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DEPARTMENT OF HOMELAND SECURITY

Coast Guard

46 CFR Parts 10, 11, and 15

[Docket No. USCG-2018-0100]

RIN 1625-AC46

Amendments to the Marine Radar Observer Refresher Training Regulations

AGENCY: Coast Guard, DHS.

ACTION: Final rule.

SUMMARY: The Coast Guard is revising its merchant mariner credentialing regulations to remove obsolete portions of the radar observer requirements and harmonize the radar observer endorsement with the merchant mariner credential. These revisions will reduce an unnecessary financial burden on mariners required to hold a radar observer endorsement. This rule will affect mariners who have served on radar-equipped vessels, in a position that routinely uses radar for 1 year in the previous 5 years for navigation and collision avoidance purposes, and mariners who have taught a Coast Guard-approved or accepted radar course at least twice within the past 5 years. These mariners will no longer be required to complete a Coast Guard-approved or accepted radar refresher or recertification course in order to renew their radar observer endorsements. We are retaining the existing requirements for mariners seeking an original radar observer endorsement and for mariners who do not have 1 year of routine relevant sea service on board radar-equipped vessels in the previous 5 years or have not

taught a Coast Guard-approved or accepted radar course at least twice within the past 5 years. This final rule adopts, with modification, the notice of proposed rulemaking published on June 11, 2018.

DATES: This final rule is effective July 22, 2019.

ADDRESSES: You may view comments and related material identified by docket number USCG-2018-0100 using the Federal eRulemaking Portal at <https://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: For information about this document call or email Mr. Davis Breyer, Coast Guard; telephone 202-372-1445, email davis.j.breyer@uscg.mil.

SUPPLEMENTARY INFORMATION:

Table of Contents for Preamble

- I. Abbreviations
- II. Basis and Purpose
- III. Background and Regulatory History
- IV. Discussion of Comments and Changes
- V. Discussion of the Rule
- VI. Regulatory Analyses
 - A. Regulatory Planning and Review
 - B. Small Entities
 - C. Assistance for Small Entities
 - D. Collection of Information
 - E. Federalism
 - F. Unfunded Mandates Reform Act
 - G. Taking of Private Property
 - H. Civil Justice Reform
 - I. Protection of Children
 - J. Indian Tribal Governments
 - K. Energy Effects
 - L. Technical Standards
 - M. Environment

I. Abbreviations

ARPA	Automatic Radar Plotting Aids
BLS	Bureau of Labor Statistics
CFR	Code of Federal Regulations
CGAA 2015	Coast Guard Authorization Act of 2015
CGAA 2018	Coast Guard Authorization Act of 2018
DHS	Department of Homeland Security
FR	Federal Register
MERPAC	Merchant Marine Personnel Advisory Committee
MMC	Merchant Mariner Credential
MMLD	Merchant Mariner Licensing and Documentation
NPRM	Notice of proposed rulemaking
OMB	Office of Management and Budget
RA	Regulatory analysis
RFA	Regulatory Flexibility Act
§	Section
STCW	International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended
STCW Code	Seafarers' Training, Certification and Watchkeeping Code
U.S.C.	United States Code

II. Basis and Purpose

This rule amends the radar observer requirements by removing obsolete portions and harmonizing the expiration dates of the radar observer endorsement and the merchant mariner credential (MMC). Title 46 of the United States Code (U.S.C.), Section 7101 authorizes the Coast Guard to determine and establish the experience and professional qualifications required for the issuance of officer credentials. The Secretary of the Department of Homeland Security (DHS) has delegated 46 U.S.C. 7101 authority to the Commandant of the Coast Guard by Department of Homeland Security Delegation No. 0170.1(II)(92)(e). The specifics of these professional qualifications and the Coast Guard's evaluation process are prescribed by Title 46 Code of Federal Regulations (CFR) parts 10 and 11, and the manning requirements are detailed in 46 CFR part 15. Section 304 of the Coast Guard Authorization Act of 2015 (CGAA 2015), Public Law 114-120, February 8, 2016 (codified as a statutory note to 46 U.S.C. 7302), requires the

harmonization of expiration dates of a mariner's radar observer endorsement with the MMC and the medical certificate, subject to certain exceptions.¹ The CGAA 2015 specifies that the process to harmonize cannot require a mariner to renew the MMC before it expires. Section 829 of the Coast Guard Authorization Act of 2018 (CGAA 2018), Public Law 115-282, requires the Coast Guard to issue a final rule eliminating the requirement that a mariner actively using the mariner's credential complete a Coast Guard-approved or accepted refresher or re-certification course to maintain a radar observer endorsement. Section 829 exempts the final rule eliminating the refresher course requirement from 5 U.S.C. chapters 5 and 6, and Executive Orders 12866 and 13563. This rule meets the statutory requirement of Section 304 of the CGAA 2015 with regard to the radar observer endorsement as well as Section 829 of the CGAA 2018 regarding elimination of the refresher course requirement. The CGAA 2015 requirement regarding the medical certificate has already been met through policy.²

III. Background and Regulatory History

Prior to this rule, 46 CFR 11.480 required that a mariner with a radar observer endorsement complete a Coast Guard-approved or accepted radar observer refresher or re-certification course every 5 years to maintain a valid radar observer endorsement on his or her MMC. In the notice of proposed rulemaking (NPRM) [83 FR 26933], we explained the history of that requirement and why, without regulatory change, it was not possible to harmonize the expiration dates of the radar course completion certificate and

¹ Public Law 114-120, sec. 304(c), creates an exception for individuals (1) holding a merchant mariner credential with—(A) an active Standards of Training, Certification, and Watchkeeping endorsement; or (B) Federal first-class pilot endorsement; or (2) who have been issued a time-restricted medical certificate.

² CG-MMC Policy Letter 01-18: Guidelines for Requesting Harmonization of Expiration Dates of Merchant Mariner Credentials and Mariner Medical Certificates when Applying for an Original or Renewal Merchant Mariner Credential. <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/MMC/CG-MMC-2%20Policies/CG-MMC%2001-18%20Harmonization.pdf?ver=2018-03-02-071916-180>.

the MMC.³ The NPRM also explained the recommendations received from the Merchant Marine Personnel Advisory Committee (MERPAC). MERPAC is the federal advisory group representing matters relating to maritime personnel, including training, qualifications, certification, documentation, fitness standards, and other matters. At Meeting 43 in September 2015, MERPAC recommended that the Coast Guard review whether requiring training for radar renewal every five years makes sense or if underway service on a vessel equipped with radar should be considered adequate experience for renewal (MERPAC Recommendation 2015-56).⁴ MERPAC recommended the Coast Guard consider the history of the radar observer endorsement, the current state of radar observer training and prevalence of radar, and the concept that knowledge and skills will degrade with time if not used or refreshed through training. MERPAC also recommended that the Coast Guard consider whether the radar observer endorsement must be on the credential. The Coast Guard considered these recommendations when drafting the NPRM.

In response to Executive Order 13771 of January 30, 2017 (Reducing Regulation and Controlling Regulatory Costs), the Coast Guard asked the public and each of the Coast Guard's federal advisory committees for suggestions on Coast Guard regulations, guidance documents, interpretive documents, and collections of information that should be removed or modified to alleviate unnecessary burdens. The Coast Guard received requests to revise its radar endorsement renewal regulations from both inquiries. In March 2018, MERPAC recommended again that the Coast Guard address radar observer

³ 83 FR 26933, 26934, June 11, 2018.

