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DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Parts 140 and 143

46 CFR Parts 110 and 111

[Docket No. USCG-2012-0850]

RIN 1625-AC00

Electrical Equipment in Hazardous Locations

AGENCY: Coast Guard, DHS.

ACTION: Final rule.

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**SUMMARY:** The Coast Guard is issuing regulations applicable to newly constructed mobile offshore drilling units (MODUs), floating outer continental shelf (OCS) facilities, and vessels other than offshore supply vessels (OSVs) that engage in OCS activities. The regulations expand the list of acceptable national and international explosion protection standards and add the internationally accepted independent third-party certification system, the International Electrotechnical Commission System for Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEX), as an accepted method of testing and certifying electrical equipment intended for use in hazardous locations. The regulations also provide owners and operators of existing U.S. MODUs, floating OCS facilities, vessels other than OSVs, and U.S. tank vessels that

carry flammable or combustible cargoes, the option of following this compliance regime as an alternative to the requirements contained in existing regulations.

**DATES:** This final rule is effective [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

The Director of the Federal Register has approved the incorporation by reference of certain publications listed in this rule, effective [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

**ADDRESSES:** Comments and material received from the public, as well as documents mentioned in this preamble as being available in the docket, are part of docket USCG-2012-0850 and are available for inspection or copying at the 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, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. You may also find this docket online by going to <http://www.regulations.gov> and following the instructions on that website.

*Viewing material incorporated by reference.* You may make arrangements to view this material by calling the Coast Guard's Office of Regulations and Administrative Law at 202-372-3870 or by emailing [HQS-SMB-CoastGuardRegulationsLaw@uscg.mil](mailto:HQS-SMB-CoastGuardRegulationsLaw@uscg.mil).

**FOR FURTHER INFORMATION CONTACT:** If you have questions on this rule, call or e-mail Mr. Raymond Martin, Systems Engineering Division (CG-ENG-3), Coast Guard; telephone 202-372-1384, e-mail [Raymond.W.Martin@uscg.mil](mailto:Raymond.W.Martin@uscg.mil). If you have questions on viewing or submitting material to the docket, call Cheryl Collins, Program Manager, Docket Operations, telephone 202-366-9826.

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I. Abbreviations

ABS	American Bureau of Shipping
ANSI	American National Standards Institute
ASTM	ASTM International
ATEX (Directive)	Protective Systems Intended for use in Potentially Explosive Atmospheres
BSEE	Bureau of Safety and Environmental Enforcement
CFR	Code of Federal Regulations
CSA	Canadian Standards Association
DHS	Department of Homeland Security
Ex	Designation of explosion-protected electrical apparatus complying with IEC standards
ExCB	Ex Certification Body
FR	Federal Register
IEC	International Electrotechnical Commission
IECEX	IEC Certification to Standards relating to Equipment for use in Explosive Atmospheres
IEEE	Institute of Electrical and Electronics Engineers
IMO	International Maritime Organization
ISA	International Society of Automation
ISO	International Organization for Standardization

MSC	Marine Safety Center
MODU	Mobile Offshore Drilling Unit
NAVSEA	Naval Sea Systems Command
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NOSAC	National Offshore Safety Advisory Committee
NPFC	Naval Publications and Forms Center
NPRM	Notice of Proposed Rulemaking
OCS	Outer Continental Shelf
OMB	Office of Management and Budget
OSV	Offshore Supply Vessel
RP	Recommended Practice
ULS	Ultra Low Sulfur
U.S.	United States
U.S.C.	United States Code

## II. Regulatory History

### Notice of Proposed Rulemaking

On June 24, 2013, we published a notice of proposed rulemaking (NPRM) in the Federal Register entitled Electrical Equipment in Hazardous Locations (78 FR 37760). The NPRM proposed requiring third-party testing and certification of electrical equipment in hazardous locations by a Coast Guard-accepted independent third-party laboratory in order to achieve uniform standards between U.S. and foreign vessels and floating facilities. We received several requests to extend the 90-day comment period until November 30, 2013. We granted these requests and announced the extension in the Federal Register (78 FR 58989) on September 25, 2013. We received 23 comment letters on the NPRM, and considered all of these comments in developing this final rule. In section VI below, we inserted a table that summarizes the changes between the NPRM and the final rule.

### Advisory Committee

In April 2013, the Coast Guard tasked the National Offshore Safety Advisory Committee (NOSAC) to review and comment on a notice of policy we published in the Federal Register (77 FR 71607) on December 3, 2012. The policy recommended that electrical equipment on foreign mobile offshore drilling units (MODUs) that had never operated on the outer continental shelf (OCS), but were intended to do so, meet Chapter 6 of the 2009 MODU Code of the International Maritime Organization (IMO) and obtain equipment certification under the International Electrotechnical Commission Certification to Standards relating to Equipment for use in Explosive Atmospheres (IECEX) System. While NOSAC was reviewing the notice of policy, we published the Electrical Equipment in Hazardous Locations NPRM (78 FR 37760) in the Federal Register. The NPRM proposed regulations similar to the recommendations contained in the notice of policy. Unlike the notice of policy, however, the NPRM was not limited to foreign MODUs but applied to all vessels and facilities that had never operated on the outer continental shelf (OCS) but intended to. Further, the NPRM proposed requiring that certification under the IECEX System be conducted by Coast Guard accepted independent laboratories in order to facilitate Coast Guard oversight of those laboratories. NOSAC provided comments on the notice of policy and on the NPRM, and those comments were considered in developing this final rule.

