify ~~all~~ maintenance, examination, and survey requirements. Applicable documentation must be

maintained ~~for all activities~~ for a period of 5 years.

(2) Safety, environment, and security. The TSMS must include p~~P~~rocedures ~~must be in place~~ to ensure safety of personnel, property, and the environment~~, and personnel~~. ~~This must include procedures to ensure the selection of the appropriate vessel, including adequate maneuverability and horsepower, appropriate rigging and towing gear, proper management of the navigational watch, and compliance with applicable security measures.~~

(3) All procedures required by this subchapter must be ~~contained~~documented ~~with~~in the TSMS.

(d) ~~Compliance with Subchapter M. Procedures and documentation must be in place to ensure that each towing vessel complies with the operational, equipment, and personnel requirements of this subchapter.~~

(d~~e~~) Contracted (vendor safety) services. The TSMS must include p~~P~~rocedures ~~must be in place~~ to ensure that towing vessels subject to Subchapter M and providing vendor services to the owner or managing operator ~~the contracted towing vessel~~ have a valid COI.

Sec. 138.225 Existing safety management systems.

(a) A safety management system which is fully compliant with the International Safety Management Code requirements of 33 CFR part 96 will be deemed in compliance with these requirements.

(b) Other safety management systems may be considered for acceptance as meeting the ~~Towing Safety Management System (~~TSMS~~)~~ requirements of this part. The Coast Guard may:

(1) Accept such system in full;

(2) Require modifications to the system as a condition of acceptance; or

(3) Reject the system.

(c) ~~An owner or managing operator wishing to meet this section must submit documentation based on the initial audit and one full audit cycle of at least 3 years.~~

(d) ~~The Coast Guard may elect to inspect equipment and records, including:~~

~~(1) Contents of the TSMS;~~

~~(2) Objective evidence of internal and external audits;~~

~~(3) Objective evidence that non-conformities were identified and corrected; and~~

~~(4) Objective evidence of vessel compliance with applicable regulations.~~

Subpart C--Documenting Compliance

Sec. 138.300 General.

(a) The owner and managing operator must have documentation that demonstrates compliance with the ~~provisions of the Towing Safety Management System (~~TSMS~~)~~ in order for any of its towing vessels to be

Comment [JAC19]: Not necessary to specify these items. Rule already requires that TSMS contain procedures for compliance with all provisions of subchapter.

Comment [JAC20]: Redundant of (c).

Comment [JAC21]: Not sure what this provision does in this context.

Comment [JAC22]: Better addressed elsewhere. Isn't this section really about which TSMS the Coast Guard will accept (e.g., ISM or alternatives such as RCP), and not about verifying compliance with the TSMS?

eligible for a Certificate of Inspection.

(b) The owner or managing operator will be issued a ~~TSMS Certificate~~Towing Company Safety Management System Certificate (TCSMSC) upon completion of a satisfactory audit of its management system by an approved third party organization.~~when it is deemed in compliance with the TSMS requirements.~~

(c)After the owner of managing operator obtains a TCSMSC, each towing vessel will be issued a Towing Vessel Safety Management System Certificate (TVSMSC)upon completion of a satisfactory audit of the vessel by an approved third-party organization.

(d) A towing vessel is eligible to obtain a COI after the owner or managing operator has obtained a TCSMSC and the towing vessel has obtained a TVSMSC.

Sec. 138.305 Towing Company Safety Management System ~~(TSMS)~~ Certificate (TCSMSC).

(a) A Towing Company Safety Management System ~~(TSMS)~~ Certificate (TCSMSC) is obtained through an approved third party organization.

(b) A TCSMSC ~~Certificate~~ is valid for 5 years from the date of issue, unless suspended, revoked or rescinded as provided in section ~~Sec.~~ 138.305(~~c~~d) and (~~d~~e).

(c) ~~The TSMS Certificate must include a list of the owner or managing operator's vessels found in compliance with the TSMS.~~

(d) ~~A TSMS Certificate may be suspended or revoked by the Coast Guard at any time for non-compliance with the requirements of this part.~~

(~~e~~c) The approved third~~-~~ party organization that issued the TCSMSC ~~Certificate~~ may rescind the certificate for non-compliance with the requirements of this part~~.~~, provided the third party submits a report to the owner or managing operator ~~of the vessel(s)~~ that itemizes in detail the grounds for rescinding the ~~TSMS C~~certificate.

(d)A TCSMSC may be suspended or revoked by the Coast Guard at any time for non-compliance with the requirements of this part.

(e) A copy of the TCSMSC must be maintained at the offices of the owner or managing operator.

~~(f) A copy of the TSMS Certificate must be maintained on each towing vessel that has been issued a TSMS or on file at the owner or managing operator's shoreside office.~~

Sec. 138.306. Towing Vessel Safety Management System Certificate (TVSMSC).

(a) A Towing Vessel Safety Management System Certificate (TVSMSC) is obtained through an approved third party organization after the owner or managing operator has obtained a TCSMSC as provided in section 138.305.

Comment [JAC23]: TCSMSC precedes certificates for individual vessels.

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(b) A TVSMSC is valid for 5 years from the date of issue, unless suspended, revoked, or rescinded as provided in section 138.306(c) and (d).

(c) The approved third party organization that issued the TVSMSC may rescind the certificate for non-compliance with the requirements of this part, provided the third party submits a report to the owner or managing operator that itemizes in detail the grounds for rescinding the certificate.

(d) A TVSMSC may be suspended or revoked by the Coast Guard at any time for non-compliance with the requirements of this part.

(e) A copy of the TVSMSC must be maintained on the towing vessel and at the office of the owner or managing operator.

Sec. 138.310 Internal Audits ~~for Towing Safety Management System (TSMS) Certificate~~.

(a) Internal management audits of the owner or managing operator must be conducted annually, within 3 months before or after ~~of~~ the anniversary date ~~issuance~~ of the Towing Company ~~Safety Management System (TSMS)~~ Certificate, to ensure the owner or managing operator is effectively

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implementing all elements of the~~ir~~ TSMS.

(b) The internal ~~management~~ audit must ensure that ~~management has implemented~~ the TSMS has been implemented throughout all levels of the organization and must include ~~,~~ ~~including~~ audits of all ~~the owner or managing operator's~~ towing vessels covered by the TSMS to ensure implementation at the operational level.

(c) The results of internal audits must be documented and maintained for a period of 5 years and made available to the Coast Guard upon request.

(d) Internal auditors:

(1) Must have knowledge of the management, ~~its safety management System~~the TSMS, and the ~~standards contained in~~requirements of this subchapter;and,

~~(insert ISM 12.4??)~~

~~(2) Must have completed an International Organization for Standardization (ISO) 9001-2000 (incorporated by reference in §138.105 of this subchapter) internal auditor/assessor course or Coast Guard recognized equivalent;~~

~~(3) May not be the designated person, or any other person, within the organization that is responsible for development or implementation of the TSMS; and~~

(2~~4~~) Should ~~Must~~ be independent of the procedures being audited~~.~~ ~~;~~

~~and~~

unless this is impracticable due to the size and nature of the company.

Sec. 138.315 External Audits ~~for Towing Safety Management System~~

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Comment [JAC24]: Revised for consistency with ISM Code 12.4.

~~(TSMS) Certificate~~.

External audits for obtaining and renewing a ~~Towing Safety Management System (TSMS) Certificate~~ TCSMSC and a TVSMSC must be ~~are~~ conducted by an approved third party ~~auditor~~organization and must include both the owner's or managing operator's management and towing vessels as follows:

(a) Management audits.

(1) Prior to the issuance ~~of an owner or managing operator's initial and subsequent renewals of a TSMS Certificate~~ or renewal of a TCSMSC, an external management audit of the owner or managing operator must be conducted by an approved third ~~-~~party ~~auditor~~organization.

(2) A mid-period external management audit of the owner or managing operator must be conducted between ~~the~~ 24~~th~~ and 36~~th~~ months after issuance of the TCSMSC. ~~of the certificate's period of validity.~~

(b) Vessel audits. (1) An external audit of each towing vessel subject to the ~~all vessels subject to the owner or managing operator's~~ TSMS must be conducted following issuance of the TCSMSC and ~~-~~prior to ~~the~~ issuance of a~~the initial TSMS Certificate~~ a TVSMSC.

(2) An external audit of all vessels must be conducted ~~during the 5-year period of validity of the TSMS certificate~~ once every 5 years in accordance with section 136.203 of this subchapter. ~~The vessels must be selected randomly and distributed as evenly as possible.~~

(c) Audit results. The results of ~~the~~ external audits must be documented and maintained for a period of 5 years and made available to the Coast Guard or ~~the external auditor~~ approved third party organization upon request.

(d) The ~~COTP~~cognizant OCMI ~~shall have the authority to~~ may extend the time period~~s~~ for ~~the~~an audit~~s~~ required under this section in the event that an approved third party organization is ~~auditors are~~ not available.

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Subpart D--Audits

Sec. 138.400 General.

A~~ll~~ TSMS is ~~safety management systems are~~ subject to internal and external audits to assess ~~the~~ management and towing vessel compliance with the requirements ~~Towing Safety Management System and the vessel standards requirements~~ of this subchapter.

Sec. 138.405 Conduct of internal audits.

(a) Internal audits are conducted by, or on behalf of, the ~~M~~anagement of the owner or managing operator and may be performed by a designated employee or by contracted individual(s) who conduct the audit as if an employee of the

owner or managing operator.

(b) Internal audits are not necessarily conducted as one event; they can be ~~taken~~conducted in segments over time.

(c) Internal audits must be of sufficient depth and breadth to ensure the owner or managing operator has established adequate procedures and documentation to comply with the ~~Towing Safety Management System (~~TSMS~~)~~ ~~requirements of this part~~, that the TSMS was implemented throughout all levels of the owner's or managing operator's organization, and that all towing vessels covered by the TSMS ~~the owner or managing operator's vessels~~ comply with the TSMS and with this subchapter ~~and the TSMS~~.

(e) The auditor must have the authority to examine documentation, question personnel, examine vessel equipment, witness system testing, and observe personnel training as necessary to verify implementation of the TSMS~~-~~ and compliance with this subchapter. ~~effectiveness~~.

Sec. 138.410 Conduct of external audits.

(a) External audits must be conducted by an approved third party organization ~~auditor~~ and cover all elements of the ~~Towing Safety Management System (~~TSMS~~)~~ and the requirements of this s~~S~~ubchapter~~ M~~. External audits ~~of this chapter, but~~ may be conducted on a sampling basis~~ of each of those TSMS elements~~.

(b) External audits must be of sufficient depth and breadth to ensure effective implementation of the ~~owner or operating manager effectively implemented its~~ TSMS throughout all levels of the owner's or managing operator's organization, including ~~onboard its~~all towing vessels covered by the TSMS.

(c) The auditor must be provided access to examine ~~any requested~~ documentation, question personnel, examine towing vessel equipment, witness system testing, and observe personnel training, as necessary to verify implementation of the TSMS~~ effectiveness~~ and compliance with this subchapter.

(d) The auditor may broaden the scope of the audit if:

(1) The TSMS is incomplete or not effectively implemented;

(2) Conditions found are not consistent with ~~the records~~documentation; or

(3) ~~Unsafe~~ Recognized hazardous conditions are identified.

(e) The auditor may verify compliance with the TSMS and the requirements of this subchapter ~~vessel standards and TSMS requirements~~ through a review of objective evidence such as checklists, invoices, and reports, and may conduct a visual inspection on board the towing vessel~~s~~ to determine whether ~~or not the~~ conditions onboard the vessel are consistent with ~~the records~~documentation reviewed.

~~(f) All samples must be statistically valid.~~

(f) Non-conformities and corrective action required.

(1) The approved third party organization must issue a report to the owner or managing operator upon completion of each management

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and vessel audit. The report must include the results of the audit and identification of any non-conformities.

(2) The owner or managing operator must prepare a corrective action plan to address any non-conformities.

(3) The owner or managing operator must notify the auditor when all actions outlined in the corrective action plan have been completed.

(4) The approved third party organization must notify the owner or managing operator and the Coast Guard immediately of any recognized hazardous condition that poses an imminent hazard to personnel, the towing vessel, or the environment.

Subpart E--Coast Guard or Organizational Oversight and Review

Sec. 138.500 Notification prior to audit.

(a) The owner or managing operator of a towing vessel must notify the Coast Guard prior to conducting an external ~~third-party~~ audit of its management or towing vessels as required by this part.

(b) The Coast Guard may require that a Coast Guard representative accompany the auditor during part, or all, of an external audit. Such a requirement will not delay the conduct of the audit.

(c) The Coast Guard may conduct an audit of the owner or managing operator's TSMS or ~~its~~ towing vessels.

Sec. 138.505 Submittal of audit results.

The results of any external audit of the owner or managing operator's TSMS or ~~compliance with Sec. 138.210 of this part and each of their~~ towing vessels audits must be submitted to the Coast Guard upon request.

Sec. 138.510 Required attendance and Coast Guard oversight.

(a) ~~(a)~~ The Coast Guard may:

(1) ~~r~~Require an approved third-party~~'s~~ organization's attendance at the towing vessel or the office of the owner or managing operator if there is evidence of non-compliance with ~~that~~ a ~~Towing Safety Management System (~~TSMS~~)~~, for which a TCSMSC or TVSMSC ~~TSMS Certificate h~~was been issued~~, is not in compliance with the provision of this part~~.

(~~b~~2) Require t~~T~~he approved third~~-~~ party organization and/or the owner or managing operator ~~may be~~to ~~required to~~ explain or ~~otherwise~~ demonstrate ~~areas of~~compliance with the TSMS.

(3)Require a revision of the TSMS if it is determined that requirements of this subchapter are not met.

(4) Require a replacement for an approved third party organization or an auditor for

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noncompliance or poor performance.

(be) The Coast Guard will not bear any of the costs for an approved third-Party organization's attendance at the vessel or the office of the owner or managing operator or replacement of an auditor in accord ~~when complying~~ section 138.510 (a) ~~with this provision~~ of this subchapter.

~~Require a revision of the TSMS if it is determined that requirements of this subchapter are not met.~~

~~(g) Require a replacement for a third-party auditor for noncompliance or poor performance.~~

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PART 139--THIRD- PARTY ORGANIZATIONS

Sec.

[[Page 50020]]

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Sec. 139.100 Purpose.

This part states the requirements applicable to approved third- party organizations that conduct audits and surveys for towing vessels as required by this subchapter.

Sec. 139.105 Definitions.

The definitions provided in ~~Sec.~~ section 136.110 of this subchapter apply to this part.

Sec. 139.110 Organizations not subject to further approval.

(a) A recognized classification society, as defined by 46 CFR 8.100, meets the requirements of an approved third- party organization for the purposes of this part.

(b) Recognized classification societies must ensure that employees providing services under this part hold proper qualifications for the particular type of service being performed.

Sec. 139.112 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. Also, it is available for inspection at U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street, SW., Washington, DC 20593-0001, and is available from the sources listed in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

American National Standards Institute (ANSI), 1819 L Street, NW., Suite 600, Washington, DC 20036
ANSI/ASQC Q9001-2000, 2000 139.120
International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland
ISO 9001-2000, 2000 139.130

Sec. 139.115 General.

(a) The Coast Guard approves third- party organizations to carry out functions related to ensuring that towing vessels comply with provisions of this subchapter. Organizations may be approved to:

(1) Conduct audits of a ~~Towing Safety Management System (~~TSMS~~)~~, and the vessels to which the TSMS applies, to verify compliance with the applicable provisions of this subchapter.

(2) Issue a Towing Company Safety Management System Certificate (TCSMSC) and Towing Vessel Safety Management System ~~TSMS~~ Certificate~~s~~ (TVSMSC) ~~to the owner or managing operator who~~ in accordance with ~~is in compliance with~~ part 138 of this subchapter.

(3) Conduct surveys of towing vessels to verify compliance with the applicable provisions of this subchapter.

(4) Issue survey reports detailing the results of surveys, carried out in compliance with part 137 of this subchapter.

(b) The Coast Guard will approve third- party organizations that:

(1) Are independent of the owner or managing operator and towing vessels
that they audit or survey;
(2) Operate within a quality management system acceptable to the Coast Guard;
(3) Ensure that the organization's auditors and/or surveyors are qualified and maintain continued competence; and
(4) Demonstrate the ability to carry out the responsibilities of approval.
(c) The Coast Guard may designate an organization to be an approved t~~T~~hird ~~-~~party organization when that organization provides objective evidence that it~~s~~
~~program~~ meets the requirements of this ~~subchapter~~part.
(d) A list of approved third~~-~~ party organizations will be maintained by the Coast Guard, and made available upon request.

Comment [WU25]: This should be made available online.

Sec. 139.120 Application for approval as an approved third~~-~~ party organization.

An organization, which may include a business entity or an association, desiring to be approved as an approved third~~-~~ party organization
under this part must submit a written request to Commandant (CG-XXXX), U.S. Coast Guard, 2100
Second Street, SW., Washington, DC 20593-0001. The organization must provide the following information:
(a) A description of the organization, including the ownership, structure, and organizational components.
(b) A general description of the clients being served or intended to be served.
(c) A description of the types of work performed by the organization or by the principals of the organization in the past, noting the amount and extent of such work performed within the previous 3 years.
(d) Objective evidence of an internal quality system based on American National Standards Institute/American Society of Quality Control Q9001-2000 (ANSI) (incorporated by reference in ~~Sec. 138.105~~ section 139.112
of this subchapter) or an equivalent quality standard.
(e) Organization procedures and supporting documentation must describe processes used to perform ~~the~~ audits and/or surveys and records to show system
effectiveness.
(f) Copies of checklists, forms, or other tools to be used as guides or for recording the results of audits and/or surveys.
(g) Organization procedures for appeals and grievances.
(h) The organization's code of ethics applicable to the organization and its auditors and/or surveyors.
(i) Procedures for maintaining a current ~~A~~ list of the organization's auditors and/or surveyors who meet
the requirements of ~~Sec.~~section 139.130 of this subchapter. This list must
include the experience, background, and qualifications for each auditor

Comment [JAC26]: The regulations should specify the program office at Coast Guard headquarters to which such applications must be submitted.

and/or surveyor, and must be made available to the Coast Guard upon request.

(j) A description of the organization's means of assuring continued competence of its personnel.

(k) The organization's procedures for terminating or removing auditors and/or surveyors.

(l) A description of the organization's apprentice or associate program for auditors and/or surveyors.

(m) A statement that the Coast Guard may inspect the organization's facilities and records and may accompany auditors and/or surveyors in the performance of duties related to the requested approval.

(n) Disclosure of any potential conflicts of interest.

(o) A statement that the organization, its managers, and employees engaged in audits and/or surveys are not, and will not be involved in any activities which could result in a conflict of interest or otherwise limit the independent judgment of the auditor and/or surveyor or organization.

(p) Any additional information that the applicant deems pertinent.

Sec. 139.125 Approval of third-party organizations.

(a) The Coast Guard will review the request and notify the organization in writing whether the requested approval is granted.

(b) If a request for approval is denied, the Coast Guard will inform the organization of the reasons for the denial and will describe what

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corrections are required for an approval to be granted.

(c) An approval for an approved third- party organization that meets the requirements of this part will expire:

(1) Five years after the last day of the month in which it is granted;

(2) When the approved third- party organization gives notice that it will no longer offer towing vessel audit and/or survey services;

(3) When revoked by the Coast Guard; in accordance with ~~Sec.~~section 139.150 of this part or;

(4) On the date of a change in ownership of the approved third- party organization for which approval was granted.

Sec. 139.130 Qualifications of auditors and surveyors.

(a) A prospective auditor must demonstrate the skills and experience necessary to assess compliance with all requirements of subchapter M of this chapter.

(b) Auditors must meet the following qualifications:

(1) High school diploma or equivalent;

(2) Four years of experience working on towing vessels or in the barge and towing industry in a capacity whose primary function is prevention of harm to personnel, property, or the environment; or other relevant marine experience including, but not limited to, experience as Coast Guard marine inspector, military personnel with relevant maritime experience, or marine surveyor;

(3) Successful completion of an International Organization for Standardization (ISO) 9001-2000 (incorporated by reference in Sec. 139.112 of this part) lead auditor/assessor course or Coast Guard recognized equivalent;

(4) Successful completion of a required training course for the auditing of a TSMS~~owing Safety Management System~~; and

(5) Audit experience, as demonstrated by one of the following:

(i) Documented experience in auditing the ISM Code or the American Waterways Operators Responsible Carrier Program, consisting of at least two management audits and six towing vessel audits within the past 5 years; or

(ii) Successful completion of a required auditor apprenticeship, consisting of at least one management audit and three towing vessel audits under the direction of a lead auditor.

(c) Surveyors must meet the following qualifications:

(1) High school diploma or equivalent; and

(2) Four years of experience working on towing vessels as master, mate (pilot), or engineer~~,~~ or

~~(3) O~~other relevant marine experience including, but not limited to, experience as a Coast Guard marine inspector, military personnel with relevant maritime experience, marine surveyor, or experience on vessels ~~of similar~~with operating and physical characteristics similar to those of towing vessels; ~~or~~and,

(3) Surveying experience, as demonstrated by one of the following:

(i) Documented experience in conducting marine surveys, consisting of at least 5 marine surveys within the last 5 years; or,

(ii) Successful completion of a surveyor apprenticeship, consisting of at least four marine surveys under the direction of a lead surveyor; and

(4) Successful completion of an International Organization for Standardization (ISO 9001-2001) (incorporated by reference in section 139.112 of this subchapter) lead auditor/assessor course or Coast Guard-accepted equivalent.

(~~4~~5) A m~~M~~arine surveyor accredited by the National Association of Marine Surveyors, Society of Accredited Marine Surveyors, or other accreditation acceptable to the Coast Guard will satisfy the requirements of 139.130(c)(3) and (4).

Sec. 139.135 ~~Addition and removal~~ List of auditors and surveyors.

(a) An approved third~~-~~ party organization must maintain a list of current and former auditors and surveyors, along with objective evidence that each auditor or surveyor meets or met the qualification requirements of section 139.130 of this subchapter.

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(b) The list of current and former auditors and surveyors must be provided to the Coast Guard upon request. ~~To add an auditor or surveyor, the organization must submit the experience, background and qualifications to the Coast Guard for approval.~~

(c) The Coast Guard must be notified when an auditor or surveyor is removed from employment due to performance, disciplinary action, conflict of interest, violation of the organization's code of ethics, or failure to follow the approved third party organization's policies and procedures.

Sec. 139.140 Renewal of approved third~~-~~ party organization approval.

(a) To renew an approval, an approved third~~-~~ party organization must submit a written request to the address listed in ~~Sec.~~section ~~-~~139.120 of this part.

(b) For the request to be approved, the Coast Guard must be satisfied that the applicant continues to fully meet approval criteria.

(c) The Coast Guard may request any additional information necessary to properly evaluate the request.

Comment [JAC27]: Again, section 139.120 should be amended to specify the program office at Coast Guard headquarters to which applications or requests for renewal should be sent.

Sec. 139.145 Suspension of approval.

(a) The Coast Guard may suspend the approval of an approved third~~-~~ party organization approved under this part whenever the Coast Guard determines that the approved third~~-~~ party organization does not comply with the provisions of this part. The Coast Guard must:

(1) Notify the approved third~~-~~ party organization in writing of ~~the~~its intention to suspend the approval;

(2) Provide the details of the approved third~~-~~ party organization's failure to comply with this part; and

(3) Advise the approved third~~-~~ party organization of the time period, not to exceed 60 days, within which the approved third~~-~~ party organization must correct its failure to comply with this part. If the approved third~~-~~ party organization fails to ~~correct its failure to~~submit evidence that it has corrected the deficiency and complies ~~comply~~ with this part within the time period allowed, the approval will be suspended.