⁴ Task Statement #91 from MERPAC. (available at <https://homeport.uscg.mil/Lists/Content/DispForm.aspx?&ID=805&Source=https://homeport.uscg.mil/mis-sions/ports-and-waterways/safety-advisory-committees/merpac/task-statements-2>).

endorsement renewal requirements.⁵ Additionally, from the general solicitation to the public, the Coast Guard received three requests for the Coast Guard to address radar observer endorsement renewal requirements.⁶

The Coast Guard has concluded that the current requirement for the completion of a Coast Guard-approved or accepted radar refresher or re-certification course for mariners with relevant and recent service in a position using radar for navigation and collision avoidance purposes, on board vessels equipped with radar, is not necessary. Completion of radar renewal training is unnecessarily burdensome to mariners who serve in a position that routinely uses radar for navigational and collision avoidance purposes. The potential for accidents still exists, and it is important for mariners to be proficient in the use of radar as both a navigation and collision avoidance tool. But, radar carriage requirements, both in the United States and internationally, have increased in the last 60 years, and the current domestic training requirements have been in place for 36 years. As a result, currently, mariners on vessels outfitted with radar maintain proficiency in the use of radar through its constant use to navigate and prevent collisions.

Section 304 of the CGAA 2015 requires the harmonization of expiration dates of a mariner's radar observer endorsement with his or her MMC, and prohibits requiring a mariner to renew a credential before it expires. In this context, the MMC is the primary credential documenting the individual's qualifications to perform specific functions on board a ship, and should be the point of alignment when harmonizing the expiration dates of a mariner's endorsements.

⁵ MERPAC Recommendation #4 to Task Statement #103 (available at <https://homeport.uscg.mil/Lists/Content/DispForm.aspx?ID=13660&Source=/Lists/Content/DispForm.aspx?ID=13660>)

⁶ <https://www.regulations.gov/document?D=USCG-2017-0480-0102> (page 3) and <https://www.regulations.gov/document?D=USCG-2017-0480-0147> (page 11).

In looking at this requirement, the Coast Guard also considered Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs) of January 30, 2017, the Office of Management and Budget (OMB) Guidance of April 5, 2017, on that Executive order, and Executive Order 13777 (Enforcing the Regulatory Reform Agenda) of February 24, 2017. These directives require agencies to review regulations in order to provide a reduction of regulatory costs to members of the public. Elimination of the requirement to take a radar refresher or re-certification course every 5 years will eliminate an unnecessary burden on the active mariner and make harmonization possible.

The NPRM published on June 11, 2018, and the comment period closed on July 11, 2018. In the NPRM, the Coast Guard proposed to remove the radar refresher or re-certification course requirement for an active mariner who serves, for 1 year in the previous 5 years, in a position using radar for navigation and collision avoidance purposes on vessels equipped with radar, or serves as a qualified instructor for a Coast Guard-approved or accepted radar course at least twice within the past 5 years. Radar technology and other equipment associated with radar is still evolving. Radar observer trainees and mariners with limited sea service need current information provided via training to maximize their familiarization with the equipment furnished on board when serving on their first vessel as a radar observer. Mariners with appropriate sea service, including experience using radar, will be exposed to these developments on board. Instructors of Coast Guard-approved or accepted radar courses will be exposed to developments by updating course materials and teaching. These instructors must regularly update course materials in order to ensure that they remain current on

developments and are able to properly lecture and critique their students during simulations.

This final rule adopts the June 11, 2018 NPRM, with the following 5 modifications. First, we have amended the regulatory text in § 10.232(a)(2)(vii) and § 11.480(g) to clarify that a mariner must serve in a position that routinely uses radar for navigation and collision avoidance purposes on vessels equipped with radar. The Coast Guard added the “routine” requirement to the regulatory text to clarify that this rule eliminates the requirement for refresher or re-certification training for those mariners who have keep their radar skills “refreshed” and up to date through the use of radar. Radar skills are not refreshed on board a vessel when not routinely used. The concept of “routine use” was discussed in the preamble to the NRPM, but was not specifically laid out in the regulatory text. Second, as requested by a commenter, we have clarified in § 10.232(a)(6) that the Coast Guard intended to include maritime pilots within the scope of the NPRM. Therefore, for pilots seeking to renew a radar observer endorsement, the pilot association’s letter should indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes. Third, we have clarified regulatory text in § 15.815(d) that allows for mariners to sail without a radar observer endorsement, provided that they hold, and have immediately available, a course completion certificate issued within in the last 5 years from a Coast Guard-approved or accepted radar course. In this final rule we have clarified that this exception is only available for five years after the effective date of the final rule and that the certificate must have been issued within the previous 5 years. Fourth, we have removed the reference to a license as Merchant Mariner Credentials have replaced

licenses. Finally, we clarified in 46 CFR 11.480(g) and (h) that this rulemaking applies to mariners applying for raises of grade or new endorsements under 46 CFR 10.231.

IV. Discussion of Comments and Changes

The Coast Guard received 74 submissions by the public in response to the NPRM published on June 11, 2018. Comments came from maritime training institutions that teach radar observer courses, individual radar course instructors, national and local trade associations—including those for pilots, towing, assistance towing tugs, barges, and passenger vessels—individual mariners, and members of the general public. Commenters expressed a wide range of experiences, including both on oceans and inland rivers. The following discussion contains an analysis of comments received and an explanation of changes made to the rule as proposed in the NPRM. The Coast Guard appreciates all the comments on this matter.

Comments in support of the proposal.

The majority of commenters agreed with the proposed changes. Those agreeing with the NPRM generally stated that the existing required training is a financial burden to active mariners, especially because the required training focuses on the use of techniques that are not suitable for modern ships and radar equipment.

Comments opposed to the proposal, anticipating increase in accident rate and company liabilities.

Several commenters felt that this rule would increase accident rates, with some citing the possibility of increased liability and a change of the apportionment of damages in the event of a casualty. The Coast Guard disagrees. The amended regulations will not change the current level of safety. Sections 15.405 (Familiarity with Vessel

Characteristics) and 15.1105 (Familiarization and Basic Training (BT)) of 46 CFR remain unchanged. These regulations require that, before assuming their duties, credentialed mariners become familiar with their duties and the equipment that they will be using. The company's responsibility in the event of a casualty remains the same. And, radar observer training continues to be required for mariners without recent experience either using radar or instructing others in its use.

Concerns about possible skill loss.

Some commenters were concerned that changing the radar refresher or re-certification training requirements will result in the loss of radar skills. The Coast Guard disagrees. Although mariners serving on vessels equipped with modern radars and automatic radar plotting aids (ARPA) may not be performing transfer plotting of all radar contacts, they are using their knowledge, experience, and skill in vector analysis and the true and relative motion concepts learned in radar observer training to make their own assessment of collision risk and to verify the target data determined by the radar or ARPA. This consistent use of true and relative motion concepts and vector analysis is sufficient for mariners to retain proficiency. Additionally, 46 CFR 15.405 and 15.1105 address familiarization regarding the proper operation of the radar equipment for mariners on board ships. Therefore, the Coast Guard does not believe that this will have any negative impact on safety.

Skill retention through recent experience.

One commenter disagreed that 1 year of sea service in the last 5 years is adequate, by itself, to demonstrate relevant knowledge and recency in radar and felt that the Coast Guard should still require a refresher or recertification course. This commenter also disagreed with the Coast Guard's comparison to the 1:5 standard for Basic Training in the development of the standard for radar. The commenter felt that the comparison to the Basic Training standard was inadequate because there are no monthly drill requirements to reinforce skills taught in a radar course as monthly fire and abandon ship drills do for Basic Training skills. The Coast Guard disagrees. A radar operator retains proficiency in the skills learned in the mariner's original radar endorsement training through shipboard experience using radar during navigational watchkeeping. Monthly drills are not required to retain this proficiency when radar is being regularly used by a mariner. The Coast Guard has historically accepted that a stated minimum amount of relevant sea service meets the renewal requirements for each specific MMC endorsement. In general, refresher training is only required of those mariners who do not meet the renewal sea service requirements. Radar has been the only exception to this policy. The requirement for a radar refresher or recertification course is a holdover from when radar was not prevalent and training was not universally required. That is no longer the case. The use of radar is now so prevalent and automated that it is equivalent to the skills for other MMC endorsements with regard to skill retention. Therefore, the Coast Guard has retained the sea service requirements as proposed in the NPRM.

Rivers and inland waters vs. ocean radar use.