### III. Background

A key finding of the Coast Guard's investigation of the MODU DEEPWATER HORIZON explosion, fire, and sinking emphasized the importance of proper electrical equipment installations in hazardous locations during oil drilling exploration on U.S. and foreign MODUs. The Coast Guard, therefore, reviewed the existing regulations for

hazardous locations; specifically, the requirements for electrical equipment testing and certification and the standards applicable to U.S. and foreign MODUs, floating OCS facilities, and vessels that engage in OCS activities.

Currently, electrical equipment on U.S. vessels and floating facilities that operate on the OCS must comply with 46 CFR subpart 111.105. This subpart adopts international and national standards and requires the equipment to be tested and certified by a Coast Guard-accepted independent third-party laboratory.

In contrast, foreign vessels and floating facilities that engage in OCS activities must meet the requirements of 33 CFR subchapter N. Currently, foreign floating OCS facilities must meet the same engineering standards as U.S. floating OCS facilities, while foreign vessels engaged in OCS activities on the U.S. OCS do not meet the same engineering standards as U.S. vessels. While the Coast Guard supports the development and adoption of international vessel safety standards, the existing safety requirements of the International Convention on the Safety of Life at Sea, 1974 (SOLAS) do not completely account for the specifics of hydrocarbon production, processing, storage, and handling systems, and the 2009 IMO MODU Code, which provides a recommended SOLAS equivalency for MODUs, is not a legally binding instrument. For electrical equipment in hazardous locations, we believe this rule is necessary to ensure that all vessels engaged in OCS activities meet the same, OCS-specific safety standards. In this final rule, therefore, we require that new foreign MODUs, floating OCS facilities and vessels meet the same standards for explosion protection in hazardous areas as their U.S. counterparts before operating on the OCS. Additionally, through this final rule, we expand the list of acceptable standards for existing and new vessels and facilities.

#### IV. Discussion of Comments and Changes

As noted above, we received 23 comment letters in response to the NPRM. Additionally, NOSAC submitted a report to the Coast Guard that included their comments on the NPRM. We considered all of these comments in the development of this final rule. The comments and our responses have been grouped into subject-matter categories below. In cases where the comment resulted in a change to the regulations previously proposed in the NPRM, the change is specifically identified and discussed.

##### **Implementation date**

The NPRM's proposed implementation date was 30 days after publication of the final rule. Fourteen comments stated that was unreasonable. These commenters explained that over 200 MODUs were either under contract, under construction or due to be constructed in the next 5 years and that the costs of changing the specifications for the electrical equipment located in hazardous locations would be much greater than that indicated in Section VI of the NPRM.

We agree. While the estimates provided correspond to the global MODU population currently under construction, a majority of which have not historically sought to operate on the OCS, the associated burden on vessels under construction is real. Thus, we have delayed the implementation date of the requirements of 46 CFR subpart 111.108. The requirements of 46 CFR subpart 111.108 will apply to MODUs, floating OCS facilities, and vessels, other than offshore supply vessels regulated under 46 CFR subchapter L, that are constructed after April 2, 2018 and that engage in OCS activities. Estimates of the affected foreign flagged vessel population reside in the regulatory analysis section of this final rule. The definition of "constructed" has been added to 33

CFR 140.10 and 46 CFR 110.15-1(b). It is consistent with the existing definition for “constructed” found in 46 CFR 170.055(f). Constructed means either the date a keel is laid or the date that construction identified with the vessel or facility has begun.

Existing U.S. MODUs, floating OCS facilities, and vessels, other than offshore supply vessels (OSVs), and U.S. tank vessels that carry flammable or combustible cargoes may immediately use the expanded list of explosion protection standards and IECEx certification regime identified in this final rule in lieu of the existing requirements in §§ 111.105-1 through 111.105-15.

### **2009 IMO MODU Code**

The NPRM proposed the adoption of a selection of explosion protection standards and certification schemes. Thirteen comments suggested that the proposed regulations were unnecessary and that compliance with the 2009 IMO MODU Code should be sufficient for all vessels. Many of these comments further noted that the 2009 IMO MODU Code already requires certification by an independent testing laboratory. We agree in part. The Coast Guard supports the development and adoption of international vessel safety standards. The Coast Guard believes the 2009 IMO MODU Code provides helpful guidance for the design and engineering of MODUs, particularly in supplementing SOLAS with standards specific to hydrocarbon production, processing, storage, and handling systems, and should be given appropriate effect by flag administrations. However, the 2009 IMO MODU Code is not a legally binding instrument and by its terms does not apply to vessels that are not MODUs. Additionally, there are differing interpretations of the “independent testing laboratory” certification contained in the 2009 MODU Code. As the coastal state with jurisdiction, we find that it

is a necessary and reasonable safety measure to require that newly constructed foreign vessels and floating facilities that engage in OCS activities have uniform safety standards for explosion protection in hazardous locations.