(b) The Coast Guard may partially suspend the approval of an approved third~~-~~ party organization. This may include suspension of an individual auditor or surveyor or suspension of the authority of the approved third~~-~~ party organization to carry out specific duties whenever the Coast Guard determines that the provisions of this part are not complied with. The Coast Guard must:

(1) Notify the approved third~~-~~ party organization in writing of its intention to partially suspend the approval;

(2) Provide the details of the failure of the auditor or surveyor to comply with this part, or of the approved third party organization's failure to comply with this part with respect to such auditor or surveyor; and

(3) Advise the approved third- party organization of the time period, not to exceed 60 days, within which the approved third- party organization must ensure that the auditor or surveyor corrects his/her failure to comply with this part. If the approved third- party organization fails to correct the failure of the auditor or surveyor to comply with this part within the time period allowed, the approval will be partially suspended with respect to such auditor or surveyor.

Sec. 139.150 Revocation of approval.

The Coast Guard may revoke the approval of an approved third- party organization if the approved third party organization has demonstrated a pattern or history of:

(a) Failure to comply with this part;

(b) Substantial deviations from the terms of the approval granted under this part; or

(c) Failures of~~, including~~ ethics or performance or ~~,~~ conflicts of interest ~~or performance,~~ that indicate to the Coast Guard that the approved third- party organization is no longer capable of carrying out its duties as an approved third- party organization.

Sec. 139.155 Appeals of suspension or revocation of approval.

Anyone directly affected by a decision to suspend or revoke an approval granted under this part may appeal the decision to the Coast Guard in accordance with the provisions of 46 CFR part 1.

Sec. 139.160 Coast Guard oversight activities.

At any time the Coast Guard may:

(a) Inspect ~~a~~ the records of an approved third -party organization~~'s records~~ or applicant for approval as an approved third party organization under this part;

(b) Conduct interviews of auditors or surveyors to aid in the evaluation of the organization;

(c) Assign Coast Guard personnel to observe or participate in audits or surveys;

(d) Observe audits or surveys conducted by the third-party organization; or,

(e) Request that the owner or managing operator of a towing vessel make available~~,~~ a copy of the ~~Towing Safety Management System (~~TSMS~~); or~~.

(f) ~~Require a revision of the TSMS if it is determined that requirements of this subchapter are not met.~~

~~(g) Require a replacement for a third-party auditor for noncompliance or poor performance.~~

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Sec. 139.165 Documentation.

(a) Each approved third~~-~~ party organization must retain the results of each survey or audit conducted under its approval, including:

(1) The names of the auditors and/or surveyors;

(2) The results of each audit or survey conducted;

(3) Documentation ~~showing continuing actions relative to an audit or survey, such as resolution of deficiencies and non-conformities~~ of compliance with 138.410(f) of this subchapter with respect to non-conformities and corrective action; and

(4) Results of audits of the approved third party organization.

(b) Records required by this part must be retained for a period of 5 years.

Sec. 139.170 Required attendance.

(a) The Coast Guard may require an approved third~~-~~ party organization's attendance at a towing vessel or the offices of the owner or managing operator in the following circumstances:

(1) When there is evidence that the ~~Towing Safety Management System (~~TSMS~~)~~ for which a TCSMSC ~~TSMS Certificate~~ was issued is not in compliance with the provisions of part 138 of this subchapter.

(2) When there is evidence that a towing vessel for which a TVSMSC was issued is not in compliance with the TSMS or the requirements of this subchapter.

(3~~2~~) When there is objective evidence that a towing vessel that was surveyed by the~~a~~ approved third~~-~~ party organization is not in compliance with the requirements of this subchapter.

(b) The Coast Guard will not bear any costs for an approved third party organization's attendance at the vessel or the offices of the owner or managing operator when complying with this provision.

PART 140--OPERATIONS

Subpart A--General

Sec.

140.100 Purpose.

140.105 Definitions.

Subpart B--General Operational Safety

~~140.200 Towing Safety Management System (TSMS).~~

Comment [JAC28]: Moved to 138.510 since these seem to fit better with Coast Guard oversight of the owner/managing operator's TSMS compliance, rather than oversight of the approved third-party organization.

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Subpart J--Penalties
140.1000 Statutory penalties.
140.1005 Suspension and revocation.

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 140.100 Purpose.

This part contains the health, safety, and operational requirements for towing vessels and the crewmembers serving onboard them.

Sec. 140.105 Definitions.

The definitions provided in ~~Sec.~~ section 136.110 of this subchapter apply
to this part.

Subpart B--General Operational Safety

~~Sec. 140.200 Towing Safety Management System (TSMS).~~

~~If a Towing Safety Management System (TSMS) is applicable to the vessel, the TSMS must:~~
~~(a) Include policies and procedures to ensure compliance with this part; and~~
~~(b) Provide objective evidence that documents compliance with the TSMS.~~

Comment [JAC29]: Redundant of 138.220.

Sec. 140.205 General vessel operation.

(a) A towing vessel must be operated in accordance with applicable laws
and regulations and in such a manner as to afford protection against hazards to life, property, and the environment.
(b) A t~~T~~owing vessel~~s with a TSMS~~ must be operated in accordance with the TSMS applicable to the towing vessel.
(c) A towing v~~V~~essels must be manned in accordance with the Certificate of
Inspection (COI). Manning requirements are contained in part 15 of this chapter.
(d) Each crewmember that is required to hold a Merchant Mariner Credential (MMC) must have the credential onboard and available for examination at all times when the towing vessel is operating.
(e) All individuals onboard the towing vessel who are not required to hold an MMC ~~permitted~~
~~onboard the vessel~~ must have and present on request a valid personal identification that meets the requirements set forth in 33 CFR 101.105.

Sec. 140.210 Responsibilities of the master and crew.

(a) The safety of the towing vessel is the responsibility of the master and includes:
(1) Adherence to the provisions of the Certificate of Inspection (COI);
(2) Compliance with the applicable provisions of this subchapter;
(3) Compliance with the ~~Towing Safety Management System (~~TSMS~~)~~ applicable to the towing vessel~~, if one is applicable~~; and
(4) Supervision of all persons onboard in carrying out their assigned duties.
(b) If the master believes it is unsafe for the towing vessel to proceed,
that an operation endangers the towing vessel or crew, or that an unsafe condition exists, the master must ensure that adequate corrective action is taken and must not proceed until it is safe to do so.
(c) Nothing in this subpart shall be construed in a manner which limits the master or mate (pilot), at his or her own responsibility, from diverting from the route prescribed in the COI or taking such steps as he deems necessary and prudent to assist vessels in distress or for other emergency conditions.
(d) It is the responsibility of the crew to:
(1) Adhere to the provisions of the COI;
(2) Comply with the applicable provisions of this subchapter;
(3) Comply with the TSMS applicable to the towing vessel~~, if the vessel has a TSMS~~;
(4) Ensure that the master is made aware of all known aspects of the condition of the towing vessel, including:

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(i) ~~Those vessels~~ Barges or other vessels being pushed, pulled, or hauled alongside; and
(ii) Equipment and other accessories used for pushing, pulling, or hauling along~~-~~side~~ other vessels~~.
(5) Report unsafe conditions to the master and take the most effective action to prevent accidents.

Subpart C--[Reserved]

Subpart D--Crew Safety

Sec. 140.400 Personnel records.

(a) The master of each towing vessel must keep an accurate list of crewmembers and their positions.
(b) The master must maintain a list of individuals other than crewmembers carried onboard
the towing vessel.
(c) The date and time that a ~~navigation watchstander, including~~

master~~,~~ or mate (pilot)~~, and lookout~~ assumes a navigation watch and is relieved of a
watch must be recorded in the towing vessel record (TVR) or the official logbook, or in accordance with the TSMS applicable to the towing vessel. If an engineering watch is maintained, comparable records documenting the engineering watch are required.

Sec. 140.405 Emergency duties and duty stations.

(a) Any towing vessel with alternating watches (shift work) or overnight accommodations must identify the duties and duty stations of each person onboard during an emergency, including:
(1) Responding to fires and flooding;
(2) Responding to emergencies that necessitate abandoning the towing vessel;
(3) Launching survival craft and rescue boats;
(4) Taking action during heavy weather;
(5) Taking action in the event of a person overboard;
(6) Taking action relative to the tow;
(7) Taking action in the event of failure of propulsion, steering, or control system;
(8) Managing individuals carried onboard ~~who~~that are not crewmembers;
(9) Managing any other event or condition which poses a threat to life, or property; and
(10) Responding to other special duties essential to addressing emergencies as determined by the TSMS applicable to the towing vessel~~, if a TSMS is used~~.
(b) The emergency duties and duty stations required by this section must be posted at the operating station and in a conspicuous location in a space commonly visited by crewmembers. If posting is impractical, such as in an open boat, they may be kept onboard in a location readily available to the crew.

Sec. 140.410 Safety orientation for crewmembers.

(a) Upon initial employment, or prior to getting underway for the first time on a particular towing vessel, each crewmember must receive a safety orientation on the following subjects:
(1) His or her duties in an emergency;
(2) The location, operation, and use of lifesaving equipment;
(3) Prevention of falls overboard;
(4) Personal safety measures;
(5) The location, operation, and use of Personal Protective Equipment (PPE);
(6) Emergency egress procedures;
(7) The use and operation of watertight and weathertight closures;
(8) Responsibilities to provide assistance to individuals that are not crewmembers;
(9) How to respond to emergencies relative to the tow; and
(10) Awareness of, and expected response to, any other hazards inherent to the operation of the towing vessel which may pose a threat

to life, property, or the environment.

(b) The safety orientation provided to crewmembers who received a safety orientation on another towing vessel may be modified to cover only those areas unique to the new towing vessel on which service will occur.

(c) Safety orientations ~~and other crew training~~ must be documented in the ~~towing vessel record (~~TVR~~)~~, official logbook, or in accordance with the TSMS applicable to the vessel. The entry must include the following information:

(1) Date of the safety orientation ~~or training~~;

(2) General description of the safety orientation ~~or training topics~~;

(3) Name of individual(s) providing the orientation ~~or training~~; and

(4) Name(s) of the individual(s) receiving the safety orientation ~~or training~~.

Comment [JAC30]: Not germane to this section. Training is covered in 140.420.

Sec. 140.415 Safety o~~O~~rientation for individuals that are not crewmembers.

(a) Individuals carried onboard a towing vessel ~~,~~ that are not crewmembers~~, onboard a towing vessel~~ must receive a safety orientation prior to getting underway or as soon as practicable thereafter. The safety orientation must ~~to~~ include:

(1) The location, operation, and use of lifesaving equipment;

(2) Emergency procedures;

(3) Methods to notify crewmembers in the event of an emergency; and

(4) Prevention of falls overboard.

(b) ~~[Reserved]~~A safety orientation need not be provided to an individual that is a not a crewmember if that individual is accompanied while on board the towing vessel by a crewmember who is familiar with the items in section 140.415(a) of this part.

Sec. 140.420 Emergency drills and training.

(a) The master of a towing vessel must ensure that drills are conducted and instructions are given to ensure that all crewmembers are capable of performing the duties expected of them during emergencies. This includes abandoning the towing vessel, recovering persons from the water, responding to onboard fires and flooding, or responding to other threats to life, property, or the environment.

(b) Each drill must, as far as practicable, be conducted as if there was an actual emergency.

(c) Unless otherwise stated, each crewmember must receive the training required by this section annually.

(d) The following training or drills are required:

(1) Safety orientation, as required by ~~Sec.~~ section 140.410 of this part;

(2) Emergency drills and training, as required by this section;

(3) Training on response to fires, as required by ~~Sec.~~ section 142.245 of this subchapter;

(4) Training on launching of a skiff, if carried aboard the towing vessel and listed in the TSMS as an item of emergency equipment to abandon ship or for the ~~man overboard~~ recovery of a person overboard;

(5) ~~If installed, t~~Training on the use of ~~davit-launched liferafts~~survival craft, if carried onboard; and

(6) ~~If installed, t~~Training on how each rescue boat must be launched, with its assigned crew aboard, and maneuvered in the water as if during an actual ~~man~~ person overboard situation~~.~~, if a rescue boat is carried onboard.

(e) Alternative forms of instruction.

(1) Training as required by this part may be conducted by viewing electronically or digitally formatted training materials followed by a discussion led by ~~someone~~ a person familiar with the subject matter. This instruction may occur either onboard or off the towing vessel.

(2) Training that is conducted by viewing electronically or digitally formatted materials need not be followed by a discussion led by a person familiar with the subject matter if the electronic or digital medium used allows for recording grades or scores at the completion of the training and the individual receiving the training scores higher than a minimum threshold set forth in the TSMS applicable to the towing vessel.

(3~~2~~) Training may be performed in accordance with the TSMS applicable to the towing vessel, provided that it meets the minimum requirements of this section.

(f) Participation in drills and training. As far as practicable, drills must take place onboard the towing vessel. They must include:

(1) Participation by all crewmembers; and

(2) Actual use of, or simulating the use of, emergency equipment.

(g) Recording of drills and training. Drills and training must be recorded in the ~~towing vessel record~~TVR or official logbook, or in accordance with the TSMS applicable to the towing vessel. The record must include the date of the drill and training, a description of the drill scenario and training topics, and the ~~personnel~~crewmembers involved.

Sec. 140.425 Fall overboard protection.

(a) The owner or managing operator of a towing vessel must establish procedures to address fall overboard prevention and recovery of persons in the water, including, but not limited to:

(1) Personal protective equipment;

(2) Safely working on the towing vessel and tow;

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(3) Safety while line handling;

(4) Safely moving between the towing vessel and a tow, pier, structure, or other vessel; and

(5) Use of person in the water retrieval equipment.

(b) The owner, managing operator, and master must ensure that all

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persons onboard comply with the policies and procedures in this section.

Sec. 140.430 Wearing of work vests.

(a) ~~—~~Personnel dispatched from the towing vessel or that are working in an area on the exterior of the towing vessel without rails at least 30 inches in height ~~and~~or guards at least 39 inches in height must wear one of the following:

~~a~~

(1) a lifejacket meeting the requirements ~~in~~of 46 CFR 141.340;

(2) ~~,~~ an immersion suit meeting the requirements ~~in~~of 46 CFR 141.350; ~~, or~~

(3) ~~a~~ work vest approved by the Commandant under 46 CFR ~~subpart~~ 160.053~~.~~; or,

(4) A type III personal flotation device approved by the Commandant under 46 CFR 160.076-7.

(b) When worn at night, a~~the~~ work vest must be equipped with a light that meets the requirements of 46 CFR 141.340(c)(a).

(c) Work vests may not be substituted for the lifejackets required by 46 CFR part 141.

(~~b~~d) ~~Each storage container containing a work vest must be marked ``WORK VEST.''~~Work vests must be stored separately from other required lifesaving equipment.

Sec. 140.435 First aid equipment.

(a) Each towing vessel must be equipped with ~~an industrial type~~ a first aid cabinet or kit, appropriate to the size of the crew and operating conditions. Each towing vessel operating on oceans, coastwise, or Great Lakes routes must have a means to take blood pressure readings, splint broken bones, and apply large bandages for serious wounds.

(b) Each towing vessel, other than an excepted towing vessel, with alternating watches (shift work) and overnight accommodations must be provided with an Automatic External Defibrillator (AED).

(c) At least two crewmembers must be trained in the use of ~~an~~ythe AED in accordance with manufacturer's recommendations for the type of AED carried onboard.

Subpart E--Safety and Occupational Health

Sec. 140.500 General.

(a) No later than 3 years after the effective date of a final rule, the owner or managing operator must implement an occupational health and safety plan.

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Comment [JAC31]: Incorrect citation.

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Comment [JAC32]: Towing vessels do not have stowage lockers specifically for work vests.

The plan may be included as part of the owner or managing operator's TSMS and must include recordkeeping procedures. Records must document compliance with this part.

(b) The owner, managing operator, and master must ensure that all persons onboard a towing vessel comply with the occupational health ~~and safety~~ plan.

Sec. 140.505 General occupational health and safety requirements.

(a) The owner or managing operator must implement procedures for reporting unsafe conditions and must have records of the activities conducted under this section.

(b) All towing vessel equipment must be used in accordance with the manufacturer's recommended practice ~~and in a manner that minimizes risk of injury or death~~. This includes machinery, deck machinery, towing gear, ladders, embarkation devices, cranes, portable tools, and safety equipment.

(c) All machinery and equipment that is not in proper working order (including missing or malfunctioning guards or safety devices) must be removed; made safe through marking, tagging, or covering; or otherwise made unusable.

(d) Personal Protective Equipment (PPE)--(1) Appropriate PPE must be made available and on hand for all personnel engaged in an activity that requires the use of PPE.

(2) PPE must be suitable for the vessel's intended service; meet the standards of 29 CFR 1910 subpart I; and be used, cleaned, maintained, and repaired in accordance with manufacturer's requirements.

(3) All individuals must wear PPE appropriate to the activity being performed.

(4) All personnel ~~engaged in an activity~~ must be trained in the proper use, limitations, and care of the PPE specified by this subpart for the activities in which they are engaged.

(e) The towing vessel, including crew's quarters and the galley, must be kept in a sanitary condition.

Sec. 140.510 Identification and mitigation of occupational health and safety hazards.

(a) The owner or managing operator must implement procedures to identify and mitigate occupational health and safety hazards, including but not limited to the following hazards:

(1) Tools and equipment, including deck machinery, rigging, welding and cutting, hand tools, ladders, and abrasive wheel machinery found onboard the towing vessel;

(2) Slips, trips, and falls;

(3) Working aloft;

(4) Hazardous materials;

(5) Confined space entry;

(6) Blood-borne pathogens and other biological hazards;
(7) Electrical;
(8) Noise;
(9) Falls overboard;
(10) Towing v~~V~~essel embarkation and disembarkation (including pilot transfers);
(11) Towing gear, including winches, capstans, wires, hawsers and other related equipment;
(12) Personal hygiene; and
(13) Sanitation and safe food handling.
(b) As far as practicable, the owner or managing operator must implement other types of safety control measures before relying on ~~Personal Protective Equipment~~PPE. These controls may include administrative, engineering, source modification, substitution, process change or controls, isolation, ventilation, or other controls.

Sec. 140.515 Training requirements.

(a) All crewmembers must be provided with occupational health and safety
information and training that includes:
(1) Content and procedures of the owner or managing operator's occupational health and safety plan;
(2) Procedures for reporting unsafe conditions;
(3) Proper selection and use of ~~Personal Protective Equipment (~~PPE~~)~~ appropriate to the towing vessel operation;
(4) Safe use of equipment including deck machinery, rigging, welding and cutting, hand tools, ladders, and abrasive wheel machinery found onboard the towing vessel;
(5) Hazard communication and cargo knowledge;
(6) Safe use and storage of hazardous materials and chemicals;
(7) Confined space entry;
(8) Respiratory protection;
(9) Lockout/Tagout procedures;
(10) Working aloft.
(b) Individuals~~, other than~~ carried onboard the towing vessel that are not crewmembers~~,~~ must be provided with
sufficient information or training on hazards relevant to their potential exposure on or around the towing vessel.
(c) Crewmember training required by this section must be conducted as soon as practicable, but not later than 5 days after employment.
(d) Refresher training must be repeated as provided in the TSMS, but no less frequently than once every 5 years, ~~annually~~ and may be conducted over time in modules covering specific topics. Refresher training may be less comprehensive, provided that the information presented is sufficient to provide employees with continued understanding of work place hazards. The refresher training of persons subject to this subpart must include the information and training prescribed in ~~Sec.~~ ~~140.515 of~~ this section.
(e) ~~The owner, managing operator, or master must determine the appropriate training and information to provide to each individual permitted on the vessel who is not a crewmember, relative to the expected risk exposure of the individual.~~

Comment [JAC33]: Redundant of (b) above.

(f) All training required in this section must be documented in accordance with the TSMS applicable to the towing vessel. ~~owner or managing operator records.~~

~~Sec. 140.520 Personnel hazard exposure and medical records.~~

~~(a) The owner or managing operator must:~~

~~[[Page 50025]]~~

~~(1) Maintain medical records for each employee for at least 6 years following employment;~~
~~(2) Ensure that access is provided in a reasonable time, place, and manner, whenever an employee, or a person designated in writing to represent the employee, requests access to a record. If the owner or managing operator cannot reasonably provide access to the record within 15 working days, the owner or managing operator must apprise the employee or designated representative of the reason for the delay and the earliest date when the record can be made available.~~
~~(b) Whenever an employee requests access to his or her employee medical records, and a physician representing the owner or managing operator believes that direct employee access to information contained in the records regarding a specific diagnosis of a terminal illness or a psychiatric condition could be detrimental to the employee's health, the owner or managing operator may inform the employee that access will be provided only to a designated representative of the employee having specific written consent, and may deny the employee's request for direct access to this information only. Where a designated representative with specific written consent requests access to information so withheld, the owner or managing operator must ensure the access of the designated representative to this information, even when it is known that the designated representative will give the information to the employee.~~

Comment [JAC34]: This section is no longer applicable in the age of HIPAA. Employers do not retain medical records regarding diagnoses of employees that employees have not seen.

Subpart F~~--~~ Towing Vessel Operational Safety

Sec. 140.600 Applicability.

This subpart applies to all towing vessels subject to this subchapter unless otherwise specified. Certain towing vessels remain subject to the navigation safety regulations in 33 CFR part 164.

Sec. 140.605 Towing v~~V~~essel stability.

(a) A towing vessel with a stability letter must be maintained and operated in accordance with its stability letter.
(b) A towing vessel without a stability letter must be maintained and operated so the watertight integrity and stability of the towing vessel is not compromised.

(c) Prior to getting underway, and at all other times necessary to ensure the safety of the towing vessel, the master must determine that the towing vessel complies with all ~~applicable~~ stability requirements in the towing vessel's trim and stability book, stability letter, COI, and Load Line Certificate, as applicable to the towing vessel. The towing vessel will not get underway until the master determines that the towing vessel complies with these requirements.

Sec. 140.610 Hatches and other openings.

(a) All towing vessels must be operated in a manner that minimizes the risk of down-flooding and progressive flooding.

(b) The master must ensure that all hatches, doors, and other openings that were installed to be watertight and weathertight ~~hatches, doors, and other openings~~ are ~~-~~functioning properly.

(c) Hatches and openings of the hull and deck must be kept tightly closed except:

(1) When access is needed through the opening for transit;

(2) When operating on rivers with a tow, if the master determines the safety of the towing vessel is not compromised; or

(3) When operating on lakes, bays, and sounds~~, without a tow~~ during calm weather, and only if the master determines that the safety of the towing vessel is not compromised.

(d) Where installed, all watertight doors in watertight bulkheads must be closed when the master deems necessary during the operation of the towing vessel, unless they are being used for transit between compartments or for ventilation; and

(e) When downstreaming, all ~~exterior openings at~~watertight doors and hatches on the main deck level must be closed.

Sec. 140.615 Tests and inspections.

(a) This section only applies to a towing vessel not subject to 33 CFR 164.80.

(b) Prior to getting underway, the master of the towing vessel must examine and test the steering gear, signaling whistle, propulsion control, towing gear, navigation lights, navigation equipment, and communication systems of the vessel. This examination and testing does not need to be conducted more than once in any 24-hour period.

(c) The results of the inspection must be recorded in the ~~towing vessel record~~TVR or official logbook, or in accordance with the TSMS applicable to the vessel.

Sec. 140.620 Navigational safety equipment.

(a) This section applies to a towing vessel not subject to the requirements of 33 CFR 164.82.

(b) The owner, managing operator, or master of each towing vessel

must maintain the required navigational-safety equipment in a fully-functioning, operational condition.

(c) Navigational safety equipment that fails during a trip or voyage must be repaired at the earliest practicable time. The owner, managing operator, or master must consider the state of the equipment (along with such factors as weather, visibility, traffic, and the dictates of good seamanship) when deciding whether it is safe for the towing vessel to proceed.

(d) The failure and subsequent repair or replacement of navigational-safety equipment must be recorded. The record must be made in the official logbook, ~~towing vessel record~~TVR, or in accordance with the TSMS ~~Towing Safety Management System~~ applicable to the towing vessel.

Sec. 140.625 Navigation underway.

(a) This section applies to all towing vessels subject to this subchapter. Certain towing vessels are also subject to the requirements of 33 CFR 164.78.