Some commenters noted that mariners on rivers and inland waters do not use radar for collision avoidance in the same way as mariners on oceans. These commenters said that the re-certification or refresher courses covering open-water relative motion concepts is not relevant to a river environment. These commenters agreed that mariners who work on rivers and confined inland waters do not retain relative motion concepts, but disagreed on how this issue should be addressed. One commenter asserted that the traditional “unlimited” re-certification course covering open-water relative motion concepts should be retained, while another felt that because mariners do not use these concepts on rivers, they do not need to be refreshed by training. A third commenter felt that refresher or re-certification training on open-water concepts is not appropriate for inland and rivers mariners, but that refresher or re-certification training tailored to rivers operations should be required. The Coast Guard acknowledges that mariners on rivers and confined inland waters use radar differently than mariners on oceans, but disagrees that mariners who serve in positions that routinely use radar need recurrent training. Regardless of the type of waterway, active mariners with 1 year of service in the previous 5 years in a position that routinely uses radar will retain proficiency for the waters upon which they operate.

Suggested alternative radar observer refresher or re-certification requirements.

Some commenters suggested that the Coast Guard revise current radar observer refresher or re-certification course requirements to provide mariners with information that updates their knowledge and skills with the latest radar-associated equipment, such as radar equipment features, Automatic Identification Systems, ARPA, and Electronic Chart

Display and Information Systems. The Coast Guard is reviewing these comments and may take separate action in the future on this matter, if it is warranted after a complete analysis. This rule, however, addresses the requirement to take the course rather than the content of the course.

The Coast Guard also noticed that many commenters, both agreeing and disagreeing with the proposed rule change, believed that the current value of the radar refresher or re-certification courses lay in the provision of updates to the mariner about new developments in radar technology. The Coast Guard will consider whether and how this information should be distributed, and may ask MERPAC to consider the matter in the future.

Suggested removal of all radar observer renewal requirements.

Some commenters requested that the Coast Guard remove the radar observer renewal requirement for all mariners, even those with less than 1 year of sea service in a position that routinely uses radar within the last 5 years. The Coast Guard disagrees. A mariner who has not used radar as part of his or her navigational watchkeeping for 1 year within the last 5 years will lose proficiency; as discussed in the NPRM, studies have shown that skills deteriorate over time when not performed. This rule retains the current refresher or re-certification requirements for those mariners.

Clarifying that maritime pilots are included within the proposed rule.

Several commenters requested clarification about whether the Coast Guard had intended to include maritime pilots within the proposed rule. The Coast Guard intended to include maritime pilots within the proposed rule and has amended § 10.232(a)(6) to provide that clarification.

Limiting the rule to only credentialed masters and mates.

One commenter recommended that the removal of the radar observer requirement should be limited to masters and mates. The commenter felt it would be hard for a company to verify that a particular mariner used radar for collision avoidance purposes. The Coast Guard partially agrees with the commenter's concern. The Coast Guard has amended the regulatory text to state that the radar observer position on board ships must routinely use radar for navigation and collision avoidance purposes, but the Coast Guard did not restrict the affected positions to masters and mates as suggested. The Coast Guard recognizes that there are positions on board vessels, other than mate or master that routinely use radar and are required to hold additional radar endorsements.

Suggested removal of the radar observer requirement for mariners working on board assistance towing vessels equipped with radar.

A commenter suggested that mariners within the assistance towing industry be exempted from the requirement to hold a radar endorsement if they are working on board assistance towing vessels equipped with radar, because the assistance towing industry is exempt from the radar carriage requirement. This comment is outside the scope of this rulemaking. While we appreciate this commenter's concerns and request, this rulemaking is limited to the renewal requirements of existing radar observer endorsements.

Drug testing requirements.

A commenter asked for a change to drug testing requirements, citing that the requirements for periodic drug testing were changed in a previous rulemaking and resulted in an increased number of periodic drug tests. While we appreciate this

commenter's concerns and request, this rulemaking is limited to the renewal requirements of existing radar observer endorsements. We have shared this comment with the appropriate Coast Guard office.

Suggestions for radar direct scope plotting capabilities and returning Loran-C to operation.

A commenter suggested that marine electronics manufacturers provide a direct scope plotting capability to their radar and ARPA products in order to receive type approval. This commenter also suggested the reinstatement of Loran-C as a backup to GPS. These systems were either discontinued or the equipment specifications were adapted nationally and internationally to the current requirements many years ago. While we appreciate this commenter's concerns and request, this rulemaking is limited to the renewal requirements of existing radar observer endorsements.

Suggestions for documenting sea service.

A commenter suggested that the Coast Guard develop a radar sea service letter template to provide the affected public with a sample document depicting the information needed for the mariner's use of the alternative provided by this rulemaking. The Coast Guard has declined to do so at this time. The Coast Guard does not believe that a unique sea service letter is needed beyond the documentation requirements of 46 CFR 10.232 for those mariners in positions that routinely use radar for navigation and collision avoidance purposes. The Coast Guard is amending 46 CFR 10.232 to include information on whether the vessel is equipped with radar and if the mariner served in a position that routinely uses radar for navigation and collision avoidance purposes. The information provided on sea service documents meeting the requirements of 46 CFR 10.232 should

provide sufficient documentation. If the need develops for a radar sea service letter after the implementation of this rule, the Coast Guard will then consider developing a template.

One commenter asked that the Coast Guard “clarify that ‘1 year of sea service within the last 5 years’ does not mean one year of consecutive service, but instead requires the mariner to demonstrate a total of at least 365 days of relevant service over the five-year period.” Generally, the Coast Guard defines 1 year, for the purpose of complying with the service requirements of 46 subchapter B, as 360 days when a person is assigned to work. In order to use sea service in lieu of the required radar refresher or re-certification courses, a mariner must provide documentary evidence of 360 days of aggregate service in the previous 5 years in a position that routinely uses radar for navigation and collision avoidance. The Coast Guard notes that 46 CFR 10.107 provides definitions for service, year, and day. Mariners should consult this regulation to determine the specific sea service credit to which each mariner is entitled.

A national pilot’s association requested that, if the rule covers pilots, that the Coast Guard allow pilots to submit a letter from a pilot’s association attesting to the applicant’s sea service. The association provided draft language to be inserted into the Coast Guard’s proposed revised language for § 10.232(a)(6). As discussed above, the Coast Guard intended to include pilots in this rule. The language provided by the association has been adopted into this final rule in an amended § 10.232(a)(6). Pilots seeking to renew a radar observer endorsement can submit a letter from a pilot’s association attesting to the applicant’s sea service. The association's letter should

indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes.

Online renewal training.

Some commenters suggested that the Coast Guard should allow online renewal training. Although the Coast Guard may approve certain training to be offered online, we do not believe it is feasible for radar observer re-certification courses. As radar observer re-certification courses are typically 1 day in duration and consist almost exclusively of graded examinations and practical exercises, the course is not well-suited for online delivery. However, online training is possible for portions of an original radar observer course, or a multi-day refresher course. Guidance on the Coast Guard's policy concerning online training is found in Enclosure (5) of Navigation and Vessel Inspection Circular 3-14.⁷

V. Discussion of the Rule

In this rule, the Coast Guard is revising its regulations to eliminate the requirement that a mariner actively using the mariner's credential complete an approved or accepted refresher or re-certification course to maintain a radar observer endorsement. A mariner who serves in a relevant position on board a radar-equipped vessel for 1 year in the previous 5 years will no longer be required to complete a Coast Guard-approved or accepted radar refresher or re-certification course per 46 CFR 11.480 to renew his or her radar observer endorsement. The new requirement for 1 year of sea service within the past 5 years is consistent with similar existing sea service requirements found in, for example, 46 CFR 10.227(e)(1) (Requirements for Renewal); 46 CFR 11.302(c) (Basic

⁷ Available at https://www.dco.uscg.mil/Portals/9/NMC/pdfs/announcements/2014/nvic-03-14_Course_Approval_Final_with_encls_20140122.pdf.