#### **Cost of compliance for existing foreign vessels and facilities**

Ten comments addressed the cost of bringing into compliance with the proposed rule existing MODUs that are currently not operated on the OCS but the owners or operators intend them to do so. Those comments stated that the cost of bringing the existing vessels into compliance would likely exceed the cost published in the NPRM. In addition to required equipment recertification and replacement costs, there would be a loss of revenue during necessary downtime for replacement of equipment that could equal or exceed all other costs.

We recognize that the costs to retrofit an existing MODU could be prohibitive depending on the design, construction and type of operation of an individual MODU. Because of this, we decided to make the final rule applicable to vessels and facilities that are constructed after April 2, 2018 and that engage in OCS activities. Existing vessels and facilities will continue to be subject to the regulations and standards effective at the time of their construction.

Similarly, one comment recommended that the Coast Guard address electrical equipment in hazardous locations on MODUs currently on the OCS. The Coast Guard disagrees. As explained earlier, this rule does not require any existing vessel or facility to meet the requirements of subpart 111.108 because the costs to retrofit existing equipment could be prohibitive depending on the design, construction and type of operation of an individual vessel or facility.

One comment stated that the Coast Guard should address electrical equipment in hazardous locations on foreign oil and chemical tankers and gas carriers entering U.S. ports. These vessels are outside the scope of this rulemaking, which is confined to vessels and facilities engaged in OCS activities. Additionally, foreign oil and chemical tankers and gas carriers are already subject to international standards and to Coast Guard inspection for compliance with those standards.

#### **Sister vessels of vessels already operating on the OCS**

Four comments requested that the final rule not apply to sister vessels of vessels already operating on the OCS. They argued that these vessels are identical in design to those existing vessels that the Coast Guard is excluding from the requirements of this final rule.

Under the NPRM, vessels new to the OCS would have been subject to the new requirements, whereas vessels and facilities that had previously operated on the OCS would not. In this final rule, we have changed the applicability to include only those vessels and facilities that are constructed after April 2, 2018 and that engage in OCS activities. This final rule, therefore, does not place new requirements on any existing vessels or facilities nor any vessel or facility that is constructed on or before April 2, 2018. Existing vessels or facilities or those constructed on or before April 2, 2018 will remain subject to the regulations and standards effective at the time of their construction and will remain subject to Coast Guard inspection. Any vessel or facility constructed after the implementation date will be subject to the requirements of 46 CFR subpart 111.108 before operating on the OCS.

#### **Coast Guard independent laboratory requirement**

Eleven comments addressed the proposed requirement in 46 CFR 111.108-3 requiring the testing and certification of electrical equipment in hazardous locations by an independent laboratory. The definition of independent laboratory in the Coast Guard's Electrical Engineering regulations is contained in 46 CFR 110.15-1, and means a laboratory accepted by the Coast Guard using the independent laboratory criteria found in 46 CFR 159.010. Commenters stated that this requirement is burdensome and unnecessary, particularly for Ex Certification Bodies (ExCBs) and Ex Testing Laboratories operating under the IECEx System. Additionally, these commenters were concerned that there were not enough independent laboratories accepted by the Coast Guard, particularly within the IECEx System, to meet the demands for equipment certifications necessary to comply with this final rule. Further, the commenters stated that requiring Coast Guard-accepted independent laboratories undermines use of international standards, foreign flag administrations, and Recognized Organizations.

We disagree. First, there are differing interpretations of the "independent testing laboratory" certification contained in the 2009 MODU Code. U.S. MODUs, vessels and floating facilities, have been subject to independent third-party testing for over 30 years because we believe it is a critically important element in preventing accidental explosions in hazardous locations. As the coastal state with jurisdiction, we find that it is a necessary and reasonable safety measure to require that newly constructed foreign vessels and floating facilities that engage in OCS activities have uniform safety standards for explosion protection in hazardous locations. This final rule, therefore, requires compliance with uniform explosion protection standards and certification regimes. The requirement to use Coast Guard-accepted independent laboratories allows the Coast

Guard reasonable oversight of laboratories located worldwide and is consistent with our existing regulations for U.S. vessels and facilities engaged in OCS activities. Currently, the majority of ExCBs are Coast Guard-accepted independent laboratories. We have contacted all ExCBs to suggest that they apply for acceptance. We expect that if the demand is present, additional ExCBs will apply for acceptance. Because this final rule applies to new vessels and facilities constructed after April 2, 2018, we expect system designers, equipment manufacturers, and independent laboratories will be able to smoothly transition from existing international standards to the requirements of this final rule. Finally, the existing SOLAS standards do not completely account for the particularities of vessels designed and constructed for OCS activities, and the 2009 IMO MODU Code is neither mandatory nor applicable to all vessels. Therefore, implementation of a domestic standard for electrical equipment in hazardous locations is necessary to ensure that all vessels engaged in U.S. OCS activities meet uniform safety standards particular to OCS activities and does not undermine international standards or organizations.