(b) At all times, the movement of a towing vessel and its tow must be under the direction and control of a master or mate (pilot) properly licensed under subchapter B of this chapter.

(c) The master or mate (pilot) must ensure that the towing vessel and its tow are operated in a manner that does not pose a threat to life, property, or the environment. Special attention should be paid to:

(1) The velocity and direction of currents in the area being transited;

(2) Tidal state;

(3) Prevailing visibility and weather conditions;

(4) Density of marine traffic;

(5) Potential damage caused by the towing vessel's own wake or that of its tow;

(6) The danger of each closing visual or radar contact;

(7) Water depth or river stage upon the route and at mooring location;

(8) Air draft relative to bridges and overhead obstructions;

(9) Bridge transits;

(10) Lock transits;

(11) Other navigation hazards such as logs, wrecks or other obstructions in the water;

(12) Handling characteristics of the towing vessel and tow; and

(13) Magnetic variation and deviation errors of the compass, if installed.

~~Sec. 140.630 Lookout.~~

~~(a) Throughout the trip or voyage the master and mate (pilot) must assess the requirement for a lookout. A lookout should be added when necessary to:~~

Comment [JAC35]: The requirements for determining lookouts are defined in Rule 5 of the Inland Navigation Rules and COLREGS. No other class of inspected vessels has such an additional requirement regarding lookouts.

~~(1) Maintain a state of vigilance with regard to any significant change in the operational environment;~~
~~(2) Appraise the situation and the risk of collision/allision;~~
~~(3) Anticipate stranding and other dangers to navigation; and~~
~~(4) Detect any other potential hazards to safe navigation.~~
~~(b) In determining the requirement for a lookout, the person in charge of the navigation watch must take full account of relevant factors including, but not limited to: State of weather, visibility, traffic density, proximity of dangers to navigation, and the attention necessary~~

~~[[Page 50026]]~~

~~when navigating in areas of increased vessel traffic.~~

Sec. 140.635 Navigation watch assessment.

Comment [JAC36]: Revised to be consistent with 2008 version favorably reviewed by TSAC.

(a) This section applies to all towing vessels subject to this subchapter. Additionally, some towing vessels remain subject to the requirements of 33 CFR 164.80.
(b) Prior to assuming a navigation watch or getting underway on a trip or voyage that is expected to last 24 hours or more, or ~~assuming a navigation watch~~, the person in charge of the navigation watch must conduct a navigation assessment for the ~~intended route~~trip or voyage. ~~The navigation assessment shall be used to assess operational risks, maintain situational awareness, and anticipate and manage workload demands.~~ The assessment must consider the following factors, as applicable:
(1) Compliance with applicable provisions of the ~~Towing Safety Management System~~TSMS applicable to the towing vessel~~, if the vessel has a TSMS~~;
(2) Waterway conditions, including anticipated current direction and speed, water depth, vessel traffic, and information contained in relevant notice(s) to mariners;
(3) Existing and forecasted weather for the intended ~~route~~trip or voyage;
(4) Maneuvering characteristics of the towing vessel and tow, taking into account tow configuration, horsepower, and any auxiliary steering units and assist vessels;
(5) Potential waterway obstacles such as bridges, dams and locks, wrecks and other obstructions, reported shoaling, and a determination as to whether adequate air-draft clearance, under-keel clearance, and horizontal clearance exist;
~~(6) Anticipated workload caused by the nature of the towing vessel's functions, immediate operating requirements, and anticipated maneuvers;~~
~~(7) Any other relevant standard, procedure or guidance relating to watchkeeping arrangements and fitness for duty;~~
~~(8) The knowledge and qualifications of crewmembers who are assigned as members on watch;~~
~~(9) The experience and familiarity of crewmembers with the towing vessel's equipment, procedures, and maneuvering capability;~~

~~(10) The activities taking place onboard the towing vessel and the tow;~~

~~(11) Availability of assistance to be summoned immediately to the pilothouse when necessary;~~

~~(12) The operational status of pilothouse instrumentation and controls, including alarm systems;~~

~~(13) Size of the towing vessel and tow and the field of vision available from the operating station;~~

~~(14) The configuration of the pilothouse, to the extent that such configuration may inhibit a member of the watch from detecting by sight or hearing any external development;~~ and

(~~15~~6) Any special conditions not covered above that impact the safety of navigation.

(c) At each change of the navigation watch, the oncoming watch must ensure that the navigation risk assessment is current and valid.

(d) The assessment must be updated as necessary, such as when significant changes occur to the tow configuration, ~~route~~trip or voyage, weather or other ~~routine~~ conditions.

(e) When an assessment is updated, the person in charge of the navigation watch must ensure that any changes are communicated to other watchstanders.

(f) The assessment must be recorded in the ~~Towing Vessel Record (~~TVR~~)~~, official logbook, or~~, if the vessel has a Towing Safety Management System (TSMS), then~~ in accordance with the TSMS applicable to the vessel. The entry must include: The date and time of the assessment, the name of the individual making the assessment, and the starting and ending points of the ~~voyage or~~ trip or voyage that the assessment covers.

~~Sec. 140.640 Pilothouse resource management.~~

Comment [JAC37]: Redundant of 140.635 and 140.645.

~~This section applies to all towing vessels.~~

~~(a) The person in charge of the navigation watch must:~~

~~(1) Ensure that other members of the navigation watch:~~

~~(i) Share a common understanding of the navigational risks associated with the intended trip or voyage, and of agreed procedures of transit;~~

~~(ii) Understand the chain of command and the way decisions are made and responded to; and~~

~~(iii) Understand how and when to share information critical to the safety of the vessel throughout the trip or voyage.~~

~~(2) Ensure that the planned route is:~~

~~(i) Clearly displayed (in print or electronically) on charts or maps as appropriate in the pilothouse;~~

~~(ii) Continuously available to crewmembers with duties related to the safe navigation of the towing vessel, to verify any question or uncertainty on the course to be followed or to identify hazards to safe navigation; and~~

~~(iii) Updated as necessary at any change of watch, route, condition, and operational requirements during the voyage or trip.~~

~~(3) Ensure that watch change procedures provide a review of:~~

~~(i) Information critical to the safety of voyage (trip);~~

~~(ii) Procedures used to identify hazards to navigation; and~~

~~(iii) Information sharing procedures.~~
~~(4) Avoid handing over the watch if:~~
~~(i) There is reason to believe that the oncoming watchstander is not capable of carrying out the watchkeeping duties effectively; or~~
~~(ii) The night vision of the oncoming watchstander has not fully adjusted prior to assuming a night watch.~~
~~(b) Prior to assuming duties as person in charge of the navigation watch, a person must:~~
~~(1) Verify the planned route, taking into consideration all pertinent information to anticipate hazards to navigation safety;~~
~~(2) Verify the operational condition of the towing vessel; and~~
~~(3) Verify that there are adequate personnel available to assume the watch.~~
~~(c) If at any time the licensed mariner on watch is to be relieved when a maneuver or other action to avoid any hazard is taking place, the relief of that licensed mariner shall be deferred until such action has been completed.~~

Sec. 140.645 Navigation safety training.

(a) Prior to assuming duties related to the safe navigation of a towing vessel, each crewmember must receive training to ensure that they are familiar with:
(1) Watchstanding terms and definitions;
(2) Duties of a lookout, including procedures for reporting other vessels or objects;
(3) Communication with other watchstanders;
(4) Change of navigation watch procedures;
~~(5) Procedures for reporting other vessels or objects;~~ and
(6) Watchstanding safety.
(b) Crewmember navigation safety training must be recorded in the TVR ~~towing vessel record~~ or official logbook, or~~, if the vessel has a Towing Safety Management System (TSMS), then~~ in accordance with the TSMS applicable to the towing vessel.

Sec. 140.650 Operational readiness of lifesaving and fire suppression and detection equipment.

The owner, managing operator, or master of a towing vessel must ensure that the towing vessel's lifesaving and fire suppression and detection
equipment complies with the applicable requirements of parts 141 and 142 of this subchapter and are in good working order.

Sec. 140.655 ~~Prevention of oil and garbage p~~Pollution prevention.

(a) Each towing vessel must be operated in compliance with:
(1) Applicable sections of the Federal Water Pollution Control Act, including Section 311 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1321);

[[Page 50027]]

(2) Applicable sections of The Act to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.); and
(3) Parts 151, 155, and 156 of 33 CFR, as applicable.
(b) Each towing vessel must be capable of preventing all oil and fuel spills from reaching the water during transfers by:
(1) Pre-closing of the scuppers/freeing ports, if the towing vessel is so equipped;
(2) Using fixed or portable containment of sufficient capacity to contain the most likely spill; or
(3) Pre-deploying sorbent material on the deck around vents and fills.
~~(c) No person may intentionally drain oil or hazardous material into the bilge of a towing vessel from any source.~~

Comment [JAC38]: Not necessary; already a requirement under 33 CFR 155.70.

Sec. 140.660 Towing ~~V~~vessel security.

Each towing vessel must be operated in compliance with:
(a) Applicable provisions of t~~T~~he Maritime Transportation Security Act of 2002 (46 U.S.C.
chapter 701); and
(b) 33 CFR parts 101 and 104, as applicable. Subpart G--Navigation and Communication Equipment.

Sec. 140.700 Applicability.

This subpart applies to all towing vessels subject to this subchapter unless otherwise
specified. Certain towing vessels ~~will~~ also remain subject to the navigation safety regulations in 33 CFR part 164.

Sec. 140.705 Charts and nautical publications.

(a) This section applies to a towing vessel not subject to the requirements of 33 CFR 164.72.
(b) A towing vessel must carry adequate and up-to-date information and equipment for the intended trip or voyage, including:
(1) Marine c~~C~~harts or maps of the areas to be transited, including electronic charts or maps acceptable to the Coast
Guard, of appropriate scale to make safe navigation possible. Towing vessels operating on the ~~w~~Western ~~r~~Rivers must have maps of appropriate scale issued by the Army Corps of Engineers (ACOE) or river authority;
(2) ``U.S. Coast Pilot'' or similar publication, except for towing vessels operating on Western Rivers;
(3) Coast Guard light list; and
(4) For t~~T~~owing vessels that operate on the ~~w~~Western ~~r~~Rivers, ~~must have~~
river stage(s) or Water Surface Elevations (WSE) ~~as appropriate to~~for the trip or route, ~~as~~ published by the U.S. Army Corps of Engineers~~,~~ or a

river authority, must be available to the person in charge of the navigation watch.

(c) Extracts or copies from the publications listed in paragraph (b) of this section may be carried, so long as they are applicable to the ~~route~~trip or voyage.

Sec. 140.710 Marine radar.

Requirements for marine radar are set forth in 33 CFR 164.72.

Sec. 140.715 Communications equipment.

(a) Towing vessels must meet the communications requirements of 33 CFR part 26 and 33 CFR 164.72, as applicable.

(b) Towing vessels not subject to the provisions of 33 CFR part 26 and 33 CFR 164.72 must have a Very High Frequency-Frequency Modulated (VHF-FM) radio installed and capable of monitoring VHF-FM Channels 13 and 16, except when transmitting or receiving traffic on other VHF-FM channels, when participating in a Vessel Traffic Service (VTS), or when monitoring a channel of a VTS. The VHF-FM radio must be installed at the operating station and connected to a functioning battery backup.

(c) All towing vessels must have at least one properly operating handheld VHF-FM radio in addition to the radios otherwise required.

Sec. 140.720 Navigation lights, shapes, and sound signals.

Each towing vessel must be equipped with navigation lights, shapes, and sound signals in accordance with the International Regulations for Prevention of Collisions at Sea (COLREGS) or 33 CFR part 84 as appropriate to its area of operation.

Sec. 140.725 Additional navigation equipment.

(a) This section applies to all towing vessels. Some towing vessels ~~will~~ also remain subject to the requirements of 33 CFR 164.72.

(b) Towing vessels must be equipped with the following equipment, as applicable to the area of operation:

(1) Fathometer (except Western Rivers and those waters specified by 33 CFR 89.25 and 89.27);

(2) Search light, controllable from the towing vessel's main steering station and capable of illuminating objects at a distance of at least two times the length of the tow;

(3) Electronic position-fixing device, satisfactory for the area in which the towing vessel operates, if the towing vessel engages in towing seaward of the navigable waters of the U.S. or more than 3 nautical miles from shore on the Great Lakes;

(4) Magnetic compass or, for towing vessels operating on Western Rivers only, ~~—~~an illuminated swing-meter ~~(Western rivers vessels only)~~. The compass or swing-meter must be readable from the

Comment [JAC39]: As written, NPRM definition of Western Rivers does not include the other waters specified by 33 CFR 89.25 and 89.27. If the Coast Guard accepts our recommended change to the definition of Western Rivers, this revision will not be necessary.

towing vessel's main steering station; and
(5) Certain towing vessels must also meet the Automatic Identification System requirements of 33 CFR 164.46.

Subpart H--Towing Safety

Sec. 140.800 Applicability.

This subpart applies to all towing vessels subject to this subchapter unless otherwise specified. Certain towing vessels ~~will~~ remain subject to the navigation safety regulations in 33 CFR parts 163 and 164.

Sec. 140.801 Towline and terminal ~~Towing~~ gear for towing astern.

~~The owner, managing operator, or master of a towing vessel must ensure that:~~
~~(a) The strength of each component used for securing the towing vessel to the tow and for making up the tow is adequate for its intended service.~~
~~(b) The size, material, and condition of towlines, lines, wires, push gear, cables, and other rigging used for making up a tow or securing the towing vessel to a tow must be appropriate for:~~
~~(1) The horsepower or bollard pull of the vessel;~~
~~(2) The static loads and dynamic loads expected during the intended service;~~
~~(3) The environmental conditions expected during the intended service; and~~
~~(4) The likelihood of mechanical damage.~~
~~(c) Emergency procedures related to the tow have been developed and appropriate training provided to the crew for carrying out their emergency duties.~~

(a) *Towline.* The owner, master, or operator of each towing vessel towing astern shall ensure that the strength of each towline is adequate for its intended service, considering at least the following factors:

(1) The size and material of each towline must be—

(i) Appropriate for the horsepower or bollard pull of the towing vessel;

(ii) Appropriate for the static loads and dynamic loads expected during the intended service;

(iii) Appropriate for the sea conditions expected during the intended service;

Comment [JAC40]: Copied over from 33 CFR 164.74. The term "company" is changed here to "owner or managing operator" for consistency with terminology used throughout this subchapter.

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(iv) Appropriate for exposure to the marine environment and to any chemicals used or carried on board the towing vessel;

(v) Appropriate for the temperatures of normal stowage and service on board the towing vessel;

(vi) Compatible with associated navigational-safety equipment; and

(vii) Appropriate for the likelihood of mechanical damage.

(2) Each towline as rigged must be—

(i) Free of knots;

(ii) Spliced with a thimble, or have a poured socket at its end; and

(iii) Free of wire clips except for temporary repair, for which the towline must have a thimble and either five wire clips or as many wire clips as the manufacturer specifies for the nominal diameter and construction of the towline, whichever is more.

(3) The condition of each towline must be monitored through the—

(i) Keeping on board the towing vessel or in the owner's or managing operator's files a record of the towline's initial minimum breaking strength as determined by the manufacturer, by a classification ("class") society authorized in 33 CFR 157.04, or by a tensile test that meets API Specification 9A, Specification for Wire Rope, Section 3; ASTM D 4268 (incorporated by reference, see 33 CFR 164.03), Standard Test Method for Testing Fiber Ropes; or Cordage Institute CIA 3, Standard Test Methods for Fiber Rope Including Standard Terminations;

(ii) If the towline is purchased from another owner, master, or operator of a towing vessel with the intent to use it as a towline or if it is retested for any reason, keeping on board the towing vessel or in the owner's or managing operator's files of a record of each retest of the towline's minimum breaking strength as determined by a class society authorized in accordance with 33 CFR 157.04 or by a tensile test that meets API Specification 9A, Section 3; ASTM D 4268 (incorporated by reference, see 33 CFR 164.03) or Cordage Institute CIA 3, Standard Test Methods;

(iii) Conducting visual inspections of the towline in accordance with the manufacturer's recommendations, or at least monthly, and whenever the serviceability of the towline is in doubt (the inspections being conducted by the owner or managing operator or master, or by a person on whom the owner, master, or operator

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Comment [JAC41]: Need to also incorporate these standards by reference at the beginning of this part.

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confers the responsibility to take corrective measures appropriate for the use of the towline);

(iv) Evaluating the serviceability of the whole towline or any part of the towline, and removing the whole or part from service either as recommended by the manufacturer or a class society authorized in 33 CFR 157.04 or in accordance with a replacement schedule developed by the owner or managing operator or master that accounts for at least the—

(A) Nautical miles on, or time in service of, the towline;

(B) Operating conditions experienced by the towline;

(C) History of loading of the towline;

(D) Surface condition, including corrosion and discoloration, of the towline;

(E) Amount of visible damage to the towline;

(F) Amount of material deterioration indicated by measurements of diameter and, if applicable, measurements of lay extension of the towline; and

(G) Point at which a tensile test proves the minimum breaking strength of the towline inadequate by the standards of paragraph (a)(1) of this section, if necessary; and

(v) Keeping on board the towing vessel or in the owner or managing operator's files a record of the material condition of the towline when inspected under paragraphs (a)(3)(iii) and (iv) of this section. Once this record lapses for three months or more, except when a towing vessel is laid up or out of service or has not deployed its towline, the owner, master, or operator shall retest the towline or remove it from service.

(b) *Terminal gear.* The owner or managing operator or master of each towing vessel towing astern shall ensure that the gear used to control, protect, and connect each towline meets the following criteria:

(1) The material and size of the terminal gear are appropriate for the strength and anticipated loading of the towline and for the environment;

(2) Each connection is secured by at least one nut with at least one cotter pin or other means of preventing its failure;

(3) The lead of the towline is appropriate to prevent sharp bends in the towline from fairlead blocks, chocks, or tackle;

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(4) There is provided a method, whether mechanical or non-mechanical, which does not endanger operating personnel but that reliably releases the towline;

(5) The towline is protected from abrasion or chafing by chafing gear, lagging, or other means;

(6) Except on board a towing vessel towing in ice on Western Rivers or one using a towline of synthetic or natural fiber, there is fitted a winch that evenly spools and tightly winds the towline; and

(7) If a winch is fitted, there is attached to the main drum a brake that has holding power appropriate for the horsepower or bollard pull of the vessel and can be operated without power to the winch.

140.802. Towline and terminal gear for towing alongside and pushing ahead.

The owner or managing operator or master of each towing vessel towing alongside or pushing ahead shall ensure that the face wires, spring lines, and push gear used:

(a) Are appropriate for the towing vessel's horsepower;

(b) Are appropriate for the arrangement of the tow;

(c) Are frequently inspected; and

(d) Remain serviceable.

Sec. 140.805 Towing safety.

Prior to getting underway, and giving due consideration to the prevailing and expected conditions of the trip or voyage, the person in charge of the navigation watch for a towing vessel must ensure that:

(a) The barges or vessels making up the tow are properly configured and secured;

(b) Equipment, cargo, and industrial components onboard the tow are properly secured and made ready for transit;

(c) The towing vessel is safely and securely made up to the tow; and

(d) The towing vessel has appropriate horsepower or bollard pull and is capable of safely maneuvering the tow.

Sec. 140.810 Towing of barges.

The requirements of 33 CFR part 163 also apply to certain towing vessels.

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Comment [JAC42]: The term "easily" is used in 33 CFR 164.74. Recommend "reliably" instead.

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Comment [JAC43]: Copied over from 33 CFR 164.76.

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~~Sec. 140.815 Examination of towing gear.~~

~~(a) The owner, managing operator, or master of a towing vessel must ensure that a visual examination of all towing gear is conducted prior to placing it into service and at least once every 30 days while in service. The visual~~

~~[[Page 50028]]~~

~~examination must include, but is not limited to:~~
~~(1) Towlines, bridles, face wires, spring lines, push gear, and other components used for towing or pushing;~~
~~(2) Wires, shackles, and other components used for making up a tow; and~~
~~(3) Winches, bits, cleats, and other towing vessel components.~~
~~(b) Any component found to be unsuitable must be removed from service or repaired prior to use.~~

~~Sec. 140.820 Recordkeeping for towing gear.~~

~~(a) The results of the visual examination, as outlined in Sec. 140.815 of this subpart, must be documented in the Towing Vessel Record or official logbook, or, if the vessel has a Towing Safety Management System (TSMS), then in accordance with the TSMS applicable to the vessel.~~
~~(b) A record of the type, size, and service of each towline, bridle, face wire, and spring line must be available to the Coast Guard or third-party auditor for inspection.~~

Subpart I~~—~~ Towing Vessel Records

Sec. 140.900 Marine casualty reporting.

Each towing vessel must comply with the requirements of part 4 of this chapter for reporting marine casualties and retaining voyage records.

Sec. 140.905 Official logbooks.

(a) A towing vessel subject to this subchapter, except a towing vessel on a voyage from a port in the United States to a port in Canada, is ~~The following vessels are~~ required by 46 U.S.C. 11301 to have an official logbook if the towing vessel is:
(1) ~~A vessel of the United States, except one on a voyage from a port in the United States to a port in Canada, if the vessel is:~~
~~(i~~(1)~~)~~ On a voyage from a port in the United States to a foreign port; or
(~~ii~~2) Of at least 100 gross tons and on a voyage between a port in the United States on the Atlantic Ocean and one on the Pacific Ocean.

Comment [JAC44]: Delete – redundant of 140.801 and 140.802 above.

~~(2) [Reserved]~~

(b) The Coast Guard furnishes, without fee, to masters of vessels of the United States the official logbook as Form CG-706B or CG-706C, depending on the number of persons employed as crew. The first several pages of this logbook list various acts of Congress governing logbooks and the entries required in them.

(c) When a voyage is completed, or after a specified time has elapsed, the master must file the official logbook containing required entries with the cognizant Officer in Charge, Marine Inspection at or nearest the port where the towing vessel may be.

Sec. 140.910 Towing ~~v~~Vessel ~~r~~Record~~s~~ (TVR).

(a) This section applies to a towing vessel other than an excepted towing vessel, a towing vessel operating only in a limited geographic area, or a towing vessel required by ~~Sec.~~section ~~–~~140.905 of this subpart to maintain an official logbook.

(b) A towing vessel subject to this section must maintain a ~~Towing Vessel Record (~~TVR~~)~~ or~~, if the vessel has a Towing Safety Management System (TSMS), then~~ another record as provided in accordance with the TSMS applicable to the towing vessel.

(c) The TVR may be either electronic or paper and must include a chronological record of events as required by this subchapter. ~~They may be electronic or paper.~~

(d) Except as required by 46 CFR 140.900 and 144.905 of this subchapter, records do not need to be filed with the Coast Guard, but must be kept available for review by the Coast Guard upon request. Records, unless required to be maintained for a longer period by statute or other Federal regulation, must be retained for at least 1 year after the date of the latest entry.

Sec. 140.915 Items to be recorded.

The following list of items must be recorded in the official logbook, ~~Towing Vessel Record (~~TVR~~)~~ or~~, if the vessel has a Towing Safety Management System (TSMS), then the~~ in accordance with the TSMS applicable to the towing vessel:

(a) Personnel records, in accordance with ~~Sec.~~ section 140.400 of this part;

(b) Safety orientation, in accordance with ~~Sec.~~ section 140.410 of this part;

(c) Record of drills and training, in accordance with ~~Sec.~~ section 140.420 of this part;

(d) Operative navigational-safety equipment, in accordance with ~~Sec.~~ section 140.620 of this part;

(e) Navigation watch a~~A~~ssessment, in accordance with ~~Sec.~~ section 140.635 of this

part;
(f) Navigation safety training, in accordance with ~~Sec.~~ section 140.645 of this part; and
(g) Towing gear, in accordance with ~~Sec.~~ section 140.820 of this part.
(h) Oil residue discharges and disposals, in accordance with ~~Sec.~~ section 140.655 of this part.

Subpart J--Penalties

Sec. 140.1000 Statutory penalties.