Training); and 46 CFR 11.303(c) (Advanced Firefighting). For the purposes of this rule, relevant sea service means having served in a position that routinely uses radar for navigation and collision avoidance purposes on a radar-equipped vessel.

Additionally, mariners who provide evidence of being a qualified instructor and having taught a Coast Guard-approved or accepted radar course at least twice within the past 5 years will not be required to complete a radar refresher or re-certification course. The 5-year interval is based on both national and the International Convention on the Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended (STCW) endorsement requirements that follow recognized principles and standards of maritime skill acquisition and retention. The provision to allow renewal of the endorsement by an instructor of the radar course is consistent with the provision in 46 CFR 10.227(e)(1)(v) applicable to MMC renewals. This provision would be applied to the radar observer endorsement.

This rule eliminates the requirement to carry a certificate of training if the radar observer endorsement is on the MMC, and allows the endorsement and MMC to expire at the same time.

The Coast Guard did consider removing the radar refresher or re-certification course requirement altogether. However, the Coast Guard believes that the competencies required by a radar observer would degrade if the mariner does not use them on board vessels or periodically refresh them by teaching or completing a course. The concept that knowledge and skills will degrade with time if not used or refreshed has been applied in other areas of maritime training, such as the STCW requirements for basic training course every 5 years, and is a recognized factor within the education industry. While there are

few specific studies in skill degradation in the maritime industry, this issue has been the subject of discussion for decades in other industries, including the aviation industry.⁸

Also, radar continues to be incorporated into other shipboard systems and continues to change with advancements in technology. The radar observer must keep current with these changes through onboard utilization of skills or a formal course of instruction. As a result, the Coast Guard did not pursue removing radar renewal training altogether.

In summary, the Coast Guard will continue to require attendance at a radar refresher or re-certification course for mariners seeking to renew a radar observer endorsement on the basis of sea service if they do not have 1 year of relevant sea service in the previous 5 years in a position that routinely uses radar for navigation and collision avoidance purposes, on vessels equipped with radar. As discussed earlier, mariners with radar observer endorsements who do have 1 year of relevant sea service within the previous 5 years and have served in a position that routinely uses radar for navigation and

⁸ Michael W. Gillen, *Degradation of Piloting Skills* (Master's Thesis), University of North Dakota, Grand Forks (2008), assesses professional aircraft pilots' basic instrument skills in the age of highly automated cockpits. In addition to the specific findings related to the aircraft pilots, the document contains a literature review of applicable background studies concerning the general theory of learning related to skill acquisition, retention, and declination. The referenced literature includes a discussion of the inverse nature of practice and completion time. Previous studies showed that the time required to perform a task declined at a decreasing rate as experience with the task increased. Results from some of these previous studies indicated a rapid rate of learning depreciation.

Arthur Winfred, Jr., Bennett Winston, Jr., Pamela L. Stanush, and Theresa L. McNelly, "Factors That Influence Skill Decay and Retention: A Quantitative Review and Analysis," 11(1) *Human Performance* 57 (1998), presents a review of skill retention and skill decay literature about factors that influence the loss of trained skills or knowledge over extended periods of non-use. Results indicated that there is substantial skill loss after more than 365 days of non-use or non-practice. Physical, natural, and speed-based tasks—such as checklist and repetitive tasks—were less susceptible to skill loss than decision-making tasks that are cognitive, artificial, and accuracy-based. Collision avoidance and navigation using radar can be considered examples of the latter category.

John M. O'Hara, "The Retention of Skills Acquired Through Simulator-based Training," 33(9) *Ergonomics* 1143 (1990), examines the loss of skills among two groups of merchant marine cadets that were tested for watchstanding skills immediately preceding and following a 9-month simulator-based training program. The mitigation of decay as a function of a retraining experience was also evaluated. The results indicated that watchstanding skills improved following training and declined over the 9-month retention interval, and that refresher training was effective in terms of skill loss mitigation for some skill areas.

collision avoidance purposes, on board a radar-equipped vessel, or who have met certain instructor requirements, will be able to renew the radar observer endorsement without completing a course. In addition, the radar observer endorsement will expire with the MMC, and the mariner with a radar observer endorsement will no longer be required to present a course completion certificate within 48 hours of the demand to do so by an authorized official.

Following is a section-by-section discussion of the changes.

46 CFR 11.480 Radar Observer.

This rule revises 46 CFR 11.480(d), (e), (f), (g), and (h). A current course completion certificate from a Coast Guard-approved or accepted radar refresher or re-certification course in accordance with 46 CFR 11.480 will no longer be the only determinant of a mariner's continued competency as a radar observer.

This rule revises 46 CFR 11.480 to apply the provisions of 46 CFR 10.227(e)(1)(v) to the radar observer endorsement. A qualified instructor who has taught a Coast Guard-approved or accepted radar observer course at least twice within the past 5 years will not be required to complete a refresher or re-certification course, because he or she will have met the standards to receive a course completion certificate. The course approval process, in accordance with 46 CFR subpart D, evaluates instructors to determine whether they are qualified to teach the course.

Mariners will be allowed to use recent sea service in place of completing a radar refresher or re-certification course. Mariners able to provide evidence of 1 year of relevant sea service within the last 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on vessels equipped with radar will not be

required to attend a refresher or recertification course. This also applies to mariners applying for raises of grade or new endorsements under 46 CFR 10.231. As a result, 46 CFR 11.480(g) and (h) were amended.

Prior to this rule, 46 CFR 11.480(h) allowed an applicant seeking a raise of grade or increase in scope of an MMC endorsement, where the increased grade or scope required a radar observer certificate, to use an expired certificate to fulfill that requirement. However, a radar endorsement was not placed on the credential. This provision was put in place because, prior to this rule, expirations of MMCs and radar certificates rarely expired on or near the same date. We are revising 46 CFR 11.480(h) to align the MMC with the radar endorsement and ensure evidence of competence in the use of the radar through experience or completion of the course. Consequently, applicants for a raise of grade or increase in scope that requires radar but do not currently have radar endorsed on their MMC, will be required to renew the radar endorsement. A radar endorsement on the MMC will be considered acceptable evidence of current radar experience or knowledge for purposes of a raise of grade or increase in scope where that increase requires radar training.

To renew a radar endorsement the applicant must provide the following information: (1) evidence of 1 year of sea service within the last 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on board radar-equipped vessels; or (2) evidence of having been a qualified instructor who has taught a Coast Guard-approved or accepted radar observer course at least twice within the past 5 years; or (3) successful completion of a Coast Guard-approved or accepted radar course within the past 5 years. If the applicant does not provide evidence of meeting the

requirements for the radar observer endorsement, the endorsement will not be granted.

46 CFR 15.815 Radar Observers.

This rule revises 46 CFR 15.815 to eliminate the requirement that a person required to hold a radar endorsement must have his or her course completion certificate readily available. Having the course completion certificate available is no longer necessary, because the expiration date of the MMC and the radar endorsement coincide, making the radar observer endorsement in the MMC prima facie evidence that its holder meets the radar training standards. That was not the case previously. The Coast Guard recognizes the need for a transition period. Therefore, we are modifying the language in § 15.815(d) and removing paragraph (e) related to carrying and producing the radar course completion certificate. If a mariner qualifies for a radar endorsement after their MMC is issued, they can apply for a radar endorsement to be added to their MMC. This provision will expire on July 22, 2024. After that date, mariners may serve on board a vessel in a position that uses radar if they have a radar observer endorsement on their MMC. While the NPRM proposed revising § 15.815(d) to allow the mariners listed in § 15.815(a), (b), and (c) to sail without a radar observer endorsement, provided that they hold, and have immediately available, a course completion certificate issued within the last 5 years from a Coast Guard-approved or accepted radar course, the proposed text lacked clarity and a termination date. This final rule modifies the revision of § 15.815(d) to retain the intended flexibility for mariners who were not qualified for the radar observer endorsement at their last credential application, but have subsequently completed a Coast Guard-approved or accepted radar course and hold a course completion certificate. Section 304 of Public Law 114-120, CGAA 2015, directed the

Coast Guard to harmonize MMC, medical certificate, and radar observer expiration dates. It further directed the Coast Guard to establish a process that would not require mariners to renew their MMCs early. Consistent with the Congressional intent in section 304(b)(1) that mariners not be required to incur unnecessary application fees, the Coast Guard is providing this flexibility to ensure that mariners with valid radar observer course completion certificates do not have to apply to add the radar endorsement to their MMCs before their next MMC renewal.