In a separate rulemaking, the Coast Guard published an interim rule on August 18, 2014 (79 FR 48894) for U.S. offshore supply vessels greater than 6,000 GT ITC. That interim rule also recognized the IECEx System for certification of electrical equipment in hazardous locations. Unlike section 111.108-3(b)(3) of this final rule, 46 CFR 111.106-3(b)(3)(iii) of the interim rule does not require certification of electrical equipment in hazardous locations to be done by a Coast Guard accepted independent laboratory. The Coast Guard recognizes the inconsistency between 46 CFR 111.106-

3(b)(3)(iii) of the interim rule and 46 CFR 111.108-3(b)(3) of this final rule and intends to align 46 CFR 111.106-3(b)(3)(iii) with this final rule in a future rulemaking.

**ATEX equipment certified by a third-party independent laboratory**

Eight comments suggested the Coast Guard accept electrical equipment with certification issued under the European Commission Directive (94/9/EC) on equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres (ATEX Directive or ATEX).

We disagree. ATEX certification does not require independent third party testing for all types of equipment. It also does not ensure that electrical equipment installed in hazardous locations is fully tested to relevant standards. When foreign MODUs and vessels have electrical equipment installed in hazardous locations that is not independently tested, there is not the same level of safety for explosion protection in hazardous areas as required of U.S. vessels and floating facilities that operate on the OCS and that are required to meet 46 CFR subpart 111.105. The ATEX Directive is a European conformity assessment scheme designed to facilitate trade within Europe and is based on “Essential Health and Safety Requirements.” Additionally, the ATEX Directive is currently not applicable to seagoing vessels or MODUs and it is our experience with ATEX certification that it can be difficult to determine the extent of testing performed by the “notified body<sup>1</sup>”.

It is also important to recognize that some ATEX certified electrical equipment may be acceptable under subpart 111.108 if it can be demonstrated that the electrical equipment has been fully tested and certified to the applicable standards contained in 46

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<sup>1</sup> A notified body is an organization “appointed by EU Member States, either for approval and monitoring of the manufacturers’ quality assurance system or for direct product inspection.” [http://ec.europa.eu/enterprise/glossary/index\\_en.htm](http://ec.europa.eu/enterprise/glossary/index_en.htm), retrieved February 24, 2014.

CFR subchapter J by an independent laboratory as defined in 46 CFR 110.15-1.

Frequently, equipment with ATEX certification also has certifications acceptable under 46 CFR 111.108-3 of this final rule.

Two comments requested that the Coast Guard clarify a statement in CG-ENG Policy Letter No. 01-13, Alternate Design and Equipment Standard for Floating Offshore Installations (FOI) and Floating Production, Storage, and Offloading (FPSO) Units on the U.S. Outer Continental Shelf, of June 26, 2013. For hazardous locations, the policy letter states that electrical equipment certified under the ATEX scheme will not be accepted by the Coast Guard. As explained above, if the equipment is also certified in accordance with one of the acceptable methods listed in 46 CFR 111.108-3, in addition to its ATEX certification, then the equipment is acceptable under 46 CFR 111.108-3 of this final rule.

#### **Class I, Special Division 1 hazardous locations**

Three comments said the proposed use of Class I, Special Division 1 in 46 CFR 111.108-3(e) may cause confusion as it is not a term recognized by the National Fire Protection Association's (NFPA) standard, NFPA 70, National Electrical Code (NEC), We disagree and have not revised this section. Class I, Special Division 1 is intended to be equivalent to Class I, Zone 0, and is consistent with Informational Note No. 2 of Article 500.5(B)(3) of NFPA 70. Coast Guard regulations have long recognized that certain spaces such as cargo pump rooms and cargo tanks are more hazardous than other Class I, Division 1 locations. For these hazardous locations, we limit the types of permitted electrical installations. Use of the term "Class I, Special Division 1" simplifies the designation of these locations.

#### **Electrical equipment inspection and maintenance requirements**

Five comments recommended that the Coast Guard establish standards for the design, installation, inspection, and maintenance of electrical equipment in hazardous locations. Two comments suggested requiring an onboard electrical equipment register that contains information regarding electrical equipment and its inspection, maintenance, and operational history. The commenters also suggest this information could be reviewed by visiting Coast Guard marine inspectors or third-party inspection personnel and could become part of a company's quality system. We agree that competency and accurate recordkeeping are critical to safety, but this recommendation is outside the scope of this rulemaking.