Violations of the provisions of this subchapter will subject the violator to the applicable penalty provisions of Subtitle II of Title 46, and Title 18, United States Code.

Sec. 140.1005 Suspension and revocation.

An individual is subject to proceedings under the provisions of 46 U.S.C. 7703 and part 5 of this chapter with respect to suspension or revocation of a license, certificate, document, or credential if the individual holds a license, certificate of registry, merchant mariner document, or merchant mariner credential and;
(a) Commits an act of misconduct, negligence or incompetence;
(b) Uses or is addicted to a dangerous drug; or
(c) Violates or fails to comply with this subchapter or any other law or regulation intended to promote marine safety.

PART 141--LIFESAVING

Subpart A--General
Sec.
141.100 Purpose.
141.105 Applicability.
141.110 Organization of this part.
141.115 Definitions.
141.120 Incorporation by reference.
Subpart B--General Requirements for Towing Vessels
~~141.205 Towing Safety Management System (TSMS).~~
141.215 [Reserved].
141.220 General provisions.
141.225 Alternative requirements.
141.230 Readiness.
141.235 Examination, testing, and maintenance.
141.240 Training r~~R~~equirements for ~~training~~ crewmembers.
Subpart C--Lifesaving Requirements for Towing Vessels
141.305 Survival craft requirements for towing vessels.
141.310 Stowage of survival craft.
141.315 Marking of survival craft and stowage locations.
141.320 Inflatable survival craft placards.
141.325 Survival craft equipment.

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; Sec. 609 of Pub. L. 111-281; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 141.100 Purpose.

This part contains requirements for lifesaving equipment, arrangements, systems, and procedures on towing vessels.

Sec. 141.105 Applicability.

(a) This part applies to all towing vessels subject to this subchapter.

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(b) A towing vessel on an international voyage, subject to the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, must meet the applicable requirements in subchapter W of this chapter.

(c) Towing vessels in compliance with SOLAS will be deemed in compliance with this part.

Sec. 141.110 Organization of this part.

(a) Certain sections in this part contain functional requirements. Functional requirements describe the desired objective of the regulation. A towing vessel must meet the applicable functional requirements.

(b) Certain sections may also contain a prescriptive option to meet the functional requirements. A towing vessel that meets the prescriptive option will have complied with the functional requirements.

(c) If an owner or managing operator chooses to meet the functional requirement through means other than the prescriptive option, the means must be documented in the TSMS applicable to the towing vessel and accepted by ~~the cognizant Officer in Charge, Marine Inspection or, if the vessel has a Towing Safety Management System (TSMS), then by~~

~~an~~ approved third~~-~~ party organization auditing the TSMS. ~~and documented in the TSMS~~
~~applicable to the vessel~~.

Sec. 141.115 Definitions.

The definitions provided in Sec. 136.110 of this subchapter apply to this part.

Sec. 141.120 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of the change in the Federal Register and make the material available for inspection. All approved material is available at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street, SW., Washington, DC 20593-0001, or from the sources indicated in paragraph (b) of this section, or at the National Archives and Records Administration (NARA). For more information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal regulations/ibr_locations.html.

(b) The material approved for incorporation by reference in this part and the sections affected are:

International Maritime Organization (IMO)	
Resolution A.760(18)--Symbols related to Life-Saving Appliances and Arrangements, 1993.....	141.340

Subpart B--General Requirements for Towing Vessels

~~Sec. 141.205 Towing Safety Management System (TSMS).~~

~~If a Towing Safety Management System (TSMS) is applicable to the towing vessel, the TSMS must:~~
~~(a) Include policies and procedures to ensure compliance with this part; and~~
~~(b) Provide objective evidence that documents compliance with the TSMS.~~

Comment [JAC45]: Redundant of 138.220.

Sec. 141.215 [Reserved]

Sec. 141.220 General provisions.

(a) Unless otherwise specified, all lifesaving equipment must be of an approved type.

(b) Where equipment in this subpart is required to be of an approved type, such equipment requires the specific approval of the Coast Guard. A listing of approved equipment and materials may be found at http://cgmix.uscg.mil/equipment. Each cognizant Officer in Charge, Marine Inspection (OCMI) may be contacted for information concerning approved equipment and materials.

Sec. 141.225 Alternative requirements.

(a) A towing vessel may meet the requirements of this part by being equipped with appropriate alternate arrangements or equipment as permitted by this ~~sub~~part and~~, for vessels with a TSMS,~~ documented in the TSMS applicable to the vessel.

(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require a towing vessel to carry specialized or additional lifesaving equipment if:

(1) The cognizant OCMI determines that the conditions of the voyage render the requirements of this part inadequate; or

(2) The towing vessel is operated in globally remote areas or severe environments not covered under this part. Such areas may include, but are not limited to, Polar Regions, remote islands, areas of extreme weather, and other remote areas where timely emergency assistance cannot be anticipated.

Sec. 141.230 Readiness.

The master must ensure that all lifesaving equipment is properly maintained and ready for use at all times.

Sec. 141.235 Examination, testing, and maintenance.

(a) All lifesaving equipment must be tested and maintained in accordance with the minimum requirements of ~~Sec.~~ section 199.190 of this chapter and~~, if the vessel has a Towing Safety Management System (TSMS),~~ with the TSMS applicable to the towing vessel.

(b) The records of tests and examinations must be maintained in accordance with the TSMS applicable to the towing vessel~~, if the vessel has a TSMS, or with the towing vessel record or the vessel's official logbook~~. The following minimum information is required:

(1) The dates when tests and examinations were performed, the number and/or other identification of each unit tested and examined, and the name(s) of the person(s) and/or approved third-party ~~auditor~~organization conducting the tests and examinations.

(2) Receipts and other records documenting these tests and examinations must be retained and made available upon request.

Sec. 141.240 Training r~~R~~equirements for ~~training~~ crewmembers~~s~~.

Comment [JAC46]: Can specify in TSMS where the records will be kept, which does not preclude logbook or TVR.

Training requirements for crewmembers are contained in part 140 of this subchapter.

Subpart C--Lifesaving Requirements for Towing Vessels

Sec. 141.305 Survival craft requirements for towing vessels.

(a) General purpose. Survival craft provide a means for survival when evacuation from the towing vessel is necessary. The survival craft and related equipment should be selected so as to provide for the basic needs of the crew, such as shelter from life-threatening elements, until rescue resources are expected to arrive, taking into account the scope and nature of the towing vessel's operations.

(b) Functional requirements. A towing vessel's survival craft must meet the functional requirements of paragraphs (b)(1) through (5) of this section. The design, testing, and examination scheme for meeting these functional requirements must be documented in the TSMS applicable to the towing vessel. ~~submitted as part of any Towing Safety Management System (TSMS) issued under part 138 of this chapter.~~ Survival craft must:

(1) Be readily accessible;

(2) Have an aggregate capacity to accommodate the total number of individuals onboard, as specified in paragraph (c) of this section;

(3) Provide a means for sheltering its complement appropriate to the route;

(4) Provide minimum equipment for survival if recovery time is expected to be greater than 24 hours; and

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(5) Be marked so that an individual not familiar with the operation of the specific survival craft has sufficient guidance to utilize the craft for its intended use.

(6) By 2015, no survival craft may be approved unless the craft ensures that no part of an individual is immersed in water.

(c) Prescriptive requirements. Compliance with the functional requirements of paragraph (b) of this section may be met by meeting the prescriptive requirements of this paragraph.

(1) Except as provided in paragraphs (c)(2) through (~~5~~7) of this section, each towing vessel must carry the survival craft specified in Table 141.305 of this section, as appropriate for the towing vessel, in an aggregate capacity to accommodate the total number of individuals onboard. Equipment requirements are based on the area in which a towing vessel is operating, not the route for which it is certificated; however, the towing vessel must be equipped per the requirements of its certificated route at the time of certification.

Table 141.305--Survival Craft

Area of operation						
	Great Lakes and LBS	Coastwise and Ltd. coastwise				
						Limited geographic area
Rivers	< 3 miles from shore	> 3 miles from shore	< 3 miles from shore	> 3 miles from shore	Oceans	
COLD WATER OPERATION						
Buoyant Apparatus						\1\
Life Float						\1\
Inflatable Buoyant Apparatus						\1\ \2\ \4\ \5\ \6\ 100%
Inflatable Liferaft with SOLAS A Pack			\2\	\2\	\2\	\1\ 100%
Inflatable Liferaft with SOLAS B Pack			100%	100%	100%	\1\
WARM WATER OPERATION						

Buoyant Apparatus					\1\ \2\ \4\ \5\ \6\ 100%	\2\
Life Float					\1\	100%
Inflatable Buoyant Apparatus					\1\	100%
Inflatable Liferaft with SOLAS A Pack					\1\	100%
Inflatable Liferaft with SOLAS B Pack					~~\1\~~ \3\	100%

~~\1\ Unless survival craft requirements are determined to be necessary by the cognizant OCMI or a TSMS applicable to the towing vessel.~~

\2\ A skiff may be substituted for all or part of required equipment if capable of being launched within five minutes under all circumstances (see ~~Sec.~~section 141.330).

\3\ IBA may be accepted or substituted if the vessel carries a 406 MHz Cat 1 EPIRB meeting 47 CFR Part 80.

\4\ A towing vessel may be exempt from this requirement if it carries a 406 MHz Cat 1 EPIRB meeting 46 CFR 47 Part 80.

\5\ A towing vessel need not carry survival craft ~~designed for~~ when pushing ahead ~~when operating~~ on ~~r~~Rivers and ~~canals~~Western Rivers ~~need not carry survival craft~~. ~~if a TSMS applicable to the towing vessel contains procedures for evacuating crewmembers onto the tow or other safe location.~~

\6\ Not required for excepted towing vessels and towing vessels operating within a limited geographic areas ~~within 1 mile of shore unless determined to be necessary by the cognizant OCMI or a TSMS applicable to the towing vessel~~.

(2) A towing vessel may continue to use a survival craft, other than an inflatable liferaft, installed onboard the vessel before [EFFECTIVE DATE OF FINAL RULE] provided it is of the same type as required in Table 141.305 of this section, as appropriate for the vessel type and maintained in good and serviceable condition.

(3) A towing vessel may continue to use an inflatable liferaft installed onboard the vessel before [EFFECTIVE DATE OF FINAL RULE], provided it is equipped with the equipment pack required in Table Sec. 141.305 of this section, as appropriate for the vessel type and maintained in good and serviceable condition.

(4) An approved lifeboat may be substituted for any survival craft required by this section, provided it is arranged and equipped in accordance with part 199 of this chapter.

(5) A towing vessel need not carry survival craft when pushing ahead on Rivers and Western Rivers.

(6~~5~~) ~~Each~~Excepted towing vessels and towing vessels operating within a limited geographic area need not carry a survival craft ~~unless it is determined to be necessary by the cognizant Officer in Charge, Marine Inspection, or a TSMS applicable to the towing vessel~~.

(7~~6~~) By 2015, no survival craft may be approved unless the craft ensures that no part of an individual is immersed in water.

Comment [JAC47]: Copied from footnotes to make these important caveats more prominent.

Sec. 141.310 Stowage of survival craft.

Survival craft may be stowed in accordance with the ~~Towing Safety Management System~~ TSMS applicable to the towing vessel, but must~~, at a minimum,~~ meet the requirements of ~~Sec.~~section ~~-~~199.130 of this chapter, as far as is practicable on existing towing vessels.

Sec. 141.315 Marking of survival craft and stowage locations.

Survival craft may be marked in accordance with the ~~Towing Safety Management System~~TSMS applicable to the towing vessel, but must, at a minimum, meet the requirements of ~~Sec. Sec.~~sections 199.176 and 199.178 of this chapter.

Sec. 141.320 Inflatable survival craft placards.

Every towing vessel equipped with an inflatable survival craft must have approved placards or otherwise post instructions for launching and inflating inflatable survival craft in conspicuous places near each inflatable survival craft for the information of persons onboard.

Sec. 141.325 Survival craft equipment.

(a) Each item of survival craft equipment must be of good quality, effective for the purpose it is intended to serve, and secured to the craft.

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(b) Each towing vessel carrying a lifeboat must carry equipment in accordance with 46 CFR 199.175.

(c) Each life float and buoyant apparatus must be fitted with a lifeline, pendants, a painter, and floating electric water light approved under subpart 161.010 of this chapter.

Sec. 141.330 Other survival craft.

A skiff may be substituted for all or part of the approved survival craft as permitted by Table 141.305 (in ~~Sec.~~section ~~—~~141.305) of this part.

The skiff must meet the following requirements:

(a) Must be capable of being launched within 5 minutes under all circumstances.

(b) Must be of suitable size for all persons onboard;

(c) Must not exceed the loading specified on the capacity plate;

(d) Must not contain modifications affecting the buoyancy or structure of the skiff;

(e) Must be of suitable design for the towing vessel's intended service;

approval by the Coast Guard is not required; and

(f) Must be marked in accordance with 46 CFR part 178 and 46 CFR 199.176.

(g) By 2015, no survival craft may be approved unless the craft ensures that no part of an individual is immersed in water.

Sec. 141.335 Personal lifesaving requirements for towing vessels.

Personal lifesaving requirements are summarized in Table 141.335 of this section. Equipment requirements are based on the area in which a towing vessel is operating, not the route for which it is certificated.

Table 141.335--Personal Lifesaving Equipment

Area of Operation				
Great Lakes and LBS	Coastwise and Ltd. coastwise Limited			
	geographic area	Rivers	< 3 miles from Oceans	> 3 miles from Oceans
shore	shore	shore	shore	
Lifejackets.....	1 per person....	1 per person onboard. In addition, for vessels with berthing aboard, 1 per watch stander~~—located at~~ ~~each watch station~~ in readily accessible locations as specified in the TSMS applicable to the towing vessel.		

Immersion Suits..... 1 per person onboard. In addition, see 141.350(a)(2).	.....	.....
Work Vests..... vessel.	Required to be worn when dispatched from the towing vessel or working without rails and guard on the exterior of the	

Sec. 141.340 Lifejackets.

Each towing vessel must meet the requirements of 46 CFR 199.70(b) and (d), except that:

(a) A lifejacket meeting the requirements of 46 CFR 199.620(c) is acceptable.

(b) Child lifejackets are not required.

(c) For towing vessels with berthing aboard, a sufficient number of additional lifejackets must be carried so that a lifejacket is immediately available for persons at each normally manned watch station.

(d) ~~If a Towing Safety Management System (~~ The TSMS~~) is~~ applicable to the towing vessel~~, the TSMS~~ may provide for an appropriate, alternative number of lifejackets for the towing vessel, but there must be at least one lifejacket for each person onboard. ~~Any~~The TSMS ~~applicable to the towing vessel~~ must specify the number and location of lifejackets in such a manner as to facilitate immediate accessibility at normally occupied spaces including, but not limited to, accommodation spaces and watch stations.

(e) The requirements of 46 CFR 199.70(b)(2)(iii) do not apply to stowage positions for lifejackets, other than lifejackets stowed in a berthing space or stateroom.

(f) Each lifejacket container must also be marked in block capital letters and numbers with the minimum quantity, identity, and, if sizes other than adult or universal sizes are used on the towing vessel, the size of the lifejackets stowed inside the container. The equipment may be identified in words or with the appropriate symbol from IMO Resolution A.760(18) incorporated by reference in ~~Sec.~~ section 141.120 of this part); ~~and~~

(g) Open racks used for lifejacket storage need not be labeled if the lifejackets are clearly visible.

(~~g~~h) Where, due to the particular arrangements of the towing vessel, the lifejackets under paragraph (a) of this section could become inaccessible, ~~any~~the TSMS applicable to the vessel may include suitable

alternative arrangements.

(~~h~~i) A lifejacket light described in 46 CFR 199.620(e) may be used on towing vessels that are not in international service.

Sec. 141.345 Lifejacket placards.

(a) Placards containing instructions for the donning and use of the lifejackets aboard the towing vessel must be available to all persons on board the vessel~~posted in conspicuous places for all persons onboard~~.

~~(b) If there is no suitable mounting surface, the lifejacket placards must be available to all persons onboard for familiarization.~~

Sec. 141.350 Immersion suits.

(a) General. Except for a towing vessel operating on rivers or in a limited geographic area, each towing vessel operating north of 32 degrees North latitude or south of 32 degrees South latitude must carry the number of immersion suits ~~as~~ prescribed in this subsection:

(1) At least one immersion suit, approved under subpart 160.171 of this chapter, ~~must be~~of the appropriate size for each person onboard, as noted in Table 141.335 (in ~~Sec.~~section~~–~~ 141.335) of this part; and

(2) In addition to the immersion suits required under paragraph (a)(1) of this section, each watch station, work station, and industrial work site must have enough immersion suits to equal the number of persons normally on watch in, or assigned to, the station or site at one time. However, an immersion suit is not required at a station or site for a person whose cabin or berthing area (and the immersion suits stowed in that location) is readily accessible to the station or site.

(3) ~~If a TSMS is applicable to the towing vessel, t~~The TSMS applicable to the towing vessel may provide for an appropriate, alternative number of immersion suits for the towing vessel, but there must be at least one immersion suit of the appropriate size for each person onboard if the towing vessel is required to carry them as prescribed in paragraph (a)(1) of this section. ~~Any~~The TSMS ~~applicable to the towing vessel~~ must specify the number and location of the immersion suits in such a manner as to facilitate immediate accessibility at normally occupied spaces, including

[[Page 50032]]

but not limited to, accommodation spaces and watch stations.

(b) Attachments and Fittings. Immersion suits must carried on towing vessels must meet the requirements of 46 CFR 199.70(c) and (d).

Sec. 141.360 Lifebuoys.

(a) A towing vessel must have one or more lifebuoys as follows:

(1) ~~A towing vessel less than 26 feet length must carry a minimum~~

~~of one lifebuoy of not less than 510 millimeters (20 inches) in diameter;~~

(2) A towing vessel of at least 26 feet, but less than 79 feet, in length must carry a minimum of ~~three~~2 lifebuoys located in positions to be spread around the towing vessel where personnel are normally present. Lifebuoys must be at least 610 millimeters (24 inches) in diameter;

(3) A towing vessel 79 feet or more in length must carry 4~~four~~ lifebuoys, ~~plus~~including 1~~one~~ lifebuoy on each side of the primary operating station and 1~~one~~ lifebuoy at each alternative operating station if the towing vessel is so equipped. Lifebuoys must be at least 610 millimeters (24 inches) in diameter; ~~or~~

(4) ~~If a Towing Safety Management System (~~The TSMS~~) is~~ applicable to the towing vessel~~, the TSMS~~ may provide for an appropriate, alternative number of lifebuoys for the towing vessel. ~~Any~~The TSMS ~~applicable to the towing vessel~~ must specify the number and location of lifebuoys in such a manner as to facilitate rapid deployment of ~~ring~~ lifebuoys from exposed decks, including the pilot house.

(b) Each lifebuoy on a towing vessel must meet the requirements of 46 CFR 199.70(a), except that:

(1) Lifebuoys must be orange in color, if on a towing vessel on an oceans or coastwise route.

(2) At least 2~~two~~ lifebuoys on a towing vessel greater than 26 feet, except a towing vessel operating solely on Western Rivers, must be fitted with a floating electric water light approved under subpart 161.010 of this chapter. If the towing vessel is limited to daytime operation, no floating electric water light is required. If the lifebuouy is fitted with lifelines, the ~~The~~ floating electric water light may not be attached to the ~~lifebuoys fitted with~~ lifelines.

(3) Each lifebuoy with a floating electric water light must have a lanyard of at least 910 millimeters (3 feet) in length, but not more than 1,830 millimeters (6 feet), securing the water light around the body of the ~~ring~~ lifebuoy.

(4) Each floating electric water light on a towing vessel carrying only 1~~one~~ lifebuoy must be attached by the lanyard with a corrosion-resistant clip to allow the water light to be quickly disconnected from the ~~ring~~ life buoy. The clip must have a strength of at least 22.7 kilograms (50 pounds).

Sec. 141.365 Means for recovery of persons in the water.

~~If a Towing Safety Management System (~~The TSMS~~) is~~ applicable to the towing vessel~~, the TSMS~~ must include procedures for the prompt recovery of a person from the water and for the training of crewmembers responsible for recovery in effectively implementing such procedures.

Sec. 141.370 Miscellaneous lifesaving requirements for towing vessels.

Miscellaneous lifesaving requirements are summarized in Table 141.370 of this section. Equipment requirements are based on the area in which a towing vessel is operating, not the route for which it is certificated.

Table 141.370--Miscellaneous Lifesaving Equipment

Area of operation	Great Lakes and LBS	Coastwise and Ltd. Coastwise Limited			
	geographic area	Rivers	< 3 miles from shore	> 3 miles from shore	Oceans
Visual Distress Signals (Sec. 141.375).	3 and 3 parachute flares.	3 and 3 parachute flares.	6 and 6; or 12 parachute flares.	3 and 3 parachute flares.	6 and 6; or 12 parachute flares.
EPIRBS (Sec. 141.380)				Yes	Yes, Type Accepted
Category 1. Line Throwing Appliances (Sec. 141.385).					Yes, 1.

Sec. 141.375 Visual distress signals.

(a) A towing vessel oOperating more than 3 nautical miles from shore on oceans and other bodies of water. A towing vessel operating on oceans, coastwise, limited coastwise, Great Lakes, or lakes, bays and sounds must carry:

(1) Six hand red flare distress signals, as approved under 46 CFR subpart 160.021 or other standard specified by the Coast Guard; and

(2) Six hand orange smoke distress signals, as approved under 46 CFR 160.037 or other standard specified by the Coast Guard.

(b) Operating on rivers and other bodies of water. A towing vessel operating on rivers or western rivers, and not more than 3 nautical miles from shore upon limited coastwise, gGreat lLakes or lakes, or bays and sounds, must carry:

(1) Three hand red flare distress signals, as approved under 46 CFR subpart 160.021 or other standard specified by the Coast Guard.

(2) Three hand orange smoke distress signals, as approved under 46 CFR subpart 160.037 or other standard specified by the Coast Guard.

(c) An excepted towing vessel, a towing vessel operating exclusively on Rivers or Western Rivers, and a towing vessel oOperating in limited geographic areas. A towing vessel operating in a limited geographic area mustneed not carry distress signals.+

(1) Three hand red flare distress signals approved under 46 CFR subpart 160.021 or other standard specified by the Coast Guard.

(2) Three hand orange smoke distress signals, as approved under 46 CFR subpart 160.037 or other standard specified by the Coast Guard.

(d) Substitutions. (1) A rocket parachute flare, as approved under 46 CFR subpart 160.036 or other standard specified by the Coast Guard, may be substituted for any of the hand red flare distress signals, as required under paragraph (a) or (b) of this section; or

(2) One of the following may be substituted for any of the hand orange smoke distress signals, as required under paragraph (a) or (b) of this section:

(i) A rocket parachute flare, as approved under 46 CFR subpart 160.036 or other standard specified by the Coast Guard;

(ii) A hand red flare distress signal, as approved under 46 CFR subpart 160.021

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or other standard specified by the Coast Guard; or

(iii) A floating orange smoke distress signal, as approved under 46 CFR subpart 160.022 or other standard specified by the Coast Guard.

(e) Exemption. A vessel operating in a limited geographic area on a short run limited to approximately 30 minutes away from the dock is not required to carry distress flares and smoke signals under this section.

(f) Stowage. Each pyrotechnic distress signal carried to meet this section must be stowed in one of the following:

(1) A portable watertight container carried at the operating station. Portable watertight containers for pyrotechnic distress signals must be of a bright color and must be clearly marked in legible contrasting letters at least 12.7 millimeters (0.5 inches) high with ``DISTRESS SIGNALS''; or

(2) A pyrotechnic locker secured above the freeboard deck, away from heat, in the vicinity of the operating station.

Sec. 141.380 Emergency position indicating radiobeacon (EPIRB).

(a) Each towing vessel operating on oceans, coastwise, limited coastwise, or beyond 3 nautical miles from shore upon the Great Lakes must carry a Category 1, 406 MHz satellite Emergency Position Indicating Radio Beacon (EPIRB) which meets the requirements of 47 CFR part 80.