46 CFR 10.232 Sea Service.

Finally, the Coast Guard is adding corresponding requirements to § 10.232(a) so that the sea service letter indicates whether the vessel the mariner has served on is equipped with radar, and that the mariner served in a position that routinely uses radar for navigation and collision avoidance purposes. While certain vessels are required to be equipped with radar, some vessels are not required to do so, such as offshore supply vessels of less than 100 gross tons and mechanically propelled vessels of less than 1,600 gross tons in ocean or coastwise service. Although these vessels are not required to be equipped with radar, some of them are equipped with radars. This rule ensures that mariners serving in a position that routinely uses radar for navigation and collision avoidance purposes, on vessels equipped with radar, will get credit towards renewal of the radar observer endorsement, regardless of whether the vessel was required to carry radar.

In addition, the Coast Guard did not propose specific regulatory text on radar observer endorsement requirements for maritime pilots seeking to renew a radar observer endorsement. In response to several public comments asking about pilots, the Coast

Guard is amending § 10.232(a)(6) to clarify that, for pilots seeking to renew a radar observer endorsement, their association's letter should indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes.

VI. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on these statutes or Executive orders.

A. Regulatory Planning and Review

Executive Orders 12866 (Regulatory Planning and Review) and 13563 (Improving Regulation and Regulatory Review) direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs) directs agencies to reduce regulation and control regulatory costs and provides that “for every one new regulation issued, at least two prior regulations be identified for elimination, and that the cost of planned regulations be prudently managed and controlled through a budgeting process.”

The Office of Management and Budget (OMB) has not designated this rule a “significant regulatory action,” under section 3(f) of Executive Order 12866.

Accordingly, OMB has not reviewed it. DHS considers this rule to be an Executive Order 13771 deregulatory action. See OMB’s Memorandum “Guidance Implementing Executive Order 13771, Titled ‘Reducing Regulation and Controlling Regulatory Costs’” (April 5, 2017). Details on the estimated cost savings of this rule can be found in the rule’s regulatory analysis (RA) that follows.

Table 1 summarizes the changes to the regulatory text from the NPRM to this final rule. In this final rule, the Coast Guard incorporated “routinely” into §§ 10.232(a)(2)(vii) and 11.480(g), and “For those pilots seeking to renew a radar observer endorsement, the association’s letter should indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes” in § 10.232(a)(6). These revisions to the regulatory text proposed in the NPRM were only for clarification purposes; thus, the numerical assessment and conclusions from the RA included in the NPRM (83 FR 26933, June 11, 2018) remain unchanged.

Table 1: Summary of Changes from NPRM to Final Rule

Regulatory Text	NPRM	Final Rule	Resulting Impact on RA
§ 10.232(a)(2)(vii)	Mariner served in a position using radar.	Mariner served in a position that routinely uses radar.	No impact; edits made for clarification purposes.
§ 10.232(a)(6)	An applicant who has been acting as a pilot may submit a letter from a pilot’s association attesting to the applicant’s sea service. Pilots not part of an association may	An applicant who has been acting as a pilot may submit a letter from a pilot’s association attesting to the applicant’s sea service. For those pilots seeking to renew a radar observer	No impact; edits made for consistency with 46 CFR 10.232(a)(2)(vii).

	submit other relevant records indicating service, such as billing forms. For a raise-of-grade, pilots must comply with the requirements of paragraph (a)(2) of this section.	endorsement, the association's letter should indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes. Pilots not part of an association may submit other relevant records indicating service, such as billing forms. For a raise-of-grade, pilots must comply with the requirements of paragraph (a)(2) of this section.	
§ 11.480(g)	1 year of relevant sea service within the last 5 years in a position using radar.	1 year of relevant sea service within the last 5 years in a position that routinely uses radar.	No impact; edits made for clarification purposes.
§ 11.480(h)	An applicant for renewal of a license or MMC who does not provide evidence of meeting the renewal requirements of paragraphs (d), (f), or (g) of this section will not have a radar observer endorsement placed on his or her MMC	An applicant for renewal of a MMC who does not provide evidence of meeting the renewal requirements of paragraphs (d), (f), or (g) of this section will not have a radar observer endorsement placed on his or her MMC	No impact; edit made for accuracy
§ 15.815(d)	In the event that a person described in paragraphs (a), (b),	Until July 22, 2024, a person may satisfy the requirements in	No impact; edits made for standardization

	<p>or (c) of this section does not hold an endorsement as radar observer, he or she must have immediately available a valid course completion certificate from a Coast Guard-approved radar course</p>	<p>paragraphs (a), (b), or (c) by having immediately available a valid course completion certificate from an appropriate Coast Guard-approved or accepted radar course that was issued within the previous 5 years</p>	
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This RA provides an evaluation of the economic impacts associated with this rule. The Coast Guard is revising its regulations so that a mariner who served on board a radar-equipped vessel for 1 year in the previous 5 years, in a position that routinely uses radar for navigation and collision avoidance purposes, is not required to complete a Coast Guard-approved or accepted radar refresher or re-certification course to renew their radar observer endorsement, as discussed in section V of this rule. Additionally, mariners who provide evidence of being a qualified instructor and having taught a Coast Guard-approved or accepted radar observer course at least twice within the past 5 years will not be required to complete a radar refresher or re-certification course. Table 2 provides a summary of the affected population, costs, and cost savings after implementation of this rule. The total 10-year discounted cost savings of the rule will be \$47,678,762 and the annualized total cost savings will be \$6,788,383, both discounted at 7 percent. We expect that an average of 7,037 mariners will benefit from this rule each year. This rule will result in cost savings to these mariners for no longer incurring the costs to complete the radar observer refresher or re-certification course. There will be no impact to those mariners seeking an original radar observer endorsement or who do not have 1 year of

relevant sea service in a position that routinely uses radar for navigation and collision avoidance purposes, on board radar-equipped vessels in the previous 5 years. This rule will not impose costs on industry.

Table 2: Summary of the Impacts of the Final Rule

Change	Description	Affected Population	Costs	Cost Savings
Revise 46 CFR 11.480 (d), (e), (f), (g), and (h)	Revise the merchant mariner credentialing regulations to allow mariners who are qualified instructors and mariners who have served 1 year of sea service in the previous 5 in a position that routinely uses radar for navigation and collision avoidance purposes on radar-equipped vessels to retain their radar observer endorsement without being required to take a radar renewal or re-certification course.	Total of 35,183 mariners will no longer be required to take radar refresher or re-certification course. Annual average of 7,037 mariners per year benefit from rule (rounded).	No cost.	\$6,788,383 annualized and \$47,678,762 10-year present value monetized industry benefits (cost savings) (7% discount rate).
Revise 46 CFR 15.815	Remove requirement that a person with a radar observer endorsement must have a certificate of training readily available.	35,183 mariners.	No cost.	No cost savings.
Revise 46 CFR 10.232(a)(2)	Add requirement that sea service letters include the information that the vessel the mariner has served on is radar equipped and the mariner served in a position that routinely uses radar for navigation and collision avoidance purposes.	35,183 mariners.	No quantifiable cost. Cost to add one line item to company's regular update to the service letter is too small to quantify.	No cost savings.

The revisions to 46 CFR 11.480 will result in cost savings to those mariners who will no longer have to complete the radar observer refresher or re-certification course.