#### **“Operated on the OCS”**

Under the NPRM, vessels and facilities new to the OCS would be subject to the NPRM, whereas vessels and facilities that had previously operated on the OCS, would not. Two comments requested that the Coast Guard more clearly define what constitutes having “operated on the OCS.” Because this final rule now applies only to vessels and facilities constructed after April 2, 2018, that engage in OCS activities, we believe no further elaboration is needed, because the phrase “operated on the OCS” is no longer used.

#### **BSEE- USCG MOA, OCS-8, regarding MODUs**

Two comments requested clarification on the responsibilities of the Coast Guard and of the Bureau of Safety and Environmental Enforcement (BSEE) for electrical equipment in hazardous locations on MODUs under the USCG/BSEE Memorandum of Agreement, OCS-8, signed June 4, 2013. While the subject is outside the scope of this rulemaking because neither agency's responsibilities with regard to regulating electrical

equipment located in hazardous locations are affected by this final rule, it is relevant to understanding the regulatory requirements for electrical equipment located in hazardous locations.

BSEE and Coast Guard have a shared responsibility for safety on the OCS. In general, the Coast Guard is responsible for the vessel or facility and all of its supporting systems while BSEE is responsible for systems related to the drilling and production of resources. Classification of hazardous locations and design of electrical systems is a vessel-wide or facility-wide task and the Coast Guard maintains a holistic view of the vessel or facility. The Coast Guard, in this rule, provides an expanded list of standards that are applicable to systems under the Coast Guard's jurisdiction as explained in BSEE-USCG MOA OCS-8. The electrical safety standards contained in BSEE's OCS regulations, 30 CFR part 250, are acceptable to the Coast Guard. Frequently, drilling and production components will be installed on vessels or facilities on a temporary or semi-temporary basis. In general, BSEE oversees these systems and if they find them acceptable, their installation is acceptable to the Coast Guard.

### **Class I, Division 2 and Class I, Zone 2**

Two comments suggested that electrical equipment in Division 2 or Zone 2 locations be accepted without independent third-party certification or be accepted with ATEX certification. The Coast Guard agrees to the extent that applicable provisions of NFPA 70 and the 2009 IMO MODU Code permit. 46 CFR 111.108-3(b)(1) and (b)(2) incorporate by reference Articles 500-504 and Article 505 of the NFPA 70. Articles 501.125(B) and 505.20(C) of the NFPA 70 allow the installation of certain electrical equipment in these locations without independent identification or listing if the

equipment meets specific requirements that reduce the risk of explosion. This final rule is not intended to modify these standards. 46 CFR 111.108-3(b)(3) incorporates Chapter 6 of the 2009 IMO MODU Code and requires certification under the IECEx System. The IECEx System requires independent certification for all electrical equipment in hazardous areas. This final rule is not intended to modify the IECEx System. Electrical system designers must choose an explosion protection standards regime from the list of acceptable options provided in 46 CFR 111.108-3 and comply with the standards regime they chose.

**American National Standards Institute (ANSI) and International Society of Automation (ISA) standards**

One comment requested that the Coast Guard incorporate the latest ANSI/ISA safety standards for hazardous locations. The Coast Guard agrees and notes that 46 CFR 111.108-3(b) incorporates the ANSI/ISA series of standards incorporated in NFPA 70, as it did in the NPRM.

**Certain required equipment not meeting Zone 2 requirements**

Two comments noted that some required equipment located in hazardous locations is not available as certified for Zone 2 areas, such as search and rescue transponders. The Coast Guard agrees with this comment, and notes that several standards included in this final rule address this situation. The objective of this final rule is to provide a selection of standards for certification of electrical equipment in hazardous locations. Electrical equipment not meeting the Class I, Zone 2 or Class I, Division 2 requirements, should be installed as far as possible from hazardous locations, or if not possible, located or installed in the least hazardous location. Standards listed in 46 CFR

111.108-3 of this final rule do address equipment such as this. Section 6.3.3 of IEC 61892-7:2007<sup>2</sup>, which is accepted by the 2009 IMO MODU Code, refers to an assessment for energy-limited equipment and circuits that is provided in IEC 60079-15, ANSI/ISA 60079-15, ANSI/ISA-12.12.01, and UL 1604. Similarly, non-third party assessment provisions are provided in Article 501 of NFPA 70 for electrical equipment without switching mechanisms, or similar arc producing devices. These standards can be used when certain required equipment is not available as certified for Zone 2 areas.

#### **Acceptance of IECEx certified equipment**

One comment asked if equipment tested to the IECEx System but not yet marked as such would be acceptable. The commenter explained that equipment is sometimes delivered before the IECEx Certificate of Compliance is issued. Another comment noted that equipment can be certified under both the ATEX Directive and the IECEx System but only have ATEX labeling. Finally, a comment requested acceptance of equipment consisting of assemblies of IECEx certified components rather than requiring a certificate for the entire assembly.