(b) When the towing vessel is underway, the EPIRB must be stowed in its float-free bracket with the controls set for automatic activation and be mounted in a manner so that it will float free if the towing vessel sinks.

~~(c) The name of the towing vessel must be marked or painted in clearly legible letters on each EPIRB, except on an EPIRB in an inflatable liferaft.~~

(c~~d~~) The owner or managing operator must maintain valid proof of registration.

Sec. 141.385 Line throwing appliance.

Each towing vessel operating in oceans service must have a line throwing appliance approved under subpart 160.040 of this chapter.

(a) Stowage. The line throwing appliance and its equipment must be readily accessible for use.

(b) Additional equipment. The following equipment for the line throwing appliance is required:

(1) The equipment on the list provided by the manufacturer with the approved appliance; and

(2) An auxiliary line that--

(i) Is at least 450 meters (1,500 feet) long; and

(ii) Has a breaking strength of at least 40 kilonewtons (9,000 pounds-force); and

(iii) Is, if synthetic, of a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

PART 142--FIRE PROTECTION

Subpart A--General

Sec.

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 142.100 Purpose.

This part describes the requirements for fire suppression and detection equipment and arrangements on towing vessels.

Sec. 142.105 Applicability.

This part applies to all towing vessels subject to this subchapter.

Sec. 142.110 Definitions.

The definitions provided in Sec.section 136.110 of this subchapter apply
to this part.

Sec. 142.115 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal regulations/ibr_locations.html. Also, it is available for inspection at U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street, SW., Washington, DC 20593-0001, and is available from the sources listed in paragraph (b) of this section.

(b) The materials approved for incorporation by reference in this part and the sections affected are:

National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101	
NFPA 10 (Chapter 7)--Portable Fire Extinguishers, 2007..	142.240
NFPA 1971--Standard on Protective Ensembles for Structural Fire-Fighting and Proximity Fire-Fighting, 2007.....	142.345
Underwriters Laboratories Standard, 12 Laboratory Drive, Research Triangle Park, NC 27709-3995	
UL 217--Single and Multiple Station Smoke Detectors.....	142.335
UL 1275--Flammable Storage Cabinet.....	142.225

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Subpart B--General Requirements for Towing Vessels

~~Sec. 142.200 Towing Safety Management System (TSMS).~~

~~If a Towing Safety Management System (TSMS) is applicable to the towing vessel, the TSMS must:~~
~~(a) Include policies and procedures to ensure compliance with this part; and~~
~~(b) Provide objective evidence that documents compliance with the TSMS.~~

Comment [JAC48]: Redundant of 138.220.

Sec. 142.205 Towing v~~V~~essels built to alternate standards.

(a) Towing vessels that comply with The International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended will be deemed to be in compliance with this part.
(b) Alternate standards may be used where it can be shown that they provide an equivalent level of safety and performance.

Sec. 142.210 Alternate arrangements or equipment.

(a) A towing vessel may comply with the requirements of this subpart by being equipped with appropriate alternate arrangements or equipment as permitted by this subpart and documented in the ~~Towing Safety Management System~~TSMS applicable to the towing vessel.
(b) The cognizant Officer in Charge, Marine Inspection (OCMI) may require a towing vessel to carry specialized or additional fire

protection, suppression, or detection equipment if:
(1) The cognizant OCMI determines that the conditions of the voyage render the requirements of this part inadequate; or
(2) The towing vessel is operated in globally remote areas or severe environments not covered under this part. These areas may include, but are not limited to, Polar Regions, remote islands, areas of extreme weather, and other remote areas where timely emergency assistance cannot be anticipated.

Sec. 142.215 Approved equipment.

(a) All hand-portable fire extinguishers, semi-portable fire-extinguishing systems, and fixed fire-extinguishing systems must be of an approved type.
(b) Where equipment in this subpart is required to be of an approved type, such equipment requires the specific approval of the Coast Guard. A listing of approved equipment and materials may be found online at http://cgmix.uscg.mil/equip. Each cognizant Officer in Charge, Marine Inspection (OCMI) may be contacted for information concerning approved equipment and materials.

Sec. 142.220 Fire hazards to be minimized.

Each towing vessel must be maintained and operated so as to minimize fire hazards and to ensure the following:
(a) All bilges and void spaces are kept free from accumulation of combustible and flammable materials and liquids;
(b) Storage areas are kept free from accumulation of combustible materials insofar as practicable; and
(c) Internal combustion engine exhaust ducts and galley exhaust ducts are insulated with noncombustible insulation if less than 450 mm (18 inches) away from combustibles.

Sec. 142.225 Storage of flammable or combustible products.

(a) A towing vessel that has paints, coatings, or other flammable or combustible products onboard must have a designated storage area.
(b) The storage area may be any room or compartment that is free of ignition sources. A flammable storage cabinet that satisfies Underwriters Laboratories Standard (UL) 1275 (incorporated by reference in Sec. 142.105 of this part) may be used, or other suitable steel container that provides an equivalent level of protection. If a flammable storage cabinet or steel container is used, it must be secured to the towing vessel so that it does not move.
(c) A B-II portable fire extinguisher must be located near the storage area. This is in addition to the portable fire extinguishers required by Table 142.305 (in ~~Sec.~~section 142.305) of this part.

Sec. 142.230 Hand-portable fire extinguishers and semi-portable fire-extinguishing systems.

(a) Hand-portable fire extinguishers and semi-portable fire-extinguishing systems are classified by a combination letter and Roman numeral. The letter indicates the type of fire which the unit could be expected to extinguish, and the Roman numeral indicates the relative size of the unit.

(b) For the purpose of this subchapter, all required hand-portable fire extinguishers and semi-portable fire-extinguishing systems must include Type B classification, suitable for extinguishing fires involving flammable liquids, grease, etc.

(c) The number designations for size run from ``I'' for the smallest to ``V'' for the largest. Sizes I and II are hand-portable fire extinguishers; sizes III, IV, and V are semi-portable fire-extinguishing systems, which must be fitted with hose and nozzle or other practical means to cover all portions of the space involved. Examples of the sizes for some of the typical hand-portable fire extinguishers and semi-portable fire-extinguishing systems appear in Table 142.230(c) of this section.

Table 142.230(c)--Portable and Semi-portable Extinguishers

Classification	Foam, liters (gallons)	Carbon dioxide, kilograms (pounds)	Dry chemical, kilograms (pounds)
B-I	4.75 (1.25)	2 (4)	1 (2)
B-II	9.5 (2.5)	7 (15)	4.5 (10)
B-III	45 (12)	16 (35)	9 (20)
B-IV	75 (20)	23 (50)	13.5 (30)
B-V	125 (33)	45 (100)	23 (50)

(d) All hand-portable fire extinguishers and semi-portable fire-extinguishing systems must have a permanently attached name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the approving person or firm, and the manufacturer's identifying mark.

Sec. 142.235 Fixed fire-extinguishing systems.

(a) When a fixed fire-extinguishing system is installed on a towing vessel, it must be a type approved by the Coast Guard.

(b) If the system is a carbon-dioxide type, then it must be designed and installed in accordance with subpart 76.15 of this chapter.

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Sec. 142.240 Examination, testing, and maintenance.

(a) All fire suppression and detection equipment and systems on board a towing vessel must be tested and maintained annually or ~~in accordance with the attached nameplate, manufacturer's approved design manual or~~ as otherwise provided in the ~~any Towing Safety Management System (~~TSMS~~)~~ applicable to the towing vessel.

(b) The records of examinations and tests must be recorded in accordance with the ~~any~~ TSMS ~~applicable to the vessel, the towing vessel record, or the vessel's official logbook~~. ~~The following minimum information is required:~~

~~(1) For tests: the dates when tests and examinations were performed, the number and/or other identification of each unit tested and examined, and the name(s) of the person(s) and/or third-party auditor conducting the tests and examinations; and~~

~~(2) Receipts and other records generated by these tests and examinations must be retained for at least 1 year after the expiration of the COI and made available upon request.~~

(c) All hand-portable fire extinguishers, semi-portable fire-extinguishing systems, fire detection systems, and fixed fire-extinguishing systems, including ventilation, machinery shutdowns, and dampers onboard the towing vessel, must be tested or examined at least once every 12 months, as prescribed in paragraph (d) of this section.

(d) Tests and examinations. (1) Portable fire extinguishers must be tested in accordance with the examinations, maintenance procedures, and hydrostatic pressure tests required by Chapter 7 of NFPA 10, Portable Fire Extinguishers (incorporated by reference in Sec. 142.105 of this subchapter), with the frequency as specified by NFPA 10. In addition, carbon dioxide and Halocarbon portable fire extinguishers must be refilled when the net content weight loss exceeds that specified for fixed systems in Table 142.240 of this section.

(2) Semi-portable and fixed gas fire-extinguishing systems must be inspected and tested, as required by Table 142.240 of this section, in addition to the tests required by ~~Sec. Sec.~~sections ~~—~~147.60 and 147.65 of subchapter N of this chapter.

(3) Flexible connections and discharge hoses on all semi-portable extinguishers and fixed gas extinguishing systems must be inspected and tested in accordance with ~~Sec.~~ section 147.65 of this chapter;

(4) All cylinders containing compressed gas must be tested and marked in accordance with section ~~Sec.~~ 147.60 of this chapter;

(5) All piping, controls, valves, and alarms must be examined; and the operation of controls, alarms, and ventilation shutdowns for each fixed fire-extinguishing system and detecting system must be verified,

to determine that the system is operating properly;

(6) The fire main system must be charged, and appropriate pressure must be verified at the most remote and highest outlets;

(7) All fire hoses must be examined and subjected to a test pressure equivalent to the maximum service pressure;

(8) All smoke and fire detection systems, including sensors and alarms must be tested; and

(9) All fire hoses which are defective and incapable of repair must be destroyed.

Table 142.240--Semi-Portable and Fixed Fire Extinguishing Systems

Type system	Test
Carbon dioxide.....	~~Weigh cylinders~~Use approved, appropriate equipment to determine percent of charge. Recharge if weight loss exceeds 10 percent of weight of charge. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gas as stated in the system manufacturer's instruction manual. Examine hoses and nozzles to be sure they are clean.
Halon.....	~~Weigh cylinders~~ Use approved, appropriate equipment to determine percent of charge. Recharge if weight loss exceeds 5 percent of weight of charge. If the system has a pressure gauge, recharge if pressure loss (adjusted for temperature) exceeds 10 percent. Test time delays, alarms, and ventilation shutdowns with carbon dioxide, nitrogen, or other nonflammable gasses stated in the system manufacturer's instruction manual. Examine hoses and nozzles to be sure they are clean.
Dry Chemical (cartridge operated).	Examine pressure cartridge and replace if end is punctured or if determined to have leaked or is in an unsuitable condition. Examine hose and nozzle to see if they are clear. Insert charged cartridge. Ensure dry chemical is free flowing (not caked) and extinguisher contains full charge.
Dry chemical (stored pressure)....	See that pressure gauge is within operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with dry chemical. Recharge if pressure is low or dry

	chemical is needed.
Foam (stored pressure).....	See that pressure gauge, if so equipped, is within the operating range. If not, or if the seal is broken, weigh or otherwise determine that extinguisher is fully charged with foam. Recharge if pressure is low or foam is needed. Replace premixed agent every 3 years.
Halocarbon.....	Recharge or replace if weight loss exceeds 5 percent of weight of charge, or if pressure loss exceeds 10 percent of specified gauge pressure, adjusted for temperature.
Inert gas.....	Recharge or replace if cylinder pressure loss exceeds 5 percent of specified gauge pressure, adjusted for temperature.
Water mist.....	Maintain system in accordance with the maintenance instructions in the system manufacturer's design, installation, operation, and maintenance manual.

Sec. 142.245 Requirements for training crews to respond to fires.

(a) Drills and instruction. The master of a towing vessel must ensure that each crewmember participates in fire fighting drills and receives instruction at least once each month. The instruction may coincide with the drills, but is not required to do so. All crewmembers must be
familiar with their fire fighting duties, and, specifically how to:

(1) Fight a fire in the engine room and elsewhere onboard the towing vessel, including how to--

(i) Operate all of the fire-extinguishing equipment onboard the towing vessel;

(ii) Stop any mechanical ventilation system for the engine room and effectively seal all natural openings to the space to prevent leakage of the extinguishing agent; and

(iii) Operate the fuel shut-off(s) for the engine room.

(2) Activate the general alarm.

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(3) Report inoperative alarm systems and fire detection systems; and

(4) Don a fireman's outfit and a self-contained breathing apparatus, if the towing vessel is so equipped.

(b) Alternative form of instruction. Video training, followed by a discussion led by someone familiar with the contingencies listed in paragraph (a) of this section, is an acceptable, alternative form of instruction. This instruction may occur either onboard or off the

towing vessel.

(c) Participation in drills. Drills must take place onboard the towing vessel as if there were an actual emergency. They must include:

(1) Participation by all crewmembers;

(2) Breaking out and using, or simulating the use of, emergency equipment;

(3) Testing of all alarm and detection systems; and

(4) Putting on protective clothing by at least one person, if the towing vessel is so equipped.

(d) Safety orientation. The master, owner or managing operator must ensure that each crewmember who has not participated in the drills required by paragraph (a) of this section and received the instruction required by that paragraph receives a safety orientation within 24 hours of reporting for duty. The safety orientation must cover the particular contingencies listed in paragraph (a) of this section.

(e) Recording. Training must be recorded in accordance with the provisions of part 140 of this subchapter.

Subpart C--Equipment Requirements

Sec. 142.300 General.

Excepted vessels, as defined in Sec. 136.110 of this subchapter, need not comply with the provisions of ~~Sec. Sec.~~sections 142.315 through 142.340 of this subpart.

Sec. 142.305 Fire-extinguishing equipment required.

(a) Towing vessels of 65 feet or less in length must carry at least the minimum number of hand-portable fire extinguishers set forth in Table 142.305(a) of this section.

Table 142.305(a)--Hand-Portable Fire Extinguishers

Length, feet	Minimum number of B-I hand portable fire extinguishers required \1\	
	No fixed fire-extinguishing system in machinery space	Fixed fire-extinguishing system in machinery space
Under 16	1	0
16 and over, but under 26 \2\	1	0
26 and over, but under 40	2	1
40 and over, but not over 65	3	2

\1\ One B-II hand-portable fire extinguisher may be substituted for two B-I hand portable fire extinguishers.

\2\ See ~~Sec.~~section — 136.105 Applicability concerning vessels under 26 feet.

(b)(1) Towing vessels of more than 65 feet in length must carry at least the minimum number of hand portable fire extinguishers set forth in Table 142.305(b)(1) of this section.

Table 142.305(b)(1)

Gross tonnage--		Minimum number of B-II hand portable fire extinguishers
Over	Not over	
	50	1
50	100	2
100	500	3
500	1,000	6
1,000		8

(2) In addition to the hand portable extinguishers required by paragraph (b)(1) of this section, one Type B-II hand-portable fire extinguisher must be fitted in the engine room for each 1,000 brake horsepower of the main engines or fraction thereof. A towing vessel is not required to carry more than six such extinguishers.

Sec. 142.310 Towing v~~V~~essels contracted for prior to November 19, 1952.

(a) Towing vessels contracted for construction prior to November 19, 1952, must meet the applicable provisions of this part concerning the number and general type of equipment required.

(b) Existing lists of equipment and installations previously approved, but not meeting the applicable requirements for type approval, may be continued in service so long as they are in good condition.

(c) All new installations and replacements must meet the requirements of this part.

Sec. 142.315 Additional fire-extinguishing equipment requirements.

(a) A towing vessel that is:

(1) Certificated for rivers, lakes, bays, and sounds; or

(2) Certificated for limited coastwise, coastwise, oceans or waters beyond 3 nautical miles from shore on the Great Lakes, whose contract for construction was executed prior to August 27, 2003, must have:

(i) The minimum number of hand-portable fire extinguishers required by ~~Sec.~~ section 142.305 of this part; and

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(ii) An approved B-V semi-portable fire-extinguishing system to

protect the engine room; or
(iii) A fixed fire-extinguishing system installed to protect the engine room.
(b) A towing vessel whose contract for construction was executed on or after August 27, 2003, and is certificated for limited coastwise, coastwise, oceans, or beyond 3 nautical miles from shore on the Great Lakes, must be equipped with:
(1) The minimum number of hand-portable fire extinguishers required by ~~Sec.~~ section 142.305 of this part; and
(2) An approved B-V semi-portable fire-extinguishing system to protect the engine room; and
(3) A fixed fire-extinguishing system installed to protect the engine room.
(4) Paragraph (b) of this section does not apply to any towing vessel pushing a barge ahead or hauling a barge alongside when the barge's coastwise, limited coastwise, or Great Lakes route is restricted, as indicated on its Certificate of Inspection, so that the barge may operate ``in fair weather only, within 12 miles of shore'' or with words to that effect.

Sec. 142.325 Fire pumps, fire mains, and fire hoses.

Each towing vessel must have either a self-priming, power-driven, fixed fire pump, a fire main, and hoses and nozzles in accordance with paragraphs (a) through (d) of this section; or a portable pump, and hoses and nozzles, in accordance with paragraphs (e) and (f) of this section.
(a) A fixed fire pump must be capable of:
(1) Delivering water simultaneously from the two highest hydrants, or from both branches of the fitting if the highest hydrant has a Siamese fitting, at a pitot-tube pressure of at least 344 kilopascals (kPa), 50 pounds per square inch (psi), and a flow rate of at least 300 liters per minute (LPM), 80 gallons per minute (gpm), and
(2) Being energized remotely from a safe place outside the engine room and from the pump.
(b) All suction valves necessary for the operation of the fire main must be kept in the open position or capable of operation from the same place where the remote fire pump control is located.
(c) The fire main must have a sufficient number of fire hydrants with attached hose to enable a stream of water to reach any part of the machinery space ~~using a single length of fire hose~~.
(d) The hose must be lined commercial fire hose, at least 40 millimeters (1.5 inches) in diameter, 15 meters (50 feet) in length, and fitted with a nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.
(e) The portable fire pump must be self-priming and power-driven, with--
(1) A minimum capacity of at least 300 LPM (80 gpm) at a discharge gauge pressure of not less than 414 kPa (60 psi), measured at the pump discharge;
(2) A sufficient amount of lined commercial fire-hose at least 40 mm (1.5 inches) in diameter and 15 meters (50 feet) in length,

immediately available to attach to it so that a stream of water will reach any part of the towing vessel; and

(3) A nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.

(f) The pump must be stowed with its hose and nozzle outside of the machinery space.

Sec. 142.330 Fire detection in the engine room.

Each towing vessel must have a fire-detection system installed to detect engine room fires. A towing vessel whose construction was contracted for prior to January 18, 2000, may use an existing engine room monitoring system (with fire-detection capability) instead of a fire detection system, if the monitoring system is operable and complies with this section. The owner or managing operator must ensure that:

(a) Each detector, control panel, and fire alarm are approved under 46 CFR 161.002 or listed by an independent testing laboratory; except that, for an existing engine room monitoring system (with fire-detection capability), each detector must be listed by an independent testing laboratory.

(b) The system is installed, tested, and maintained in accordance with the manufacturer's design manual;

(c) The system is arranged and installed so a fire in the engine room automatically sets off alarms on a control panel at the primary operating station;

(d) The control panel includes:

(1) A power available light;

(2) Both an audible alarm to notify crew at the operating station of a fire, and visual alarms to identify the zone or zones of origin of the fire;

(3) A means to silence the audible alarm while maintaining indication by the visual alarms;

(4) A circuit-fault detector test-switch; and

(5) Labels for all switches and indicator lights, identifying their functions.

(e) The system draws power from two sources; switchover from the primary source to the secondary source may be either manual or automatic;

(f) The system serves no other purpose, unless it is an engine room monitoring system (with fire-detection capability) installed on a towing vessel whose contract for construction occurred prior to January 18, 2000; and

(g) The system is certified by a Registered Professional Engineer, ~~or~~ by a recognized classification society (under 46 CFR part 8), or alternative entity accepted by the Commandant (CG-xxx) to comply with paragraphs (a) through (f) of this section.

Sec. 142.335 Smoke alarms in berthing spaces.

Each towing vessel must be equipped with a means to detect smoke in the berthing spaces and lounges that alerts individuals in those

spaces. This may be accomplished via an installed detection system or by using individual battery-operated detectors meeting Underwriters Laboratories Standard 217 (incorporated by reference in ~~Sec.~~ section 142.105 of this subchapter). Detection systems or individual detectors must be kept operational at all times when the crew is onboard the towing vessel.

Sec. 142.340 Heat detector in galley.

Each new towing vessel equipped with a galley must have a heat detection system, which sounds an audible alarm at the operating station.

~~Sec. 142.345 Firemen's outfit.~~

~~(a) Each towing vessel 79 feet or more in length operating on oceans and coastwise routes that does not have an installed fixed fire-extinguishing system must have:~~
~~(1) At least two firemen's outfits that meet National Fire Protection Association (NFPA) 1971, Protective Ensemble for Structural Fire Fighting (incorporated by reference in Sec. 142.115 of this subchapter).~~
~~(2) Two self-contained breathing apparatus of the pressure demand, open circuit type that are approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH), under 42 CFR part 84. The breathing apparatus must have a minimum 30-minute air supply and full facepiece.~~
~~(b) [Reserved].~~

Sec. 142.350 Fire axe.

Each towing vessel must be equipped with at least one fire axe that is readily accessible for use from the exterior of the towing vessel.

PART 143--MACHINERY AND ELECTRICAL SYSTEMS AND EQUIPMENT

Subpart A--General
Sec.
143.100 Purpose.
143.105 Applicability.

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143.110 Organization of this part.
143.115 Definitions.
143.120 Incorporation by reference.
Subpart B--Requirements for All Towing Vessels
143.200 Applicability.
~~143.205 Towing Safety Management System (TSMS).~~

Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 143.100 Purpose.

This part contains requirements for the design, installation, and operation of primary and auxiliary machinery and electrical systems and equipment on towing vessels.

Sec. 143.105 Applicability.

This part applies to all towing vessels subject to this subchapter.

Sec. 143.110 Organization of this part.

(a) Certain sections in this part contain functional requirements. Functional requirements describe the desired objective of the regulation. A towing vessel must meet the applicable functional requirements.

(b) Certain sections may also contain a prescriptive option to meet the functional requirements. A towing vessel that meets the prescriptive option will have complied with the functional requirements.

(c) If an owner or managing operator chooses to meet the functional requirement through means other than the prescriptive option, the means must be ~~accepted by the cognizant OCMI or an approved third-party organization and~~ documented in ~~any~~the TSMS applicable to the towing vessel and accepted by the approved third-party organization auditing the TSMS.

Sec. 143.115 Definitions.

The definitions provided in ~~Sec.~~ section 136.110 of this subchapter apply
to this part.