The revisions to 46 CFR 15.815 will eliminate the requirement that a person holding a radar endorsement must also have his or her course completion certificate

readily available. While the mariner will no longer physically have to carry the certificate, he or she will still have to physically carry an MMC that reflects a radar observer endorsement. The costs of obtaining the copy of the certificate are included in the cost of the completion of the course. Therefore, any cost savings from these revisions are included in the calculations of the cost savings to the revisions to 46 CFR 11.480. Those mariners who do not have an MMC that reflects a radar observer endorsement will be allowed to sail if they hold, and have immediately available, a course completion certificate, issued within the last 5 years, from a Coast Guard-approved or accepted radar course. There is no impact to these mariners, as they currently have to carry a certificate to show course completion. This exemption is only available for 5 years after the effective date of this rule.

The revisions to 46 CFR 10.232 will add a requirement that the sea service letter for those seeking to renew a radar observer endorsement indicate whether the mariner served on a vessel equipped with radar, and if the mariner served in a position that routinely used radar for navigation and collision avoidance purposes. The operating companies that use service letters are already required to provide mariner service information. These companies will have to add a line item once per vessel, and then the line item will be available for all mariners serving on that radar-equipped vessel, if they are serving in a position that routinely uses radar for navigation and collision avoidance purposes. The companies generally produce a service letter once every 5 years to provide the employees the documentation necessary to renew their credentials. We expect the additional line will be included in the company's regular updates to service letters.

Affected Population

We expect that this rule will affect mariners with a radar observer endorsement and mariners who will need one in the future. More specifically, it will affect those mariners with at least 1 year of sea service in the previous 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on board a radar-equipped vessel, as they will no longer be required to complete a Coast Guard-approved or accepted radar refresher or re-certification course, per 46 CFR 11.480, in order to renew their radar observer endorsement. It will also affect mariners who have taught a Coast Guard-approved or accepted radar course at least twice within the past 5 years, the majority of whom hold a valid endorsement and will be included in the affected population. The radar observer endorsement will expire with the MMC, and the mariner will no longer be required to carry the course completion certificate.

We used data from the Coast Guard’s Merchant Mariner Licensing and Documentation (MMLD) system to estimate the average number of mariners affected by this rule. The MMLD system is used to produce MMCs at the National Maritime Center. Table 3 below shows the radar endorsement data from the MMLD system used to estimate the affected population. The MMLD system does not have exam data prior to 2011 for the mariners who took the rules of the road exam to renew an MMC.

Table 3: Mariners holding Radar Observer Endorsements

Year	Mariners who hold a radar observer endorsement (current total population)	Mariners who took rules of the road exam to renew MMC	Mariners who benefit from rule
2011	37,612	488	37,124
2012	38,114	572	37,542
2013	37,011	638	36,373
2014	35,262	671	34,591
2015	34,280	716	33,564

2016	34,546	777	33,769
2017	34,076	755	33,321
Average total mariners	35,843	660	35,183
Impacted per year	7,169	132	7,037

The “Mariners Who Hold a Radar Observer Endorsement” column shows the number of unique mariners who, on January 1 of each year, held a valid MMC with a radar observer endorsement. Per § 11.480, each applicant for a renewal of a radar observer endorsement must complete the appropriate Coast Guard-approved or accepted refresher or re-certification course, receive the appropriate course completion certificate, and present the certificate or a copy of the certificate to the Coast Guard. A radar observer endorsement is valid for 5 years from the date of completion of the Coast Guard-approved or accepted course. From 2011 to 2017, an average of 35,843 total mariners held a valid MMC with a radar observer endorsement. The Coast Guard does not have more detailed information as to the expiration for each mariner’s radar observer endorsement. Therefore, we divided the total number of mariners by 5 to estimate that an average of 7,169 mariners will need to take the radar refresher or re-certification course each year (35,843 total number of mariners ÷ 5, rounded to nearest whole number).

Under this rule, the Coast Guard expects that a portion of this total will not have 1 year of sea service in the last 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on board radar-equipped vessels. Some mariners are inactive, but still complete the requirements to renew an MMC. The requirements for the renewal of an MMC are in § 10.227. In order to renew their credentials, mariners must present acceptable documentary evidence of at least 1 year of sea service during the past 5 years, or pass a comprehensive, open-book exercise that includes a rules of the road

examination. The MMLD database tracks mariners who take the rules of the road exam. The “Mariners Who Took Rules of the Road Exam to Renew MMC” column in table 3 shows the number of the unique mariners in the “Mariners Who Hold a Radar Observer Endorsement (Current Total Population)” column who took the rules of the road examination as part of the MMC renewal process for their existing valid MMCs, not the number of mariners who took the rules of the road exam in that given year. Therefore, we used this as a proxy to estimate the number of mariners who did not have 1 year of sea service in the last 5 years. Under this rule, an average of 660 total mariners will still have to take a Coast Guard-approved or accepted radar refresher or re-certification course in order to maintain the radar observer endorsement. The Coast Guard does not have more detailed information as to when each mariner took the radar refresher or re-certification course over the 5-year period. We divided the total number of mariners by 5 to find an average of 132 mariners will still need to take the exam each year (660 total number of mariners \div 5).

We subtracted the number in the “Mariners Who Took Rules of the Road Exam to Renew MMC” column from the number in the “Mariners Who Hold a Radar Observer Endorsement” column to find the mariners who, under this rule, will not have had to take a radar refresher or re-certification course when they last renewed their MMC. From 2011 to 2017, an average of 35,183 mariners held radar observer endorsements and had at least 1 year of relevant sea service during the past 5 years. This number represents the total number of mariners expected to benefit from this rule. We divided the total number of mariners expected to benefit from this rule by 5 to find the average number of mariners who will benefit each year (35,183 total number of mariners \div 5). This totals to an

average of 7,037 (rounded to nearest whole number) mariners per year who will no longer have to take a Coast Guard-approved or accepted radar refresher or re-certification course.

Costs

The regulatory changes in this rule will not impose any costs to industry or government, because of its deregulatory nature.

Cost Savings

The cost savings to industry equal the difference between the current baseline cost to industry and the remaining cost to industry when the regulatory changes in this rule are implemented.

Baseline Cost to Industry

Mariners incur costs for the radar refresher or re-certification course. To estimate the cost savings to industry, we first estimated the current costs to industry. These include the cost of the refresher or re-certification course, the time to take the course, and time and mileage costs to travel to take the course. To estimate the cost of the course, the Coast Guard researched and found a sample of course costs from five training centers that offer Coast Guard-approved or accepted radar refresher or re-certification courses. The cost of the courses ranged from \$199 to \$250. We took an average of the 5 estimates to find the average cost of the courses is \$228 $((\$199 + \$250 + \$225 + \$225 + \$243) \div 5$, rounded to nearest dollar).^{9 10 11 12 13}

⁹ Maritime Professional Training, course cost of \$199, found at <http://www.mptusa.com/course/149-Radar-Observer-Recertification-Renewal>.

¹⁰ Compass Courses, course cost of \$250, found at <https://compasscourses.com/maritime-safety-training-courses/radar-re-certification/>.

¹¹ The Marine Training Institute, course cost of \$225, found at <http://themarinetraidinginstitute.com/ecdis-radar-recertification/>.

We then estimated the cost of the time for the mariners to take the renewal course. The 5 training centers state that the radar refresher or re-certification course is 1-day. For the purposes of complying with service requirements, we defined a day as 8 hours (46 CFR 10.107, Definitions in subchapter B).¹⁴ We obtained the wage rate of a mariner from the Bureau of Labor Statistics (BLS), using Occupational Series 53-5021, Captains, Mates, and Pilots of Water Vessels (May 2016). The BLS reports that the mean hourly wage rate for a Captain, Mate, or Pilot is \$39.19.¹⁵ To account for employee benefits, we used a load factor of 1.52, which we calculated from 2016 4th quarter BLS data.¹⁶ The loaded wage for a mariner is estimated at \$59.57 (\$39.19 wage rate × 1.52 load factor). We multiplied the loaded wage rate by the hourly burden to find the current cost for a mariner to take the radar refresher or re-certification course is \$476.56 (\$59.57 wage rate × 8-hour burden).