These are compliance issues that can be very simple or very complex depending on the type of equipment and will be addressed by the Marine Safety Center (MSC) or cognizant Officer-in-Charge, Marine Inspection on a case-by-case basis. When IECEx on any other Coast Guard accepted independent third party certification is unclear, documentation must be presented that demonstrates the equipment meets the applicable requirements. Any equipment or assembly of equipment must meet all the requirements of the IECEx System. It is not the Coast Guard's intent to modify the IECEx System.

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<sup>2</sup> IEC 61892-7, Mobile and fixed offshore units – Electrical installations – Part 7: Hazardous areas, Edition 2.0,

### **Ultra Low Sulfur (ULS) diesel fuels**

One comment requested that the Coast Guard consider lowering the minimum flashpoint that defines hazardous locations, because Ultra Low Sulfur (ULS) diesel fuels are being produced against a minimum flashpoint of 52°C, rather than the 60°C minimum that has served as the basis for both Coast Guard and IMO requirements to date. We are unable to make this change in the final rule because it was not proposed in the NPRM. The minimum flashpoint of 60°C exists in numerous standards and regulations including 46 CFR 111.105-29, 46 CFR 111.105-31, 46 CFR 58.01-10, numerous locations within SOLAS, and IEC 60092-502:1999. We may consider proposing a change to the minimum flashpoint in a future rulemaking. This will provide the public the opportunity to comment on the proposal. Until that occurs, the MSC can accept arrangements that provide an equivalent level of safety in accordance with 46 CFR 110.20-1.

### **IECEX certified equipment in Class I, Division 1 and Class I, Division 2 locations**

One commenter requested that drill floor equipment that is IECEX certified for Class I, Zone 1 or Class I, Zone 2 be permitted on drill floors classified to Class I, Division 1 or Class I, Division 2. Equipment certified using the zone classification system, regardless of whether certification was by a Coast Guard-accepted independent laboratory or IECEX ExCB, is permitted in locations that are classified using the division classification system in accordance with Article 501.5 of NFPA 70, NEC. The same commenter requested that drill floors be allowed to be classified under both systems so that both zone and division certified equipment could be used. We do not favor one classification system over the other and we are not opposed to dual classification, but we

caution that great care must be taken. While both systems offer comparable levels of safety the two systems are not identical or interchangeable. Indiscriminate “mixing and matching” of systems could result in errors that result in lower levels of safety. This limits the benefit of dual classification. Article 505.7 of NFPA 70 provides details on dual classification. Any mixing of classification systems should be done in accordance with NFPA 70 to ensure that the requirements of 46 CFR subpart 111.108 are met.

#### V. Incorporation by Reference

The Director of the Federal Register has approved the material in § 110.10-1 for incorporation by reference under 5 U.S.C. 552 and 1 CFR part 51. Copies of the material are available from the sources listed in that section.

#### VI. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive Orders (E.O.s) related to rulemaking. Below we summarize our analyses based on these statutes or E.O.s.

##### 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.

This rule is not a significant regulatory action under section 3(f) of Executive Order 12866 as supplemented by Executive Order 13563, and does not require an assessment of potential costs and benefits under section 6(a)(3) of that Order. The Office of Management and Budget (OMB) has not reviewed it under that Order. Nonetheless, we developed an analysis of the costs and benefits of the rule to ascertain its probable impacts on industry.

A summary of the changes between the NPRM and the final rule follows:

**Table 1: Changes between NPRM and final rule**

<b>Subject</b>	<b>Stage</b>		<b>Impact</b>
	<b>NPRM</b>	<b>Final Rule</b>	
<i>Affected Population</i>	U.S. and foreign vessels and floating OCS facilities that are new to the OCS or newly built.	Under the final rule, only vessels and facilities constructed after April 2, 2018 will be subject to the rule.	Allows existing vessels and facilities as well as those currently under contract or construction to avoid potentially costly retrofit/recertification costs.
<i>Implementation Date</i>	Affected population required to comply by the effective date, which is 30 days after final rule is published.	Changed to 3 years after effective date of the rule.	Allows owners and operators to avoid recertification costs for vessels or facilities currently under contract or construction.

Discussion of Applicable Regulatory Assessment Comments and Changes

The Coast Guard received several comments on the published NPRM. These comments have been grouped by topic, as several comments addressed similar concerns, and are discussed in the following table.