Sec. 143.120 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce an edition other than that specified in paragraph (b) of this section, the Coast Guard must publish notice of the change in the Federal Register and the

material must be available for inspection. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal regulations/ibr_locations.html.
Also, all materials are available at the U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street SW., Washington, DC 20593-0001, or from the sources indicated in this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

American Boat and Yacht Council (ABYC), 3069 Solomons Island Road, Edgewater, MD 21037-1416	
E-11--AC & DC Electrical Systems on Boats, 2003	143.520
H-2--Ventilation of Boats Using Gasoline, 2000	143.520
H-22--Electric Bilge Pump Systems, 2005	143.520
H-24 -- Gasoline Fuel Systems, 2007	143.520
H-25--Portable Fuel Systems for Flammable Liquids, 2003	143.285, 143.520
H-32--Ventilation of Boats Using Diesel Fuel, 2004	143.520
H-33--Diesel Fuel Systems, 2005	143.520
P-1--Installation of Exhaust Systems for Propulsion and Auxiliary Engines, 2002	143.520
P-4--Marine Inboard Engines and Transmissions, 2004	143.520
American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, TX 77060	
Rules for Building and Classing Steel	143,210, 143.430, 143.515, 143.535, 143.545, 143.550

Vessels for Service on Rivers and Intracoastal Waterways, 2007	
[[Page 50039]]	
Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length, 2006	143.210, 143.340, 143.430, 143.515, 143.535, 143.540, 143.545, 143.550
International Organization for Standardization (ISO), 1 rue de varembe', Case postale 56, CH-1211 Geneve 20, Switzerland	
ISO Standard 14726: 2008 Ships and marine technology--Identification colours for the content of piping systems, 2008	143.270
National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101	
NFPA 302-1998--Fire Protection Standard for Pleasure, and Commercial Motor Craft, 1998	143.285
~~NFPA 70-2002--National Electric Code (NEC) articles 240, 430, and 450, 2002~~	~~143.340, 143.350~~
Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096-0001	
SAE J1475-1996--Hydraulic Hose Fitting for Marine Applications, 1996	143.285
SAE J1942-2005--Hose and Hose Assemblies for Marine Applications, 2005	143.285

Underwriters Laboratories, 12 Laboratory Drive,
Research Triangle Park, NC 27709-3995

UL 1104--Standards for Marine Navigation Lights, 1998 — 143.315

Subpart B--Requirements for All Towing Vessels

Sec. 143.200 Applicability.

(a) This subpart applies to all towing vessels subject to this subchapter.

~~(b) Where indicated, excepted towing vessels as defined in Sec. 136.110 need not comply with the provisions of this part.~~

Comment [JAC49]: "Where indicated" is confusing. Better to clearly state at the beginning of each section if it does not apply to excepted vessels.

~~Sec. 143.205 Towing Safety Management System (TSMS).~~

Comment [JAC50]: Redundant of 138.220

~~If a Towing Safety Management System (TSMS) is applicable to the towing vessel, the TSMS must:~~

~~(a) Include policies and procedures to ensure compliance with this part; and~~

~~(b) Provide objective evidence that documents compliance with the TSMS.~~

Sec. 143.210 Towing v~~V~~essels built to class.

(a) Except as noted in paragraph (b) of this section:

(1) A towing vessel classed by the American Bureau of Shipping (ABS) (incorporated by reference in Sec. 143.120 of this part) in accordance with their rules, and as appropriate for the intended service and routes, is considered in compliance with the ~~mechanical~~machinery and electrical standards of this part.

(2) A towing vessel built and equipped to conform to ABS rules (incorporated by reference in ~~Sec.~~ section ~~–~~ 143.120 of this part) appropriate for the intended service and routes, but not currently classed, may be deemed to be in compliance with this part, provided that the towing vessel continues to conform to ABS rules.

(b) Additional requirements. A towing vessel that complies with paragraph (a) of this section must also comply with the following requirements:

~~(1) A towing vessel that moves oil or hazardous materials in bulk must meet the class requirements described in subpart D of this part.~~

~~(2) A towing vessel must meet the potable water requirements in Sec. 143.225 of this part.~~

Comment [JAC51]: Delete since potable water requirements are not yet promulgated. CG can amend Subchapter M when these requirements are in place.

(3) A towing vessel must meet the pilothouse alerter requirements in ~~Sec.~~ section 143.325 of this part.

(4) A towing vessel must meet the towing machinery requirements of ~~Sec.~~section ~~—~~143.330 of this part.

Sec. 143.215 Alternate design considerations.

Machinery or electrical equipment or systems of a novel design, unusual form, or special materials which cannot be reviewed or approved in accordance with this part, may be approved by the Commanding Officer, Marine Safety Center. It must be shown by systematic analysis, based on engineering principles, that the machinery or electrical equipment or system provides an equivalent level of safety. The owner shall submit detailed plans, material component specifications, and design criteria, including the expected towing vessel service and operating
environment, to the Marine Safety Center.

Sec. 143.220 General.

(a) Machinery and electrical systems must be designed and maintained to provide for safe operation of the towing vessel and safety of
persons onboard under normal and emergency conditions.

(b) The crew of each towing vessel, in accordance with their responsibilities, must be able to demonstrate the
ability to operate primary and auxiliary machinery and electrical systems under normal and emergency conditions. This includes, but is not limited to, responses to alarms and operation of propulsion and steering in the event of failure.

(c) Propulsion machinery, including main engines, reduction gears, shafting, bearings, and electrical equipment and systems, must:

(1) Be maintained to ensure proper operation;

(2) Be suitable for route and service; and

(3) Have suitable propulsion controls to provide the operator full control at the primary operating station.

(d) Repairs and minor alterations to existing towing vessels must be made in accordance with this subpart. New installations on or after [date after a final rule takes effect] that are not ``replacements in kind'' on an existing towing vessel must comply with the requirements of subparts C and D
of this part with respect to the installation in question, if applicable.

Sec. 143.225 [Reserved]

Sec. 143.230 Guards for exposed hazards.

Exposed hazards, such as gears or rotating machinery, must be properly protected by a cover, guard, or rail. This is not meant to restrict access to towing equipment such as winches, drums, towing gear or steering compartment equipment necessary for the operation of the towing vessel.

Comment [JAC52]: Language moved from 144.345.

Sec. 143.235 Machinery space fire prevention.

(a) All seals and gaskets must be properly maintained to prevent flammable liquid leaks in the machinery space.

(b) Machinery space bilges must be kept free of excessive accumulation of oil.

(c) Piping and machinery components, ~~that exceed 65.5 [deg]C (150 [deg]F),~~ including fittings, flanges, valves, exhaust manifolds, and turbochargers, must be suitably insulated where necessary to prevent injuries. Measures must be in place to prevent flammable liquid piping leaks from coming into contact with these components.

(d) Flammable and combustible ~~materials~~liquids must not be stored in machinery spaces, unless they are stored in a suitable container that meets the requirements of ~~Sec.~~ section 142.225 of this subchapter.

(e) Means must be provided for stopped each fan in a ventilation system serving machinery spaces and for closing, in case of fire, each doorway, ventilator, and annular space around funnels and other openings into such spaces.

Comment [JAC53]: Language borrowed from 46 CFR 177.970 and 116.970.

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Comment [JAC54]: Language moved from 144.360(c).

[[Page 50040]]

Sec. 143.240 Control and monitoring requirements.

(a) Each towing vessel must be equipped with throttles and gauges at the primary operating station ~~have a means~~ to monitor and control ~~the~~ revolutions per minute (RPM) and, if applicable, direction of thrust ~~amount of thrust, rudder angle, and (if applicable), direction of thrust at the primary operating station~~.

(b) Each towing vessel equipped with rudder(s) must be equipped with either follow up steering or rudder indicators ~~have a means~~ to monitor and control the position of the rudder(s) at the primary operating station.

Sec. 143.245 Alarms and monitoring.

(a) Each towing vessel must have a reliable means to provide notification when an emergency condition exists or an essential system develops problems that require attention. The following must be equipped with alarms:

(1) Main engine lubricating oil pressure;
(2) Main engine cooling water temperature;
(3) Main engine fuel oil pressure;
(4) Auxiliary generator engine lubricating oil pressure;
(5) Auxiliary generator engine cooling water temperature;
(6) Auxiliary generator fuel pressure;
(7) Bilge high levels;and,
(8) ~~Hydraulic steering fluid levels, if applicable; and~~
(9) Low fuel level, if fitted with a day tank (see ~~Sec.~~section 143.275).

(b) Alarms must:

(1) Be visible and audible at the operating station. The alarm panel located at the operating station need not specify which piece of equipment caused the alarm to actuate;

(2) Function when primary electrical power is lost;

(3) Have a means to test actuation at the operating station or have a continuous self-monitoring alarm system which actuates if an alarm point fails or becomes disabled;

(4) Continue until they are acknowledged; and

(5) Not interfere with night vision at the operating station.

(c) ~~The following systems must be equipped with gauges visible at the operating station:~~

~~(1) Main engine lubricating oil pressure;~~

~~(2) Main engine cooling water temperature;~~

~~(3) Auxiliary generator engine lubricating oil pressure;~~

~~(4) Auxiliary generator engine cooling water temperature; and~~

~~(5) Hydraulic steering fluid pressure, if the vessel is equipped with hydraulic steering systems.~~

(d) On excepted towing vessels, as defined in ~~Sec.~~ section 136.110 of this subchapter, the alarms required by this section may be located in the engine room, provided that an audible summary alarm is provided in the pilothouse and that communication exits between the pilothouse and the engine room or crewmembers responsing to the alerm(s) that functions when ship service power is not available.

Sec. 143.250 General alarms.

(a) Applicability. This section applies to all towing vessels that are not ~~an~~ excepted towing vessels as defined in ~~Sec.~~ section 136.110 of this subchapter.

(b) Purpose. To provide a reliable and effective means of notifying all persons onboard the towing vessel of an emergency.

(c) Each towing vessel must be fitted with a general alarm that:

(1) Has a contact maker at the operating station that can notify persons onboard in the event of an emergency;

(2) Is capable of notifying persons in any accommodation, work space, and the engine room;

(3) Has installed, in the engine room and any other area where background noise makes a general alarm hard to hear, a supplemental flashing red light that is identified with a sign that reads: ``Attention General Alarm--When Alarm Sounds or Flashes Go to Your Station''; and

(4) Is tested at least once each week.

(d) A public-address (PA) system or other means of alerting all persons on the towing vessel may be used in lieu of the general alarm in paragraph (c) of this section if the system:

(1) Is capable of notifying persons in any accommodation, work space, and the engine room;

(2) Complies with paragraph (c)(3) of this section;

(3) Can be activated from the operating station; and

(4) Is tested at least once each week.

Sec. 143.255 Communication requirements.

(a) Applicability. This section applies to all towing vessels subject to this subchapter that are not an excepted towing vessel as defined in ~~Sec.~~section ~~—~~136.110 of this subchapter.

(b) Communication system. Each towing vessel must be fitted with a communication system between the pilothouse and the engine room that:

(1) Consists of either fixed or portable equipment, such as a sound-powered telephone, portable radios, or other reliable method of voice communication, with a main or reserve power supply that is independent of the electrical system;

(2) Provides two-way voice communication and calling between the pilothouse and either the engine room or a location immediately adjacent to an exit from the engine room.

(c) Exceptions. Towing vessels with more than one propulsion unit and independent pilothouse control for all engines are not required to have internal communication systems.

(d) Direct voice communication. When the pilothouse engine controls and the access to the engine room are within 3 meters (10 feet) of each other and allow unobstructed visible contact between them, direct voice communication is acceptable instead of a communication system.

Sec. 143.260 Readiness and testing.

(a) Functional requirements. Essential systems or equipment must be regularly tested and examined. If a component is found unsatisfactory, it must be repaired or replaced. Test and examination procedures must be in accordance with manufacturer's instructions (if available) and the ~~vessel's Towing Safety Management System, if the vessel has a~~ TSMS applicable to the towing vessel.
Tests and examinations must verify that the system or equipment functions as designed.

(b) Prescriptive option. The towing vessel must perform the tests in Table 143.260(c) of this section. The tests required by this section must be recorded in accordance with part 140 of this subchapter.

Table 143.260(c)--Required Tests and Frequency

Tests of:	Frequency
Propulsion controls; ahead and astern at the operating station.	Before the towing vessel embarks on a trip or voyage of more than 24 hours or when a~~each~~ new master takes command at crew change.
Steering controls at the operating station.	Before the towing vessel embarks on a trip or voyage of more than 24 hours or when a~~each~~ new master takes command at crew change.
Pilothouse alerter system required by ~~Sec.~~section 143.325 of this part, as	Weekly.

applicable.	
All alternate steering and propulsion controls ~~including those required by subpart D of this part (if applicable)~~.	Weekly.

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Alarm actuation circuits for alarms required by ~~Sec.~~ section 143.245 of this part, and if applicable, subpart D of this part.	Weekly.
Emergency communication, including any required by subpart D if applicable.	Weekly.
General alarm if the vessel is so equipped.	Weekly.
Emergency lighting and power if the vessel is so equipped.	At least once every 3 months.
Storage batteries if the vessel is so equipped, for emergency lighting and power.	At least once every 3 months.
Alarm setpoints.....	~~Annually~~At least once every 30 months using methods described in 46 CFR 61.40-10.
Pressure vessel safety valves.....	A~~nnually~~t least once every 2 years.
All other essential systems.....	At least once every 3 months.

Sec. 143.270 System isolation and markings.

Electrical equipment, piping for flammable liquid, seawater cooling, or firefighting systems must be provided with isolation devices and markings as follows:

(a) Electrical equipment must be provided with circuit isolation and must be marked as described in ~~Sec.~~ section 143.305 of this part;

(b) Electrical panels or other enclosures containing more than one source of power must be fitted with a sign warning persons of this condition and identifying where to secure all sources;

(c) Piping for flammable liquid, seawater cooling, or firefighting systems must be fitted with isolation valves that are clearly marked by labeling or color coding that enables the crew to identify its function; ~~and~~

(d) Except as provided in paragraph (e) of this section, a~~A~~ny piping system that penetrates the hull below the waterline must be fitted with efficient and accessible means, located as close to the hull penetrations as is practicable, for preventing the accidental admission of water into the towing vessel either through such pipes or in the event of a fracture of such pipe. The valve must be clearly marked by labeling or color coding that enables the crew to identify its function.

(e) Sanitary discharges led through the sides of a towing vessel must be fitted with efficient and accessible means for preventing water from passing inboard when the inboard end is located below the main deck. Graywater lines on towing vessels built before [effective date of final rule) need not be fitted with isolation valves or marked as described in paragraph (d) of this section if all piping is contained inside a fuel tank or void.

(fe) Color coding required by this section may be met by complying with coding standards contained in International Organization for Standardization (ISO) standard 14726 (incorporated by reference in ~~Sec.~~ section 143.120 of this part), or in accordance with the ~~Towing Safety Management System~~TSMS applicable to the towing vessel.

Sec. 143.275 Fuel system requirements for towing vessels.

(a) Fuel systems for the towing vessel, main engine propulsion, and auxiliary generator systems must be maintained to ensure proper operation of the system.

(b) A continuous supply of clean fuel must be provided to all engines necessary for towing vessel control including the main propulsion engines and auxiliary generator engines.

(c) The fuel system must include filters or centrifuge. Where filters are used:

(1) A supply of spare fuel filters must be provided onboard; and

(2) Fuel filters must be ~~examined and replaced in accordance with manufacturer's requirements~~ maintained to ensure adequate operation of the generator at all times.

~~(d) Towing vessels equipped with a day tank must be equipped with a low fuel level alarm that meets the requirements of Sec. 143.245 of this part.~~

Comment [JAC55]: Redundant of 143.245(a)(9).

Sec. 143.280 Fuel shutoff requirements.

(a) Applicability. This section applies to all towing vessels subject to this subchapter that are not excepted towing vessels, as defined in ~~Sec.~~ section 136.110 of this subchapter.

(b) To stop the flow of fuel in the event of a break in the fuel line, a ~~positive,~~ remote fuel shutoff valve must be fitted on any fuel line that supplies fuel directly to an engine or generator prime mover.

(c) The valve must be near the source of supply (for instance, at the day tank, storage tank, or fuel-distribution manifold).

(d) The valve(s) must be operable from a safe place outside the space where the valve is installed.

(e) Each remote valve control should be marked in clearly legible letters, at least 25 millimeters (1 inch) high, indicating the purpose of the valve and the way to operate it.

Sec. 143.285 Additional fuel system requirements for towing vessels built after January 18, 2000.

(a) Applicability. This section applies to all towing vessels subject to this subchapter that are not excepted towing vessels, as defined in ~~Sec.~~ section 136.110 of this subchapter. Except for the components of an outboard engine or of a portable bilge or fire pump, each fuel system installed onboard the towing vessel must comply with this section.

(b) Portable fuel systems. The towing vessel must not incorporate or carry portable fuel systems, including portable tanks and related fuel lines and accessories, except when used for outboard engines or when permanently attached to portable equipment such as portable bilge or fire pumps. The design, construction, and stowage of portable tanks and related fuel lines and accessories must comply with the American Boat and Yacht Council (ABYC) H-25 (incorporated by reference in ~~Sec.~~section 143.120 of this subchapter).

(c) Vent pipes for integral fuel tanks. Each integral fuel tank must meet the following:

(1) Each tank must have a vent that connects to the highest point of the tank, discharges on a weather deck through a bend of 180 degrees (3.14 radians), and is fitted with a 30-by-30-mesh corrosion-resistant flame screen. Vents from two or more fuel tanks may combine in a system that discharges on a weather deck. The net cross-sectional area of the vent pipe for the tank must be not less than 312.3 square millimeters (0.484 square inches), for any tank filled by gravity, but not less than that of the fill pipe for any tank filled under pressure.

(d) Fuel piping. Except as permitted in paragraphs (e)(1), (2), and (3) of this section, each fuel line must be seamless and made of steel, annealed copper, nickel-copper, or copper-nickel. Each fuel line must have a wall thickness of not less than 0.9 millimeters (0.035 inch) except that--

(1) Aluminum piping is acceptable on an aluminum-hull towing vessel if it is installed outside the engine room and is at least Schedule 80 in thickness; and

(2) Nonmetallic flexible hose is acceptable if it--

(i) Is used in lengths of not more than 0.76 meters (30 inches);

(ii) Is visible and easily accessible;

(iii) Does not penetrate a watertight bulkhead;

(iv) Is fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid; and

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(v) Either,--

(A) If it is designed for use with compression fittings, is fitted with suitable, corrosion-resistant, compression fittings, or fittings compliant with Society of Automotive Engineers (SAE) J1475 (incorporated by reference in ~~Sec.~~ section 143.120 of this subchapter); or

(B) If it is designed for use with clamps, is installed with two clamps at each end of the hose. Clamps must not rely on spring tension and must be installed beyond the bead or flare or over the serrations of the mating spud, pipe, or hose fitting. Hose complying with SAE

J1475 (incorporated by reference in ~~Sec.~~ section 143.120 of this subchapter),
is also acceptable.

(3) Nonmetallic flexible hose complying with SAE J1942 (incorporated by reference in ~~Sec.~~ section 143.120 of this subchapter), is also acceptable.

(e) A towing vessel of less than 79 feet in length may comply with any of the following standards for fuel systems instead of those of paragraph (d) in this section:

(1) American Boat and Yacht Council (ABYC) H-33 (incorporated by reference in ~~Sec.~~ section 143.120 of this part);

(2) Chapter 5 of National Fire Protection Association (NFPA) 302 (incorporated by reference in ~~Sec.~~ section 143.120 of this part); or

(3) 33 CFR chapter I, subchapter S (Boating Safety).

Sec. 143.290 Piping systems and tanks.

Towing v~~V~~essel piping and tanks that are exposed to the outside of the hull
must be made of metal and maintained in a leak free condition.

Sec. 143.295 Bilge pumps or other dewatering capability.

Each towing vessel must have an installed bilge pump or another method for emergency dewatering, such as a portable pump with sufficient hose length. All installed bilge piping~~, whether installed or portable,~~ must have a check/foot valve in each bilge suction that prevents unintended backflooding through bilge piping.

Sec. 143.300 Pressure vessels.

(a) Pressure vessels over 5 cubic feet in volume and over 15 PSI maximum allowable working pressure must be equipped with an indicating pressure gage (in a readily visible location) and with one or more spring-loaded relief valves. The total relieving capacity of such relief valves must be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver, as established by the manufacturer, by more than 10 percent.

(b) Compressed air receivers must be externally examined visually and relief valves
must be tested at least annually.

(c) Each pressure vessel must be examined or tested every 5 years. The extent of the test or examination should be that necessary to determine that the condition of the pressure vessel is satisfactory and that the pressure vessel is fit for the service intended.

(i) Each pressure vessel must be thoroughly examined externally every 5 years.

(ii) Each pressure vessel that is fitted with a manhole or other inspection opening so that it can be satisfactorily examined

Comment [JAC56]: Language borrowed from 46 CFR Subpart F.

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internally must be opened for internal examination every 5 years.
(iii) No pressure vessel need be hydrostatically tested except when a defect is found that may affect the safety of the pressure vessel. In this case, the pressure vessel should be hydrostatically tested at a pressure of 1 ½ times the maximum allowable working pressure.
(iv) The following pressure vessels will not normally be subject to a hydrostatic test:
(1) Tubular heat exchangers.
(2) Pressure vessels used in refrigeration service.
(3) Hydraulic accumulators.

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(c) Pressure vessels installed after [EFFECTIVE DATE OF FINAL RULE] must meet the requirements of ~~Sec.~~ section 143.540 of this part.

Sec. 143.305 Electrical systems, general.

(a) Electrical systems and equipment on board towing vessels must function properly and minimize system failures, fire hazards, and shock hazards to personnel.
(b) Installed electrical power source(s) must be capable of carrying the electrical load of the towing vessel under normal operating conditions.
(c) Electrical equipment must be marked with its respective current and voltage ratings.
(d) All panels, motors, and major electrical equipment must be marked with the location(s) of the designated isolating switch or circuit breaker. Individual circuit breakers on switchboards and distribution panels must be labeled ~~with a description of the loads they serve~~.
(e) Electrical connections must be suitably installed to prevent them from coming loose through vibration or accidental contact.
(f) Electrical equipment and electrical cables must be suitably protected from wet and corrosive environments.
(g) Electrical components that pose an electrical hazard must be in an enclosure.
(h) Electrical conductors passing though watertight bulkheads must be installed so that the bulkhead remains watertight.
(i) When flexible cable is used to transmit power between the vessel and tow:
(1) The receptacles must be female and the flexible cable leads must be ~~fe~~male; and
(2) The connection must be designed to prevent unintended separation.

Sec. 143.310 Shipboard lighting.

(a) Sufficient lighting suitable for the marine environment must be provided on towing vessels within crew working and living areas.
(b) Emergency lighting must be provided to facilitate egress from ~~for~~ all crew working and living areas internal to the towing vessel ~~. Emergency lighting sources~~

~~must provide for sufficient illumination under~~ emergency conditions. Emergency lighting sources ~~to facilitate egress from each space and~~ must be either:

~~(1) Powered as described in Sec. 143.340(b)(9) of this part;~~

(1~~2~~) Automatic, battery-operated with a duration of no less than 30 ~~hours~~minutes; or

(2~~3~~) Non-electric, phosphorescent adhesive lighting strips that are installed along escape routes and sufficiently visible to enable egress with no power.

(c) Each towing vessel must be equipped with at least two operable, portable, and battery-powered lights. ~~One must be located in the pilothouse and the other at the access to the engine room.~~

Sec. 143.315 Navigation lights.

(a) Towing vessels more than 65 feet in length must use navigation lights that meet Underwriters Laboratories (UL) 1104 (incorporated by reference in ~~Sec.~~ section 143.120 of this part) or other standards specified
by the Coast Guard.

(b) Towing vessels 65 feet or less in length may meet the requirements listed in 33 CFR 183.810 or paragraph (a) of this section.

Subpart C--Deferred Requirements for Existing Towing Vessels

Sec. 143.320 Applicability.

(a) This section applies to existing towing vessels, as defined in ~~Sec.~~ section 136.110 of this subchapter, that are not excepted towing vessels.

(b) A towing vessel to which this section applies need not comply with the requirements of this subpart until 5 years after the issuance of its first Certificate of Inspection (COI).

~~(c) Repairs and minor alterations to existing towing vessels must be made in accordance with Subpart B of this part. New installations on or after the date of issuance of the existing towing vessel's first (COI) that are not ``replacements in kind'' on that vessel must comply with subparts C and (if applicable) D of this part.~~

Comment [JAC57]: Redundant of 143.220(d).

Sec. 143.325 Pilothouse alerter system.

(a) A towing vessel with overnight accommodations and alternating watches (shift work), when pulling, pushing or hauling along~~-~~side one or more barges, must have an alarm to detect when its master or mate (pilot) becomes incapacitated. The alarm must:

(1) Have a method to detect possible incapacitation of the master and actuate in the pilothouse when this condition exists;

(2) Require acknowledgement in the pilothouse within 10 minutes;

(3) If not acknowledged within 10 minutes, promptly notify another crewmember; and

(4) Be distinct from any other alarm.