The Coast Guard then estimated the cost for the mariners to travel to take the refresher or re-certification course. The radar refresher or re-certification course must be taken in person at a training center. This means the mariners incur costs for time to travel to take the course. We estimated mileage using travel costs assumptions from the ‘Implementation of the 1995 Amendments to the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, 1978, and Changes to

¹² Calhoun MEBA Engineering School, course cost of \$225, per correspondence with school representative, found at <http://www.mebaschool.org/>

¹³ Maritime Institute of Technology & Graduate Studies, course cost of \$243, found at https://www.mitags-pmi.org/courses/view/Radar_Observer_Recertification.

¹⁴ 46 CFR 10.107, https://ecfr.io/Title-46/pt46.1.10#se46.1.10_1107.

¹⁵ Mean wage, <https://www.bls.gov/oes/2016/may/oes535021.htm>.

¹⁶ Employer Costs for Employee Compensation provides information on the employer compensation and can be found in table 9 at https://www.bls.gov/news.release/archives/ecec_03172017.pdf. The loaded wage factor is equal to the total compensation of \$28.15 divided by the wages and salary of \$18.53. Values for the total compensation, wages, and salary are for all private industry workers in the transportation and material moving occupations, 2016 4th quarter. We use 2016 data to keep estimated cost savings in 2016 dollars.

National Endorsements” final rule.¹⁷ On average, a mariner commutes 50 miles to a training course one-way, or 100 miles round trip. The Federal Highway Administration reports the average commute speed for private vehicles is 28.87 miles per hour.¹⁸ We divided the average round trip mileage to the training center by the average commute time to find that it takes an average of 3.46 hours for a mariner to travel to and from the training center (100 miles ÷ 28.87 miles per hour, rounded). We multiplied this by the loaded hourly wage rate to find that the hourly burden per mariner to travel to the training center to take the refresher or re-certification course is \$206.11 (3.46 hours × \$59.57).

The mariners also incur additional mileage costs for traveling to the training facility to take the 1-day course, such as gas and wear and tear on their vehicles. We used the U.S. General Services Administration privately owned vehicle mileage reimbursement rate of \$0.54 per mile to estimate this additional cost.¹⁹ We multiplied this rate by the 100 miles round trip to the training facility to estimate that the mariners incur a cost of \$54 per mariner for the additional mileage costs.

Table 4 summarizes the costs per mariner to take the radar refresher or re-certification course. Adding the cost of the 1-day course, the opportunity cost of time to take the course, and the opportunity cost of roundtrip travel time and mileage costs to get to the training center, we found that it costs \$964.67 per mariner to take the radar refresher or re-certification course.

¹⁷ Found at <https://www.regulations.gov/docket?D=USCG-2004-17914>. Non-commuting driving time estimate found on page 132 of the Regulatory Analysis and Final Regulatory Flexibility Analysis, located under Supporting Documents.

¹⁸ “Summary of Travel Trends: 2009 National Household Travel Survey”, table 27, found at <http://nhts.orl.gov/2009/pub/stt.pdf>.

¹⁹ Found at <https://www.gsa.gov/travel/plan-book/transportation-airfare-rates-pov-rates-etc/privately-owned-vehicle-pov-rates-pov-mileage-rates-archived>. We use the 2016 rate to keep all costs in 2016 dollars.

Table 4: Costs per Mariner for Radar Refresher or Re-certification Course

Cost Category	Cost
1-Day Course	\$228.00
Opportunity Cost of Time (8 hours) Spent in Training Facility	\$476.56
Opportunity Cost of Roundtrip Travel Time to Training Center	\$206.11
Mileage Costs	\$54.00
<i>Total</i>	<i>\$964.67</i>

To find the baseline total cost for all mariners to take the radar refresher or re-certification course, we multiplied the total cost per mariner of \$964.67 by the annual average number of mariners who currently hold radar observer endorsements. As shown in table 3, we found this to be an annual average of 7,169 mariners. Therefore, the total baseline annual average cost for all mariners is \$6,915,719 (7,169 mariners × \$964.67 per mariner, rounded).

Remaining Costs to Industry after Implementation of the Regulatory Changes

The Coast Guard is revising § 11.480 so that the number of mariners required to take a radar refresher or re-certification course to renew their radar observer endorsement will be reduced. As shown in table 3 in the “Affected Population” subsection, an average of 132 mariners will still need to take the radar refresher or re-certification course each year. These mariners will continue to have the same costs per mariner shown in table 4. Multiplying the cost per mariner by the average mariners who will still need to take the course each year, we found the total annual cost to industry under this rule will be \$127,336 (132 mariners × \$964.67 per mariner).

Cost Savings

To find the total cost savings of this rule, we subtracted the remaining costs from the baseline costs to industry after implementation of the rule. Subtracting \$127,336 from \$6,915,719, we found the total cost savings of this rule will be \$6,788,383 per year. Table 5 shows the total 10-year undiscounted industry cost savings of this rule will be \$67,883,830. The 10-year estimated discounted cost savings to industry will be \$47,678,762, with an annualized cost savings of \$6,788,383, using a 7-percent discount rate. Using a perpetual period of analysis, we estimated the total annualized cost savings of the rule will be \$5,541,343 in 2016 dollars (assuming a Year 1 of 2019), using a 7-percent discount rate.

Table 5: Total Estimated Cost Savings of the Rule over a 10-year Period of Analysis (Discounted at 7 and 3 Percent)

Year	Total Undiscounted Cost Savings	Total, Discounted	
		7%	3%
1	\$6,788,383	\$6,344,283	\$6,590,663
2	\$6,788,383	\$5,929,237	\$6,398,702
3	\$6,788,383	\$5,541,343	\$6,212,332
4	\$6,788,383	\$5,178,825	\$6,031,390
5	\$6,788,383	\$4,840,023	\$5,855,719
6	\$6,788,383	\$4,523,386	\$5,685,164
7	\$6,788,383	\$4,227,464	\$5,519,577
8	\$6,788,383	\$3,950,901	\$5,358,812
9	\$6,788,383	\$3,692,431	\$5,202,730
10	\$6,788,383	\$3,450,870	\$5,051,194
Total	\$67,883,830	\$47,678,762	\$57,906,284
Annualized		\$6,788,383	\$6,788,383

Benefits

This final rule also provides some qualitative benefits. The CGAA 2015 required the Coast Guard to harmonize the expiration dates of the mariner’s radar observer endorsement with expiration of the mariner’s MMC. Thus, the promulgation of this final

rule facilitates compliance with Section 304 of the CGAA 2015. The elimination of the refresher or re-certification course, and validating qualification with a sea service letter with attestation of radar utilization at the time of application for renewal of an MMC brings the endorsement into concurrence with the MMC date of issuance.

B. Small Entities

The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

Based on the RFA’s definition of a small entity, section 601(6), where it comprises small businesses, non-profit organizations, and small governmental jurisdictions, this final rule only affects mariners and not companies that hire mariners; therefore, mariners do not fall under the definition of a small business, small organization, or small governmental jurisdiction as defined by sections 601(3), 601(4) and 601(5) of the RFA.

This rule reduces the burden on mariners by removing the requirement to attend a radar refresher or re-certification course every 5 years for mariners who have 1 year of relevant sea service in the previous 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on board radar-equipped vessels, or for Coast Guard-approved or accepted radar course-qualified instructors who have taught the class at least twice within the past 5 years. The MMC and radar observer endorsement is in the mariner’s name and not the company’s name, so we assume the affected mariners receive the cost savings from this final rule. We do not have, nor did we receive during the public comment period, any further information that companies would reimburse the

mariners for these costs and would accrue the costs savings.

Therefore, the Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996, Public Law 104-121, we offer to assist small entities in understanding this rule so that they can better evaluate its effects on them and participate in the rulemaking. The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1-888-REG-FAIR (1-888-734-3247).