**Table 2: NPRM Comment Topics and Responses**

<p><b>Implementation Date</b></p>	<p>Several commenters voiced their concern that the 30 day period between publication of the final rule and the effective date of the requirements was too brief and did not allow sufficient time for vessel and facility owners to come into compliance. Changing the implementation date from 30 days to 3 years after publication of the rule addresses this concern and provides owners and operators of the affected population the amount of time deemed sufficient by both the Coast Guard and commenters alike, to meet the requirements of this rule.</p>
<p><b>Compliance costs for vessels currently under contract or construction</b></p>	<p>Several comments addressed the concern that vessels currently under contract or construction could face recertification costs before the vessel has been completed. For example, one such comment stated, “Proposed regulations will block entry onto the OCS of over 200 MODUs, built to the 2009 MODU Code, that are currently under contracting or construction.” The Coast Guard acknowledges the potential cost associated with vessels currently under design or construction. Estimates suggest that designs and contracts are sometimes set as much as 3 years in advance. It is for this reason that we have changed the implementation date to 3 years after the publication of the rule. A 3 year delayed implementation date allows vessels currently under contract or construction to remain subject to the regulations in effect at the time that their construction began. Changing the implementation date to 3 years after the publication of the rule allows owners and operators of vessels currently under contract or construction to avert any costs associated with the requirements of this rule.</p>
<p><b>Existing foreign vessels and facilities</b></p>	<p>Several comments addressed existing MODUs that do not currently operate on the OCS but intend to operate on the OCS and the cost of bringing them into compliance with the regulations prescribed in the NPRM. We recognize that the costs of retrofitting and/or recertifying existing MODUs could be prohibitive depending on the individual MODU. Because of this, we revised the rule’s applicability to include only those vessels and facilities that are constructed after April 2, 2018 and that operate on the OCS. Existing vessels and facilities or vessels and facilities constructed on or before April 2, 2018 will continue to be subject to the regulations and standards effective at the time of their construction.</p>
<p><b>Accuracy of Recertification Cost Model and Estimates</b></p>	<p>Some commenters stated that the burden to industry would likely exceed the cost published in the NPRM for existing vessels/MODUs. In addition to required equipment recertification and replacement costs, there would be a loss of revenue during necessary downtime for replacement of equipment that could equal</p>

	or exceed all other costs. As noted previously, due to the burden for existing vessels or vessels currently under contract or construction, the Coast Guard modified the rule's affected population to include only those vessels and facilities that are constructed after April 2, 2018 and that engage in OCS activities.
<b>Barriers to trade</b>	One commenter suggested the proposal would impose U.S.-specific requirements that are above and beyond international norms, and would create a non-tariff barrier to trade that would restrict the availability of rigs for the U.S. market. The Coast Guard does not foresee any barriers to trade. Coast Guard used NIST's process to notify foreign governments of our proposed NPRM and no comments were received as a result of that outreach.

Costs: U.S. Vessels

We do not anticipate any costs to be borne by the U.S.-flagged vessels that will be affected by this rule. The rule requires that all U.S. vessels, excluding OSVs that are regulated under 46 CFR subchapter L, that are constructed after April 2, 2018 and engage in OCS activity, comply with the newly created subpart 111.108. U.S. flagged vessels which fall within this scope are provided with an expanded list of standards and certification options.

Subpart 111.108 will not impose any burden on U.S. vessels due to the nature of current industry practice. Because North American certification of electrical equipment is generally to the most current edition of the published reference standards,<sup>3</sup> we do not anticipate new equipment will be tested and certified to the standards referenced in subpart 111.105 when more current, updated editions of the standards are available.

The logic applied to U.S. vessels, excluding OSVs as discussed above, applies to U.S. MODUs and floating OCS facilities as well. We do not anticipate any cost burden associated with this rule to be imposed on this vessel class. We believe this because the affected population are those U.S. MODUs and floating OCS facilities that are

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<sup>3</sup> Confirmed by Principal Engineer – Global Hazardous Locations Product Safety, UL LLC., 12/26/2012

constructed after April 2, 2018. These vessels will be subject to subpart 111.108, a subpart that contains the updated standards to which new equipment will be certified. As with the vessels discussed earlier, in the absence of subpart 111.108, new equipment would be built to the most current standards as a matter of industry practice. Under this final rule, this scenario will not require any costs to the vessel owner as there is no change in the regulatory environment for U.S. MODUs and floating OCS facilities.

Under this final rule, all U.S. MODUs, floating OCS facilities, vessels other than OSVs, and U.S. tank vessels may comply with this new subpart in lieu of §§ 111.105-1 through 111.105-15. We do not foresee any additional costs to the owners of these vessels and facilities by providing this option but if there are additional costs, there is expected to be equal or greater benefit to the owner driving the selection of this option. Currently, the regulations for electrical installations in hazardous locations are contained in subpart 111.105. This regulation will expand the available subparts to include subpart 111.108, while still allowing owners and operators the option to remain subject to existing subpart 111.105.

#### Costs: Foreign Vessels

While the modification of the affected population aids us in estimating the effects of the proposed rulemaking, it does not further refine the costs which are applied to the population. As some commenters on the NPRM document have reinforced, the estimated costs associated with the rule could vary widely. Industry costs were constructed from a variety of elements, for example the cost of certifying equipment or the opportunity cost of recertification of said equipment. With the modification of the affected population we are able to drop the opportunity cost from our analysis, which allows us to further

streamline our discussion of the costs for the rulemaking. What remains is the cost associated with third party certification of equipment.