(b) A towing vessel need not comply with this section if a second person is provided in the pilothouse.

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Sec. 143.330 Towing machinery.

(a) Towing machinery such as capstans, winches, and other mechanical devices used to connect the towing vessel to the tow must be designed and installed to maximize control of the tow.

(b) Towing machinery for towing astern must have sufficient safeguards (e.g., towing bitt with crossbar) to prevent the machinery from becoming disabled in the event the tow becomes out of line.

(c) Towing machinery used to connect the towing vessel to the tow must be suitable for its intended service. It must be capable of withstanding exposure to the marine environment, likely mechanical damage, static and dynamic loads expected during intended service, the towing vessel's horsepower, and arrangement of the tow.

(d) When a winch is used that has the potential for uncontrolled release under tension, a warning must be in place at the winch controls that indicates this. When safeguards designed to prevent uncontrolled release are utilized, they must not be disabled.

(e) ~~Each owner or managing operator~~The TSMS applicable to the towing vessel must ~~develop~~include procedures to routinely examine, maintain, and replace capstans, winches, and other machinery used to connect the towing vessel to the tow.

Sec. 143.335 Remote shutdowns.

(a) Each towing vessel must have a remote ~~manual~~ shutdown for each main propulsion engine and auxiliary generator engine, which can be operated from a location outside the machinery space where the engines are located.

(b) The fuel shutoff required by ~~Sec.~~ section 143.280(b) of this part may serve as the remote ~~manual~~ shutdown~~, provided each engine can be independently shutdown~~.

~~Sec. 143.340 Electrical power sources, generators, and motors.~~

~~(a) Functional Requirements. (1) Each towing vessel must have sufficient electrical power to provide for the applicable power needs for:~~

~~(i) Propulsion, steering and control systems;~~

~~(ii) Safety systems;~~

~~(iii) Navigation systems;~~

~~(iv) Control of the tow;~~

~~(v) Minimum conditions of habitability; and~~

~~(vi) Other installed or portable systems and equipment.~~

~~(2) Generators and motors must be suitably rated for the environment where they operate, marked with their respective ratings,~~

Comment [JAC58]: Delete. As recommended by TSAC, prescriptive requirements for electrical systems on existing towing vessels are not necessary. 14.305 adequately addresses electrical system requirements for existing towing vessels.

and suitably protected against overcurrent.

(3) In the event of a main power source failure, a towing vessel, other than an excepted towing vessel, must have a means to power essential alarms, lighting, radios, navigation equipment, and any other essential system identified by an approved third party or the cognizant Officer in Charge, Marine Inspection (OCMI).

(b) Prescriptive option to meet functional requirements. (1) The owner or managing operator of each towing vessel must complete a load analysis that shows that the electrical power source is sufficient to power the sum of connected loads described in paragraph (a)(1) of this section utilizing an appropriate load factor for each load.

(2) Prior to implementation of this section, the owner or managing operator must complete the load analysis of paragraph (b)(1) of this section. A record of the analysis must be retained by the owner or managing operator and be available upon request of the approved third party or cognizant OCMI.

(3) The owner or managing operator must have procedures for the evaluation of additional electrical loads added to the towing vessel to ensure compliance with paragraph (a)(1) of this section.

(4) Installed generators or motors must have a data plate listing rated kilowatts and power factor (or current), voltage, and ambient temperature.

(5) Generators must be provided with overcurrent protection no greater than 115 percent of their rated current and utilize a distribution panel.

(6) Motors must be provided with overcurrent protection that meets article 430 of the National Electric Code (NEC) (incorporated by reference in Sec. 143.120 of this subchapter). Steering motor circuits must be protected as per Part 4 Chapter 6 Section 2, Regulation 11 (except 11.7) of American Bureau of Shipping (ABS) Rules for Building and Classing Steel Vessels Under 90 Meters (295 feet) in Length, (incorporated by reference in Sec. 143.120 of this part).

(7) Generators and motors installed in machinery spaces must be certified to operate in an ambient temperature of 50[deg]C unless they are derated. When derating, divide the rated ambient temperature of the generator (in degrees Celsius) by 50[deg]C and multiply the resulting factor by the maximum rated current of the generator. Each generator and motor, except a submersible pump motor, must be in an accessible space which is adequately ventilated and as dry as practicable. It must be mounted above the bilges to avoid damage by splash and to avoid contact with low-lying vapors.

(8) A generator driven by a main propulsion unit (such as a shaft generator) which is capable of providing electrical power continuously, regardless of the speed and direction of the propulsion shaft, may be considered one of the power sources required by paragraph (a) of this section. Any vessel speed change or throttle movement must not cause electrical power interruption.

(9) Other than excepted towing vessels, each towing vessel that relies on electricity for power must be arranged so that the following loads can be energized from two independent sources of electricity:

(i) Alarms required by Sec. 143.245 of this part;

(ii) Emergency egress lighting, unless the requirements of Sec. 143.310(b)(2) or (3) of this part are met;

(iii) Navigation lights;

(iv) Pilothouse lighting;
(v) Any installed radios and navigation equipment; and
(vi) Any essential system identified by an approved third party or the cognizant Officer in Charge, Marine Inspection.
(vii) If a battery is used as the second source of electricity required of this subsection, it must be capable of supplying the loads for at least three hours.

Sec. 143.345 Electrical distribution panels and switchboards.

(a) Each distribution panel or switchboard on a towing vessel must be:
(1) In a location that is accessible, as dry as practicable, adequately ventilated, and protected from falling debris and dripping or splashing water;
(2) Totally enclosed and of the dead front type; and
(3) Fitted with a drip shield, unless the switchboard or distribution panel is of a type mounted deck-to-overhead and is not subject to falling objects or liquids from above.
(b) Each switchboard accessible from the rear must be constructed to prevent a person's accidental contact with energized parts.
(c) Nonconductive mats or grating must be provided on the deck in front of each switchboard and, if it is accessible from the rear, on the deck behind the switchboard.
(d) Each un-insulated current-carrying part must be mounted on noncombustible, nonabsorbent, and high-dielectric insulating material.
(e) Equipment mounted on a hinged door of an enclosure must be constructed or shielded so that a person will not come into accidental contact with energized parts of the door-mounted equipment when the door is open and the circuit energized.

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Sec. 143.350 Electrical overcurrent protection other than generators and motors.

(a) Functional requirement. Power and lighting circuits on towing vessels must be protected by suitable overcurrent protection. On a towing vessel, other than an excepted towing vessel as defined in Sec. 136.110 of this subchapter, an overcurrent protection device must not be used for both essential and non-essential systems.
(b) Prescriptive option to meet functional requirements. (1) Cable and wiring used in power and lighting circuits must be protected by overcurrent protection that opens the circuit at the standard setting closest to 80 percent of the manufacturer's listed ampacity. Overcurrent protection setting exceptions allowed by the National Electric Code (NEC), Article 240 (incorporated by reference in Sec. 143.120 of this subchapter) may be employed.
(2) If the manufacturer's listed ampacity is not known, table 310.16 of the NEC (incorporated by reference in Sec. 143.120 of this part) must be used, assuming a temperature rating of 75 degrees and an assumed temperature of 50 degrees Celsius for machinery spaces and 40 degrees for other spaces.

Comment [JAC59]: Delete. Prescriptive requirements for electrical systems on existing towing vessels are not necessary. 143.305 adequately addresses electrical systems on existing towing vessels.

Comment [JAC60]: Delete. 143.305 adequately addresses electrical system requirements for existing towing vessels. Prescriptive requirements are not necessary.

(3) Overcurrent protection devices must be installed in a manner that will not open the path to ground in a circuit; only ungrounded conductors must be protected. Overcurrent protection must be coordinated such that an overcurrent situation is cleared by the nearest circuit breaker or fuse.

(4) Each transformer must have protection against overcurrent that meets article 450 of the NEC (incorporated by reference in Sec. 143.120 of this part).

(5) On a towing vessel, other than an excepted vessel as defined in Sec. 136.110 of this subchapter, essential systems and non-essential systems must not be on the same circuit or share the same overcurrent protective device.

Sec. 143.355 Electrical grounding and ground detection.

(a) Dual voltage electrical distribution systems on towing vessels must have the neutral suitably grounded. There must be only one connection to ground, regardless of the number of power sources. This connection must be at the main switchboard or distribution panel.

(b) On a metallic towing vessel, a grounded distribution system must be grounded to the hull. This grounded system must be connected to a common, non-aluminum ground plate. The ground plate must have only one connection to the main switchboard or distribution panel, and the connection must be readily accessible for examination.

(c) On a nonmetallic towing vessel, all electrical equipment must be grounded to a common ground. Multiple ground plates bonded together are acceptable.

(d) Each insulated grounding conductor of a cable must be identified by one of the following means:

(1) Wrapping the cable with green braid or green insulation;

(2) Stripping the insulation from the entire exposed length of the grounding conductor; or

(3) Marking the exposed insulation of the grounding conductor with green tape or green adhesive labels.

(e) A towing vessel's hull may not carry current as a conductor, except for an impressed current cathodic protection system or a battery system to start an engine.

(f) Cable armor may not be used to ground electrical equipment or systems.

(g) Each receptacle outlet and attachment plug for a portable lamp, tool, or similar apparatus operating at 100 or more volts must have a grounding pole and a grounding conductor in the portable cord.

(h) In a grounded distribution system, only grounded, three-prong appliances may be used. Adaptors that allow an ungrounded, two-prong appliance to fit into a grounded, three-prong, receptacle must not be used.

(i) A suitable method must be in place to detect unintentional grounds.

Sec. 143.360 Electrical conductors, connections, and equipment.

(a) Each cable and wire on a towing vessel must:

Comment [JAC61]: Delete. 143.305 adequately addresses electrical systems on existing towing vessels. Moreover, most towing vessels are ungrounded and ABS River Rules specify that ungrounded distribution systems are to be provided for vessels carrying oil.

Comment [JAC62]: Delete. Prescriptive requirements not justified for existing towing vessels. 143.305 adequately addresses electrical systems on existing towing vessels.

(1) Have conductors with sufficient current-carrying capacity for the circuit in which it is used;
(2) Be suitably supported every 24 inches with metal supports and not installed with sharp bends;
(3) Be installed in a manner to prevent contact with personnel, mechanical hazards, and hazards from leaking fluids and must not be installed in bilges, locations where a piping leak would drip on them, across a normal walking path, or less than 24 inches from moving machinery;
(4) Have connections and terminations suitable for copper stranded conductors that retain the original electrical, mechanical, flame-retarding, and where necessary, fire-resisting properties of the conductor. If twist-on types of connectors are used, the connections must be made within an enclosure and the insulated cap of the connector must be secured to prevent loosening due to vibration. Twist-on type of connectors may not be used for making joints in cables, facilitating a conductor splice, or extending the length of a circuit;
(5) Be installed so as to avoid or reduce interference with radio reception and compass indication;
(6) Be protected from the weather;
(7) Be supported in order to avoid chafing or other damage;
(8) Be protected by metal coverings or other suitable means, if in areas subject to mechanical abuse;
(9) Be suitable for low temperature and high humidity, if installed in refrigerated compartments;
(10) Be located outside a tank, unless it supplies power to equipment in the tank; and
(11) If wire is installed in a tank, it must have sheathing or wire insulation compatible with the fluid in a tank.
(b) Extension cords may not be used as a permanent source of electrical power.
(c) Multi-outlet adapters may not be used to expand the capacity of a receptacle.

Subpart D--Requirements for Towing Vessels That Tow Oil or Hazardous Materials in Bulk

Comment [JAC63]: Recommend deleting this subpart. Coast Guard has not provided risk-based justification for requiring extensive retrofitting of existing towing vessels moving tank barges. Industry casualty history does not support this – most spills are caused by human error and a TSMS is the best way to address this risk.

Sec. 143.400 General applicability.

This subpart applies to a towing vessel subject to this subchapter that moves barges carrying oil or hazardous materials in bulk.
(a) An existing towing vessel need not comply with the requirements of this subpart until 5 years after the issuance of its first Certificate of Inspection (COI).
(b) An excepted towing vessel, as defined in Sec. 136.110 of this subchapter, is not required to comply with the requirements of this subpart.

Sec. 143.405 General requirements for propulsion, steering, and related controls.

(a) A towing vessel to which this subpart applies must have an

alternate means to control the propulsion and steering system which shall:

(1) Be independent of the primary control required by Sec. 143.240 of this part;

(2) Be located at or near the propulsion and steering equipment; and

(3) Be readily accessible and suitable for prolonged operation.

(b) A towing vessel to which this subpart applies must have a means to communicate between the operating station and the alternate propulsion and steering controls.

(c) A towing vessel to which this subpart applies must have a means to stop each propulsion engine and steering motor from the operating station.

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(d) The means to monitor the amount of thrust, rudder angle, and (if applicable) direction of thrust must be independent of the controls required by Sec. 143.240 of this part.

(e) The propulsion control system required by Sec. 143.240 of this part must be designed so that, in the event of a single failure of any component of the system, propeller speed and direction of thrust are maintained or reduced to zero.

(f) On a towing vessel with an integrated steering and propulsion system, such as a Z-drive, the control system required by Sec. 143.240 of this part must be designed so that, in the event of a single failure of any component of the system, propeller speed and direction of thrust are maintained or the propeller speed is reduced to zero.

(g) An audible and visual alarm must actuate at the operating station when:

(1) The propulsion control system fails;

(2) A non-follow up steering control system fails, if installed; and

(3) The ordered rudder angle does not match the actual rudder position on a follow-up steering control system, if installed. This alarm must have an appropriate delay and error tolerance to eliminate nuisance alarms.

(h) Alarms must be separate and independent of the control system required by Sec. 143.240 of this part and function when primary electrical power is lost.

(i) A means of communication must be provided between the operating station and any crewmember(s) required to respond to alarms.

(j) The two sources of electricity required by Sec. 143.340(a)(3) and (b)(9) of this part must be capable of powering electrical loads needed to maintain propulsion, steering, and related controls for not less than 3 hours.

(k) A towing vessel to which this subpart applies that uses propulsion, steering, or related controls that are directly reliant on electrical power, must have a means to automatically restore power to propulsion, steering, and related controls when the main power source fails.

(l) A towing vessel to which this subpart applies that uses propulsion, steering, or related controls that are directly reliant on stored energy, such as air or hydraulics, must:

(1) Have two independent, stored energy systems capable of maintaining propulsion, steering, and related controls; and
(2) If the stored energy system is recharged by electrical power, have sufficient stored energy available to provide time to switch electrical power sources without a loss of propulsion, steering, or related controls.
(m) After a power failure, electrical motors used to maintain propulsion and steering must automatically restart when power is restored, unless remote control starting is provided at the operating station.

Sec. 143.410 Propulsor redundancy.

(a) A towing vessel must be provided with at least two independent propulsors unless the requirements of Sec. 143.420 are met.
(b) There must be independent controls for each propulsor at the operating station.
(c) In the event of a failure of a single propulsor, the remaining propulsor(s) must have sufficient power to maneuver the vessel to a safe location.

Sec. 143.420 Vessels with one propulsor.

(a) A towing vessel must have independent, duplicate vital auxiliaries. For the purpose of this section, vital auxiliaries are the equipment necessary to maintain the propulsion engine (e.g., fuel, lubricating oil, and cooling pumps). In the event of a failure or malfunction of any single vital auxiliary, the propulsion engine must continue to provide propulsion adequate to maintain control of the tow.
(b) In the event of a failure, the corresponding independent duplicate vital auxiliary, described in paragraph (a) of this section, must automatically assume the operation of the failed unit.
(c) Propulsion engine fuel line(s) must meet the requirements of Sec. 143.285, regardless of build date.
(d) A towing vessel must be provided with an independent, auxiliary steering system that:
(1) Has independent controls available at the operating station;
(2) Is immediately available upon the loss of main steering system;
(3) Is appropriate to maneuver the tow; and
(4) Remains operable in the event of any single failure that affects the main steering system. This does not apply to failures of the tiller, quadrant, or other equipment that serve the same purpose.
(e) For the purpose of this section, the place where isolation valves join the piping system, as by a flange, constitutes a single-failure point. The valve itself need not constitute a single-failure point if it has a double seal to prevent substantial loss of fluid under pressure.

Sec. 143.430 Alternative standards.

(a) In lieu of meeting this subpart, a towing vessel may comply

~~with the American Bureau of Shipping (ABS) Steel rules for vessels under 90 meters (incorporated by reference in Sec. 143.120 of this part) as follows:~~

~~(1) Sections 4-7-5 (class ACBU) and 4-3-5 (class R2); and~~

~~(2) A vessel that operates exclusively on rivers or intracoastal waterways need not meet 4-7-4/3.9 and the automatic day tank fill pump requirement of 4-7-4/25.3.~~

~~(b) A vessel meeting the alternative standards of this section must comply with Sec. 143.435 of this subpart.~~

~~Sec. 143.435 Demonstration of compliance.~~

~~(a) The owner or managing operator of each towing vessel must devise test procedures that demonstrate compliance with the design and engineering requirements prescribed in this subpart.~~

~~(b) The tests required in paragraph (a) of this section must be satisfactorily conducted and witnessed by an approved third party or cognizant Officer in Charge, Marine Inspection (OCMI) prior to implementation date of this section. A record of the test must be retained by the owner or managing operator and be available upon request of the approved third party or cognizant OCMI.~~

Subpart E--New Towing Vessels

Sec. 143.500 Applicability.

This subpart applies to a new towing vessel, as defined in ~~Sec.~~ section 136.110 of this subchapter, unless it is an excepted towing vessel.

Sec. 143.505 Standards to be used.

(a) Except as noted in paragraph (b) of this section, a new towing vessel must be constructed using the standards specified in this part. The standard selected must be used in its entirety.

(b) An alternate standard may be considered by the Commanding Officer, Marine Safety Center where it can be shown that it provides an equivalent level of safety and performance.

Sec. 143.510 Plan approval.

Procedures for plan approval are contained in part 144 of this subchapter.

Sec. 143.515 Towing vessels built to American Bureau of Shipping rules.

(a) Except as noted in paragraph (b) of this section:

(1) A towing vessel classed by the American Bureau of Shipping

(ABS) (incorporated by reference in ~~Sec.~~section ~~—~~143.120 of this part) in accordance with ~~their~~ABS rules ~~as~~ appropriate for the intended service and routes ~~is considered in~~ compli~~es~~ance with this subpart.

(2) A towing vessel built and equipped to conform to ABS

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(incorporated by reference in ~~Sec.~~ section 143.120 of this subchapter) rules appropriate for the intended service and routes, but not currently classed, may be deemed to be in compliance with this subpart ~~providing~~if it can be shown that the vessel continues to conform to ABS rules.

(b) In addition to the requirements in paragraph (a) of this section, a new towing vessel:

~~(1) That moves barges carrying oil or hazardous materials in bulk must meet the class requirements described in Sec. 143.430 of this part.~~

~~(2) Must meet the potable water requirements in Sec. 143.530 of this part.~~

(1~~3~~) Must meet the pilothouse alerter requirements in ~~Sec.~~ section 143.325 of this part.

(2~~4~~) Must meet the towing machinery requirements of ~~Sec.~~ section 143.330 of this part.

Sec. 143.520 Towing vessels built to American Boat and Yacht Council (ABYC) standards.

(a) Except as noted in paragraph (b) of this section, a new towing vessel 65 feet (19.8 meters) or less in length built to conform with the American Boat and Yacht Council (ABYC) standards listed in this paragraph (i~~I~~ncorporated by reference in ~~Sec.~~section ~~—~~143.120 of this subchapter) ~~is considered in~~ compli~~es~~ance with this subpart.

(1) H-2-Ventilation of Boats Using Gasoline;
(2) H-22--Electric Bilge Pump Systems;
(3) H-24--Gasoline Fuel Systems;
(4) H-25--Portable Gasoline Fuel Systems for Flammable Liquids;
(5) H-32--Ventilation of Boats Using Diesel Fuel;
(6) H-33--Diesel Fuel Systems;
(7) P-1--Installation of Exhaust Systems for Propulsion and Auxiliary Engines; and
(8) P-4--Marine Inboard Engines and Transmissions
(9) ABYC E-11--AC & DC Electrical Systems on Boats.

(b) In addition to the requirements in paragraph (a) of this section, a new towing vessel 65 feet (19.8 meters) or less in length must meet the:

(1) Requirements of subpart B of this part;

~~(2) Requirements described in subpart D of this part if it moves oil or hazardous materials in bulk;~~

~~(3) Potable water requirements in Sec. 143.530 of this part;~~

(2~~4~~) Pilothouse alerter requirements in ~~Sec.~~ section 143.325 of this part;

and

(35) Towing machinery requirements of ~~Sec.~~ section 143.330 of this part.

Sec. 143.525 Towing vessels not built to American Bureau of Shipping (ABS) rules or American Boat and Yacht Council (ABYC) standards.

A new towing vessel not built to American Bureau of Shipping rules or American Boat and Yacht Council standards must meet subparts B and C of this part and ~~Sec. Sec.~~ sections 143.530 through 143.555 of this subpart.

~~Sec. 143.530 [Reserved]~~

~~Sec. 143.532 New towing vessels that move barges carrying oil or hazardous materials in bulk.~~

~~A new towing vessel that moves barges carrying oil or hazardous materials in bulk must meet the requirements in subpart D of this part.~~

Sec. 143.535 Pumps, pipes, valves, and fittings for essential systems.

(a) In lieu of meeting the requirements of ~~Sec.~~ section 143.285 of this part, a new towing vessel must meet the requirements of this section.

(b) Except as noted in paragraph (c) of this section, pumps, pipes, valves, and fittings in essential systems on vessels must meet American Bureau of Shipping (ABS) R~~r~~ules for Steel Vessels under 90 Meters (incorporated by reference in ~~Sec.~~ section 143.120 of this part), Part 4, Chapter 4 as applicable.

(c) Pumps, pipes, valves, and fittings in essential systems on towing vessels operating exclusively on rivers or intracoastal waterways may meet ABS Rules for Steel Vessels on Rivers and Intracoastal Waterways (incorporated by reference in ~~Sec.~~section ~~143~~.120 of this subchapter), Part 4, Chapter 3 as applicable in lieu of paragraph (b) of this section.

Sec. 143.540 Pressure vessels.

(a) In lieu of meeting the requirements of ~~Sec.~~ section 143.300 of this part, a new towing vessel must meet the requirements of this section.

(b) Pressure vessels over 5 cubic feet in volume and over 15 pounds per square inch maximum allowable working pressure on new towing vessels must meet American Bureau of Shipping Rules for Steel Vessels under 90 Meters (incorporated by reference in ~~Sec.~~ section 143.120 of this part), Part 4, Chapter 1, Section 1, Regulation 7.5.

Sec. 143.545 Steering systems.

(a) Except as noted in paragraph (b) of this section, steering systems on new towing vessels must meet American Bureau of Shipping (ABS) rules for Steel Vessels under 90 Meters (incorporated by reference in ~~Sec.~~ section 143.120 of this part), section 4-3-3, as applicable.

(b) Steering systems on new towing vessels operating exclusively on rivers or intracoastal waterways may meet ABS Rules for Steel Vessels on Rivers and Intracoastal Waterways (incorporated by reference in ~~Sec.~~section 143.120 of this part), section 4-2-3 as applicable, in lieu of paragraph (a) of this section.

Sec. 143.550 Electrical installations.

~~(a) In lieu of meeting the requirements of Sec. Sec. 143.340-360 of this part, a new towing vessel must meet the requirements of this section.~~

(a~~b~~) Except as noted in paragraph (c) of this section, electrical installations on new towing vessels must meet American Bureau of Shipping (ABS) Rules for Steel Vessels Under 90 Meters (incorporated by reference in ~~Sec.~~section 143.120 of this part), chapter 4-6.

(c) Electrical installations on new towing vessels operating exclusively on rivers or intracoastal waterways may meet ABS Rules for Steel Vessels on Rivers and Intracoastal Waterways (incorporated by reference in ~~Sec.~~section ~~–~~143.120 of this part), Part 4, Chapter 5 in lieu of paragraph (a) of this section.