D. Collection of Information

This rule calls for no new collection of information under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501-3520. The information collection associated with this rule is the currently approved collection 1625-0040 (MMC Application).²⁰ The revisions to 46 CFR 15.815 will eliminate the requirement that a person holding a radar endorsement must also have his or her course completion certificate readily available.

²⁰ The full title of COI 1625-0040 is "Application for Merchant Mariner Credential (MMC), Application for Medical Certificate, Application for Medical Certificate - Short Form, Small Vessel Sea Service (Optional) Form, DOT/USCG Periodic Drug Testing (Optional) Form, and Disclosure Statement for Narcotics, DWI/DUI, and/or Other Convictions (Optional) Form."

While the mariner will no longer physically have to carry the certificate, he or she will still have to carry an MMC that reflects a radar observer endorsement. Those mariners who do not have an MMC that reflects a radar observer endorsement will be allowed to sail provided that they hold, and have immediately available, a course completion certificate, issued within the last 5 years, from a Coast Guard-approved or accepted radar refresher or re-certification course. There is no impact to these mariners, as they currently have to carry a certificate to show course completion.

E. Federalism

A rule has implications for federalism under Executive Order 13132 (Federalism) if it has a substantial direct effect on States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this rule under Executive Order 13132 and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132. Our analysis follows.

It is well settled that States may not regulate in categories reserved for regulation by the Coast Guard. It is also well settled that all of the categories covered in 46 U.S.C. 3306, 3703, 7101, and 8101 (design, construction, alteration, repair, maintenance, operation, equipping, personnel qualification, and manning of vessels), as well as the reporting of casualties and any other category in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, are within the field foreclosed from regulation by the States. See the Supreme Court's decision in *United States v. Locke* and *Intertanko v. Locke*, 529 U.S. 89, 120 S.Ct. 1135 (2000). Because this rule involves the credentialing of mariners under 46 U.S.C. 7101, it relates to personnel qualifications and

is, therefore, foreclosed from regulation by the States. Because the States may not regulate within this category, this rule is consistent with the principles of federalism and preemption requirements in Executive Order 13132.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995, 2 U.S.C. 1531–1538, requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any one year. Although this rule will not result in such expenditure, we do discuss the effects of this rule elsewhere in this preamble.

G. Taking of Private Property

This rule will not cause a taking of private property or otherwise have taking implications under Executive Order 12630 (Governmental Actions and Interference with Constitutionally Protected Property Rights).

H. Civil Justice Reform

This rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988 (Civil Justice Reform) to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this rule under Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks). This rule is not an economically significant rule and will not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This rule does not have tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

K. Energy Effects

We have analyzed this rule under Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use). We have determined that it is not a “significant energy action” under that order because it is not a

“significant regulatory action” under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

L. Technical Standards

The National Technology Transfer and Advancement Act, codified as a note to 15 U.S.C. 272, directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards will be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This rule does not use technical standards. Therefore, we did not consider the use of voluntary consensus standards.

M. Environment

We have analyzed this rule under Department of Homeland Security Management Directive 023-01 (series) and Commandant Instruction 5090.1 (COMDTINST 5090.1), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have made a determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. A Record of Environmental Consideration supporting this determination is available in the docket where indicated under the “ADDRESSES” section of this preamble. This rule is categorically excluded under paragraphs L52, L54, and L56 of Appendix A, Table 1 of DHS Instruction Manual 023–01 (series). Paragraph

L52 pertains to regulations concerning vessel operation safety standards, paragraph L54 pertains to regulations which are editorial or procedural, and paragraph L56 pertains to regulations concerning the training, qualifying, and licensing of maritime personnel. This rule involves merchant mariner credentialing regulations to remove obsolete portions of the radar observer requirements, harmonize the radar observer endorsement with the MMC, and reduce an unneeded financial burden on mariners required to hold a radar observer endorsement.

List of Subjects

46 CFR Part 10

Penalties, Personally identifiable information, Reporting and recordkeeping requirements, Seamen.

46 CFR Part 11

Penalties, Reporting and recordkeeping requirements, Schools, Seamen.

46 CFR Part 15

Reporting and recordkeeping requirements, Seamen, Vessels.

For the reasons discussed in the preamble, the Coast Guard amends 46 CFR parts 10, 11, and 15 as follows:

PART 10—MERCHANT MARINER CREDENTIAL

1. The authority citation for part 10 is revised to read as follows:

Authority: 14 U.S.C. 503; 31 U.S.C. 9701; 46 U.S.C. 2101, 2103, 2110; 46 U.S.C. chapter 71; 46 U.S.C. chapter 73; 46 U.S.C. chapter 75; 46 U.S.C. 2104; 46 U.S.C. 7701, 8903, 8904, and 70105; Executive Order 10173; Department of Homeland Security Delegation No. 0170.1.

2. Amend § 10.232 as follows:

- a. Redesignate paragraphs (a)(2)(vii) through (x) as paragraphs (a)(2)(viii)

through (xi), respectively;

b. Add new paragraph (a)(2)(vii); and

c. Revise paragraph (a)(6).

The addition and revision read as follows:

§ 10.232 Sea service.

(a) * * *

(2) * * *

(vii) For those seeking to renew a radar observer endorsement, whether the vessel is equipped with radar and if the mariner served in a position that routinely uses radar for navigation and collision avoidance purposes.

* * * * *

(6) An applicant who has been acting as a pilot may submit a letter from a pilot's association attesting to the applicant's sea service. For those pilots seeking to renew a radar observer endorsement, the association's letter should indicate that the vessels piloted were equipped with radar, and that radar was used by the pilot for navigation and collision avoidance purposes. Pilots not part of an association may submit other relevant records indicating service, such as billing forms. For a raise-of-grade, pilots must comply with the requirements of paragraph (a)(2) of this section.

* * * * *

PART 11—REQUIREMENTS FOR OFFICER ENDORSEMENTS

3. The authority citation for part 11 is revised to read as follows:

Authority: 14 U.S.C. 503; 31 U.S.C. 9701; 46 U.S.C. 2101, 2103, and 2110; 46 U.S.C. chapter 71; 46 U.S.C. 7502, 7505, 7701, 8906, and 70105; Executive Order 10173; Department of Homeland Security Delegation No. 0170.1. Section 11.107 is also issued under the authority of 44 U.S.C. 3507.

4. Amend § 11.480 as follows:

a. In paragraph (d), remove the text “paragraph (e)” and add in its place the text “paragraphs (f) or (g)”; and

b. Revise paragraphs (e) through (h).

The revisions read as follows:

§ 11.480 Radar observer.

* * * * *

(e) A radar observer endorsement issued under this section is valid until the expiration of the mariner’s MMC.

(f) A mariner may also renew his or her radar observer endorsement by providing evidence of meeting the requirements in 46 CFR 10.227(e)(1)(v).

(g) The Coast Guard will accept on-board training and experience through acceptable documentary evidence of 1 year of relevant sea service within the last 5 years in a position that routinely uses radar for navigation and collision avoidance purposes on vessels equipped with radar as meeting the refresher or re-certification requirements of paragraph (d) of this section. This also applies to mariners applying for raises of grade or new endorsements under 46 CFR 10.231.

(h) An applicant for renewal of an MMC who does not provide evidence of meeting the renewal requirements of paragraph (d), (f), or (g) of this section will not have

a radar observer endorsement placed on his or her MMC.

PART 15—MANNING REQUIREMENTS

5. 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; sec. 617, Pub. L. 111-281, 124 Stat. 2905; and Department of Homeland Security Delegation No. 0170.1.

6. Amend § 15.815 by revising paragraph (d) and removing paragraph (e).

The revision reads as follows:

§ 15.815 Radar observers.

* * * * *

(d) Until July 22, 2024, a person may satisfy the requirements in paragraph (a), (b), or (c) by having immediately available a valid course completion certificate from an appropriate Coast Guard-approved or accepted radar course that was issued within the previous 5 years.

Dated: May 31, 2019.

J. P. NADEAU,
Rear Admiral, U.S. Coast Guard
Assistant Commandant for Prevention Policy.
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