PART 144--CONSTRUCTION AND ARRANGEMENT

Subpart A-General
Sec.
144.100 Purpose.
144.105 Definitions.
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Subpart B--All Towing Vessels
144.200 Applicability.
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144.210 General.
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144.235 Verification for sister towing vessels.
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Subpart C--Existing Towing Vessels

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Authority: 46 U.S.C. 3103, 3301, 3306, 3308, 3316, 8104, 8904; 33 CFR 1.05; DHS Delegation 0170.1.

Subpart A--General

Sec. 144.100 Purpose.

This part details the requirements for design, construction and arrangement, and plan review and approval for towing vessels.

Sec. 144.105 Definitions.

The definitions provided in Sec.section 136.110 of this subchapter apply to this part.

Sec. 144.110 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish notice of change in the Federal Register and the material must be available to the public. All approved material is available for inspection at the National Archives and Records Administration (NARA). For information on

the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal regulations/ibr_locations.html. Also, it is available for inspection at U.S. Coast Guard, Office of Design and Engineering Standards (CG-521), 2100 Second Street SW., Washington, DC 20593-0001, and is available from the sources listed in paragraph (b) of this section.

(b) The material approved for incorporation by reference in this part and the sections affected are:

American Bureau of Shipping (ABS), ABS Plaza, 16855 Northchase Drive, Houston, TX 77060	
Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways, 2007.....	144.410
Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length, 2006.....	144.410
International Maritime Organization, (IMO). 4 Albert Embankment, London SE1 7SR	
Resolution A.688(17) Fire Test Procedures For Ignitability of Bedding Components, 1991.....	144.435

Subpart B--All Towing Vessels

Sec. 144.200 Applicability.

This subpart applies to all towing vessels subject to this subchapter.

~~Sec. 144.205 Towing Safety Management System (TSMS).~~

~~If a Towing Safety Management System (TSMS) is applicable to the vessel, the TSMS must:~~

~~(a) Include policies and procedures to ensure compliance with this part; and~~

~~(b) Provide objective evidence that documents compliance with the TSMS.~~

Comment [JAC64]: Redundant of 138.220.

Sec. 144.210 General.

The construction and arrangement of the towing vessel must be suitable for the service and route of the towing vessel, including the welfare of the crew and control of the tow.

Sec. 144.215 Special consideration.

The cognizant Officer in Charge, Marine Inspection may give special consideration to the structural requirements for ~~small~~excepted towing vessels, towing vessels operating exclusively within a limited geographic area, towing vessels under 65 feet in length, or towing vessels of an unusual design not contemplated by the rules of the American Bureau of Shipping or other recognized classification society.

Sec. 144.220 Verification of compliance.

A verification of compliance with ~~established~~ the standards of this part that are applicable to the towing vessel must be performed as follows:

(a) Prior to conducting a major conversion as defined in section 136.110 of this subchapter~~ or alternation to the hull, machinery, or equipment that affect the safety of a new or existing towing vessel~~;

~~(b) For new installations, after [date final rule takes effect], that are not ``replacements in kind'' on an existing towing vessel;~~ and

(b~~c~~) Upon request of the Coast Guard.

Sec. 144.225 Qualifications.

(a) A v~~V~~erification of compliance ~~with~~required by this part must be performed by a registered Professional Engineer (P.E.) licensed by one of the 50 states of the United States or the District of Columbia, or by a current, full time employee of the American Bureau of Shipping (ABS).

(b) The P.E. must ensure that he or she does not exceed the scope of his or her P.E. license.

(c) In the case of ~~certifications~~verifications by ABS employees, ABS must ensure the ~~reviewer~~employee holds proper ABS qualifications for the particular type of ~~review~~verification being conducted.

Sec. 144.230 Procedures for verification of compliance with construction and arrangement standards.

(a) Verification of compliance with the applicable construction and arrangement s~~S~~tandards of this part~~ for towing vessels~~, when required, must be performed by an individual meeting the requirements of ~~Sec.~~ section 144.225 of this part.

(b) Objective evidence of compliance must be provided to the Coast Guard and include:

(1) A description of the towing vessel's intended service and route;

(2) The standards applied;

(3) Deviations from the standards used;

(4) A statement that the towing vessel is suitable for the intended service and route;
(5) The name, address, employer affiliation, license number, and state of licensure of the professional engineer or qualified ABS employee making the verification, as applicable; and
(6) Attestation by the builder of the towing vessel that the towing vessel was built to plans.
(c) The verification must include a review and analysies of sufficient plans, drawings, schematics, and calculations to ensure the towing vessel complies with the applicable standards ~~used~~. The plans must be stamped or otherwise indicate that they have been reviewed by an individual meeting the requirements of ~~Sec.~~ section 144.225.
(d) A copy of the verified plans must be forwarded to the cognizant Officer in Charge, Marine Inspection in whose zone the work will be performed.
(e) A copy of the verified plans must be available at the construction site.
(f) Plans reviewed and approved by the American Bureau of Shipping need not be forwarded to the Coast Guard unless requested.

Sec. 144.235 Verification for sister towing vessels.

(a) A full verification of compliance is not required for sister towing vessels, provided that:
(1) The plans for the original towing vessels have already been verified as complying with the applicable standards of this part;
(2) The owner authorizes their use for the new construction;
(3) The regulations or published standards have not changed since the original verification;
(4) The sister towing vessel is built to the same plans and equipped with the same machinery as the ~~first~~original towing vessel of the class, and has not been subsequently modified;

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(5) The sister towing vessel is built in the same shipyard facility as the ~~first~~original towing vessel;
(6) For stability purposes, the sister towing vessel is delivered within 2 years of the stability test date of an earlier towing vessel in the class. If delivered later than 2 years, the sister towing vessel must undergo a deadweight survey to determine its actual light ship displacement and Longitudinal Center of Gravity (LCG). If the deadweight survey results are within 3 percent of the earlier towing vessel's approved light ship displacement and within 1 percent Length Between Perpendiculars (LBP)

of the earlier towing vessel's approved light ship LCG, it may be accepted as a sister towing vessel and use the earlier towing vessel's approved light ship Vertical Center of Gravity (VCG); and

(7) If no towing vessel of the class previously underwent a stability test, then 1~~one~~ towing vessel of the class must undergo a stability test in accordance with 46 CFR Part 170 Subpart F, and the sister towing vessel(s) must undergo a deadweight survey in accordance with paragraph (a)(6) of this section.

(b) A statement verifying sister status from an individual meeting the requirements of ~~Sec.~~ section 144.225 of this section must be retained and produced upon request.

Sec. 144.240 Marking of towing vessels.

(a) The hull of each documented towing vessel must be marked as required by part 67 of this chapter.

(b) The hull of each undocumented towing vessel must be marked with its name and hailing port.

(c) A towing vessel required to comply with ~~Sec. Sec.~~sections ~~–~~144.315 and 144.415 must have the drafts of the towing vessel plainly and legibly marked up the stem and upon the sternpost or rudderpost or at any place at the stern of the towing vessel that is easily observed. The bottom of each mark must indicate the draft.

(d) Each towing vessel assigned a load line must have load line markings and deck line markings permanently scribed or embossed as required by subchapter E of this chapter.

(e) Watertight doors and watertight hatches must be marked on both sides in clearly legible letters at least 25 millimeters (1 inch) high: ``WATERTIGHT DOOR--KEEP CLOSED'' or ``WATERTIGHT HATCH--KEEP CLOSED''.

(f) All escape hatches and other emergency exits used as means of escape must be marked on both sides in clearly legible letters at least 50 millimeters (2 inches) high: ``EMERGENCY EXIT, KEEP CLEAR''.

Subpart C--Existing Towing Vessels

Sec. 144.300 Applicability.

This subpart applies to ~~all~~ existing towing vessels as defined in ~~Sec.~~ section 136.110 of this subchapter.

Sec. 144.305 General.

(a) ~~Except as otherwise required in this part, a~~An existing towing

vessel must be built and maintained in a manner suitable for its intended service and route~~comply with the construction and arrangement standards that were applicable to the vessel prior to the implementation date of these regulations~~.

(b) Alterations or modifications made to the structure or arrangements of an existing towing vessel on or after the [effective date of regulations], that ~~are~~ constitute a major conversion as defined in section 136.110 of this subchapter, ~~on or after the [effective date of regulations],~~ must comply with the applicable requirements ~~regulations~~ of this part.

(c) Repairs conducted on an existing towing vessel~~, resulting in no significant changes to the original structure or arrangement of the vessel,~~ must comply with any ~~the~~ standards applicable to the towing vessel at the time of construction or as an alternative, with the regulations in this part.

Sec. 144.310 Structural standards.

(a) A existing towing vessel classed by the American Bureau of Shipping (ABS) in accordance with ~~their~~ ABS rules ~~as~~ appropriate for the intended service and routes of the towing vessel, meets the structural standards of this ~~sub~~part.

(b) A existing towing vessel with a valid load line certificate issued in accordance with Subchapter E of this chapter may be deemed in compliance with the structural requirements of this ~~sub~~part.

(c) A existing towing vessel built to International Convention for Safety of Life at Sea (SOLAS) 1974, as amended, is considered to be in compliance with this part.

(d) A existing towing vessel built and equipped to conform to ABS rules appropriate for the intended service and routes, but not currently classed, may be deemed to be in compliance with this ~~sub~~part, provided that the towing vessel continues to conform to ABS rules.

(e) The current standards of other recognized classification societies may be accepted upon approval by the Coast Guard.

(f) Classification by a recognized classification society is not required.

Sec. 144.315 Stability.

(a) This section applies to an existing towing vessel with a previously issued stability document.

(b) Each existing towing vessel operating under a previously issued stability document must continue to operate in accordance with the conditions specified therein and the requirements of this section.

(c)(1) A weight and moment history of changes to the towing vessel since approval of its light ship characteristics (displacement, Longitudinal Center of Gravity (LCG) and Vertical Center of Gravity (VCG)) shall be maintained. All weight modifications to the towing vessel (additions, removals, and relocations) shall be recorded in the history, along with

Comment [JAC65]: Consistent with TSAC recommendations. Confusing to refer to standards that are non-existent for most existing towing vessels.

a description of the change(s), when and where accomplished, moment arms, etc. After each modification, the light ship characteristics shall be recalculated.

(2) When the aggregate weight change (absolute total of all additions, removals, and relocations) is more than 2 percent of the towing vessel's approved light ship displacement, or the recalculated change in the towing vessel's light ship LCG is more than 1 percent of its length between perpendiculars (LBP), a deadweight survey shall be performed to determine the towing vessel's current light ship displacement and LCG. If the deadweight survey results are within 1 percent of the recalculated light ship displacement and within 1 percent LBP of the recalculated light ship LCG, then the recalculated light ship VCG can be accepted as accurate. If, however, the deadweight survey results are outside these tolerances, then the towing vessel must undergo a full stability test in accordance with 46 CFR 170 subpart F.

(3) When the aggregate weight change is more than 10 percent of the towing vessel's approved light ship displacement, the towing vessel must undergo a full stability test in accordance with 46 CFR Part 170 Subpart F.

(d) The cognizant Officer in Charge, Marine Inspection may restrict the route of an existing towing vessel based on concerns for the towing vessel's stability.

Sec. 144.320 Watertight integrity.

(a) On a~~A~~n existing towing vessel ~~must comply with the watertight integrity regulations which were applicable to the vessel on [EFFECTIVE DATE OF FINAL RULE], except that~~:

(1) Hatches, doors, vent closures, and other fittings affecting the watertight integrity of the towing vessel must be in place and operable;

(2) Decks and bulkheads designed to be watertight or weathertight must be maintained in that condition;

(3) Piping systems that penetrate the hull and tanks that are integral to the hull must be made of appropriate metal;

(4) Each existing towing vessel fitted with installed bulwarks around the exterior of the main deck must have sufficient freeing ports or scuppers or a

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combination of freeing ports and scuppers to allow water to run off the deck quickly without adversely affecting the stability of the towing vessel;
and

(5) Closure devices must be provided for cabin or hull penetrations~~,~~ that ~~which~~ open to the exterior of the towing vessel and ~~which~~ may allow water to enter the towing vessel. These devices must be suitable for the ~~expected~~intended route.

(b) The cognizant Officer in Charge, Marine Inspection may require

review of an existing towing vessel's watertight and weathertight integrity. This review may be performed by an individual meeting the requirements of section ~~Sec.~~ 144.225 of this part. The review may include an examination of drawings or plans that show the original placement of decks and bulkheads.

Sec. 144.325 Visibility from pilothouse.

(a) Windows and other openings at the pilothouse of an existing towing vessel must be of sufficient size and properly located to provide a clear field of vision ~~for safe operation in any condition~~in all lateral directions from the operating station.

(b) Means must be provided to ensure that windows immediately forward of the steering station in the pilothouse allow for adequate visibility to ensure safe navigation regardless of weather conditions. This may include mechanical means such as windshield wipers, defoggers, clear-view screens, or other such means, taking into consideration the intended route of the towing vessel.

Sec. 144.330 Emergency escape.

(a) Where practicable, each space on an existing towing vessel where crew may be quartered or normally employed must have at least two means of escape.

(b) The two required means of escape must be widely separated and, if possible, at opposite ends or sides of the space. Means may include normal and emergency exits, passageways, stairways, ladders, deck scuttles, doors, and windows.

(c) On an existing towing vessel of 65 feet (19.8 meters) or less in length, a window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape from an enclosed space, provided it:

(1) Does not lead directly overboard;

(2) Is suitably marked; and

(3) Has a means to open a window or break a glass.

(d) Only one means of escape is required from a space where:

(1) The space has a deck area less than 30 square meters (322 square feet);

(2) There is no stove, heater, or other source of fire in the space;

(3) The means of escape is located as far as possible from a machinery space or fuel tank; and

(4) If an accommodation space, the single means of escape does not include a deck scuttle or a ladder.

(e) Existing arrangements may be retained if it is impracticable or unreasonable to provide two means of escape.

Sec. 144.335 Handrails and bulwarks.

(a) Rails or equivalent protection must be installed on existing towing vessels near the periphery of all decks accessible to crew.

Equivalent protection may include lifelines, wire rope, chains, and bulwarks that provide strength and support equivalent to fixed rails.

(b) In areas where space limitations or operational requirements for crew ingress and egress make deck rails impractical, ~~such as at narrow catwalks in way of deckhouse sides,~~ hand grabs may be substituted.

Sec. 144.340 Storm rails.

On existing towing vessels in ocean and coastwise service, suitable storm rails must be installed in all passageways and at the deckhouse sides where persons onboard might have normal access. Storm rails must be installed on both sides of passageways which are 6 feet or more in width.

~~Sec. 144.345 Guards in dangerous places.~~

~~An exposed hazard on existing towing vessels, such as gears and rotating machinery, must be protected by a cover guard or rail. This is not meant to restrict access to towing equipment such as winches, drums, towing gear or steering compartment equipment necessary for the operation of the vessel.~~

Comment [JAC66]: Moved to 143.230 to avoid redundancy.

Sec. 144.350 Exhausts.

(a) Exhausts of internal-combustion engines, galley uptakes, and similar sources of ignition on existing towing vessels must be kept clear of and insulated from woodwork and other combustible matter.

(b) Each dry exhaust pipe from an internal combustion engine which is within reach of personnel during normal operations must be insulated or otherwise guarded to prevent burns.

Sec. 144.355 Crew spaces.

(a) Overnight accommodations must be provided for crewmembers on an existing towing vessel if it is operated more than 12 hours in a 24-hour period, unless the crew is put ashore and the towing vessel is provided with a new crew.

(b) Crew accommodation spaces and work spaces must be of sufficient size, adequate construction, and with suitable equipment to provide for the safe operation of the towing vessel and the protection and accommodation of the crew in a manner practicable for the size, facilities, service, route, and modes of operation of the towing vessel.

(c) The deck above a crew accommodation space must be located above the deepest load waterline.

(d) Condition of the crew accommodations should ~~consider~~ provide a suitable environment for sleep and off-duty rest. ~~the~~

~~importance of crew rest.~~ Factors to consider include: vibrations, ambient light, noise levels, and general comfort. ~~Every effort should be made to ensure that quarters help provide a suitable environment for sleep and off-duty rest~~.

Sec. 144.360 Ventilation for accommodations.

(a) Each accommodation space on an existing towing vessel must be ventilated in a manner suitable for the purpose of the space.

(b) Existing towing vessels of more than 65 feet (19.8 meters) in length with overnight accommodations must have mechanical ventilation systems unless a natural system, such as opening windows, portholes, or doors, will provide adequate ventilation in ordinary weather.

~~(c) Means must be provided for stopping each fan in a ventilation system serving machinery spaces and for closing, in case of fire, each doorway, ventilator, and annular space around funnels and other openings into such spaces.~~

Comment [JAC67]: Not related to the subject of this section, ventilation for accommodations. Moved to 143.235, Machinery Space Fire Prevention.

Subpart D--New Towing Vessels

Sec. 144.400 Applicability.

This subpart applies to new towing vessels as defined in ~~Sec.~~section 136.110 of this subchapter.

Sec. 144.405 Towing v~~V~~essels built to class.

A new towing vessel classed by the American Bureau of Shipping in accordance with ~~their~~ABS rules ~~as~~ appropriate for the intended service and routes, meets the structural standards of this subpart.

Sec. 144.410 Structural standards.

(a) Except as provided by paragraphs (b) and (d) of this section, compliance with the construction and structural rules established by the American Bureau of Shipping is acceptable for the design and construction of a new towing vessel.

(1) For new towing vessels to be certificated for service on lakes, bays, and sounds, limited coastwise, coastwise, and oceans routes, American Bureau of Shipping (ABS) Rules for Building and Classing Steel Vessels Under 90 Meters (295 Feet) in Length (incorporated by reference in Sec. 144.110 of this part) apply.

(2) For new towing vessels to be certificated for service on rivers, ~~or~~ intracoastal waterways, ~~routes,~~the limited coastwise route from St. Marks to Carrabelle, FL, and the limited Great Lakes route from Chicago to Burns Harbor, IN, ABS Rules for Building and Classing Steel Vessels for Service on Rivers and

Intracoastal Waterways (incorporated by reference in ~~Sec.~~ section 144.110 of this part) apply.

(b) The current standards of a recognized classification society~~,~~ other than ABS may be used if they provide an equivalent level of safety.

(c) Classification by a recognized classification society is not required.

(d) Application may be made for use of alternative standards. Consideration of alternative standards will be given on a case-by-case basis upon review of towing vessel size, service, route, configuration, and other factors as deemed appropriate by the Commanding Officer, Marine Safety Center (MSC).

(e) The plans required by ~~Sec.~~ section 144.230 of this part must specify the standard to which the towing vessel is designed.

(f) The standard selected must be applied throughout the towing vessel, including standards for design, construction, installation, maintenance, alteration, and repair. Deviations are subject to approval by the Commanding Officer, MSC.

Sec. 144.415 Stability.

(a) Except as otherwise provided in paragraphs (b) and (c) of this section, each new towing vessel must meet the applicable stability requirements of part 170 and subpart E of part 173 of this chapter.

(b) For new towing vessels with a load line, the review, approval, and issuance of stability documentation (including stability tests) per ~~Sec. Sec.~~sections ~~–~~170.110 and 170.120, and 170 subpart F must be done by the load line issuing authority. For new towing vessels without a load line, these functions must be done by an individual meeting the requirements of ~~Sec.~~ section 144.225 of this part.

~~(c)(1) Each new towing vessel certificated to operate on protected waters must meet the requirements of Sec. 170.173(c)(2);~~

~~(2) Each new towing vessel certificated to operate on partially protected waters must meet the requirements of Sec. Sec. 170.170 and 170.173(c)(1);~~

(3) Each new towing vessel that is certificated to operate on exposed waters (including oceans, Great Lakes, and coastwise routes more than 20 nautical miles from the mouth of a harbor of safe refuge), or that requires a load line, must meet the requirements of sections ~~Sec. Sec.~~ 170.170 and 174.145.

(d) Each new towing vessel equipped for lifting must meet the requirements of subpart B of part 173 of this chapter.

(e)(1) A weight and moment history of changes to the towing vessel since approval of its light ship characteristics (displacement, Longitudinal Center of Gravity (LCG) and Vertical Center of Gravity (VCG)) shall be maintained. All weight modifications to the towing vessel (additions,

Comment [JAC68]: No risk-based justification for subjecting towing vessels operating on protected or partially protected waters to these standards. Not required under ABS River Rules for classed vessels.

removals, and relocations) shall be recorded in the history, along with a description of the change(s), when and where accomplished, moment arms, etc. After each modification, the light ship characteristics shall be recalculated.

(2) When the aggregate weight change (absolute total of all additions, removals, and relocations) is more than two percent of the towing vessel's approved light ship displacement, or the recalculated change in the towing vessel's light ship LCG is more than 1 percent of its length between perpendiculars (LBP), a deadweight survey shall be performed to determine the towing vessel's current light ship displacement and LCG. If the deadweight survey results are within 1 percent of the recalculated light ship displacement and within 1 percent LBP of the recalculated light ship LCG, then the recalculated light ship VCG can be accepted as accurate. If, however, the deadweight survey results are outside these tolerances, then the towing vessel must undergo a full stability test in accordance with 46 CFR 170 subpart F.

(3) When the aggregate weight change is more than 10 percent of the towing vessel's approved light ship displacement, the towing vessel must undergo a full stability test in accordance with 46 CFR part 170 subpart F.

(f) The cognizant Officer in Charge, Marine Inspection may restrict the route of a towing vessel based on concerns for the towing vessel's stability.

Sec. 144.420 Minimum standards.

Regardless of the construction and arrangements standards used, each new towing vessel must, as a minimum, meet the requirements of this subpart and subparts B and C of this part, as appropriate.

Sec. 144.425 Visibility.

(a) Each new towing vessel must be constructed in order to ensure a clear field of vision from the operating station. The field of vision must extend over an arc from dead ahead to at least 60 degrees on either side of the towing vessel.

(b) If towing astern, the primary steering station must be provided with a view aft.

(c) Means must be provided to ensure that windows immediately forward of the steering station in the pilothouse allow for adequate visibility to ensure safe navigation regardless of weather conditions. This may include mechanical means such as windshield wipers, defoggers, clear-view screens, or other such means, as appropriate for the intended route.

Sec. 144.430 Windows and portholes.

(a) Glass and other glazing materials used in windows of new towing

vessels must be materials that will not break into dangerous fragments if fractured.

(b) Each window or porthole, and its means of attachment to the hull or the deckhouse, must be capable of withstanding the maximum expected load from wind and waves, due to its location on the towing vessel and the towing vessel's authorized route.

(c) Any covering or protection placed over a window or porthole that could be used as a means of escape must be able to be readily removed or opened from within the space.

Sec. 144.435 General fire protection.

(a) Each new towing vessel must be designed and constructed to minimize fire hazards as far as reasonable and practicable.

(b) Machinery and fuel tank spaces must be separated from accommodation spaces by bulkheads. Doors may be installed provided they are the self-closing type.

(c) Exhausts of internal-combustion engines, galley uptakes, and similar sources capable of starting a fire must be kept clear of and insulated from woodwork and other combustible matter.

(d) Paint lockers and similar compartments must be constructed of steel or be wholly lined with steel and comply with ~~Sec.~~ section 142.225 of this subchapter.

(e) Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of noncombustible materials with no openings in the sides or bottom.

(f) All mattresses must comply with either:

(1) The U.S. Department of Commerce Standard for Mattress Flammability (FF 4-72.16), 16 CFR part 1632, Subpart A and not contain polyurethane foam; or

(2) International Maritime Organization Resolution A.688(17) Fire Test Procedures For Ignitability of Bedding Components (incorporated by reference in ~~Sec.~~ section 144.110 of this part). Mattresses that are tested to this standard may contain polyurethane foam.

Dated: July 19, 2011.
Robert J. Papp, Jr.,
Admiral, U.S. Coast Guard, Commandant.
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