Currently, foreign vessels are not required to utilize third party certified equipment in hazardous areas unless explicitly required by their flag state. Implementation of the final rule will require certification by a Coast Guard approved, independent laboratory which, in effect, changes the baseline for newly constructed foreign vessels. Foreign flagged vessels constructed 3 years after the implementation date seeking entrance to the OCS in pursuit of OCS activities will be required to utilize third party certified equipment where previously this was not explicitly required. Our analysis of this baseline change is clouded by the aggregate nature of the cost of certification. When an entity purchases equipment for use in a hazardous location on a vessel, the marginal cost of the certification element of the purchase price is not itemized for the purchaser. The certification cost is present in the purchase price as a value added component of the total price of the equipment. As such, we are not able to explicitly determine the marginal cost difference between equipment certified by a third party and those without third party certification. Additionally, the list of equipment present in these locations, and required to be third party certified, is diverse. For example, one equipment list obtained by the Coast Guard contained equipment which ranged in complexity from a fluorescent light to elements of the tank temperature monitoring system.

While the cost estimation is obtuse, it is not insurmountable. We have several elements which should allow us to construct a range for the final rule's associated costs. On the high end of the range, we have the cost to replace all of the electrical installations in a representative vessel. While not specifically applicable to a newly built vessel, it is

an appropriate estimate of the costs associated with replacement of electrical installations in hazardous areas. This estimate contains the costs associated with replacement of both the equipment and the certification on a US flagged vessel, which are already subject to the certification requirements in this final rule.

The \$500,000 cost quote <sup>4</sup>for replacement of the equipment appropriate for a hazardous location on a vessel is useful as a cost ceiling. The replacement cost for this equipment, contains that which is associated with the third party certification, in addition to the price of the equipment itself. This functions well as a price ceiling as we can be sure that the marginal cost of third party certification will fall below this point estimate, as it is not likely to be above the full cost of the equipment with its associated certification.

The cost floor is a function of costs potentially accrued to a hypothetical vessel to be built in the future. In some cases these vessels would be built to the certification specifications contained in this final rule anyway, in which case they would accrue no additional costs from this rule. However, due to the probable greater cost of third-party-certified equipment, we can assume that, without this rulemaking, some equipment would be installed without third party certification. Table 3 presents the range.

**Table 3: Cost Range**

Low – Cost Floor	Average	High – Cost Ceiling
\$0	\$250,000	\$500,000

**Affected Population**

The Coast Guard-maintained MISLE database, contains records of all applicable vessels operating on the OCS in pursuit of OCS activities. Historic data extracted from this database is presented below in Table 4.

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<sup>4</sup>Regulatory Advisor – ExxonMobil, 8/14/2012

**Table 4: MISLE Historic Data**

<b>Build Year</b>	<b>Frequency</b>
<b>2004</b>	0
<b>2005</b>	1
<b>2006</b>	0
<b>2007</b>	0
<b>2008</b>	2
<b>2009</b>	4
<b>2010</b>	3
<b>2011</b>	2
<b>2012</b>	2
<b>2013</b>	3
<b>Total</b>	<b>17</b>
<b>Average</b>	<b>2*</b>

\*Rounded

Over the past 10 years, 17 foreign vessels have been built which would fall under this rule’s application. The database was filtered to include foreign vessels, those vessel classes which would potentially be on the OCS in pursuit of OCS activities, and have build years within the past decade. Evaluation of this data found that on average, 2 foreign vessels are built per year which could seek entrance to the US OCS in pursuit of OCS activities.

Therefore, the range of costs associated with this rulemaking will fall between \$0 (2 Vessels \* \$0) and \$1,000,000 (2 vessels \* \$500,000) per year with an average per year cost of \$500,000 (2 vessels \* \$250,000).

	<b>Low – Cost Floor</b>	<b>Average</b>	<b>High – Cost Ceiling</b>
<b>Cost Estimate</b>	\$0	\$500,000	\$1,000,000

**NPRM vs Final Rule**

Burden estimates in the NPRM were \$800,000 per year. With the changes that the final rule makes to the affected population, the yearly costs have been reduced, by an estimation that is upwards of 37%.

$$\frac{\$500,000 - \$800,000}{\$800,000} = -0.375$$

### Benefits

We are unable to monetize benefits. We can find no casualties that would have been prevented by these regulations. However, third-party testing and certification for critical equipment, such as electrical equipment intended for use in hazardous locations, addresses a potentially catastrophic hazard consisting of an explosive gas or vapor combined with an electrical ignition source, and is generally understood by industry as an appropriate measure that enhances safety and protects life, the environment, and property.

### Alternatives

We considered five alternatives when evaluating the effects of this final rule. The first, abstaining from action, was rejected because it allows a regulatory imbalance and a potential safety gap to exist between foreign vessels and U.S. vessels operating on the OCS.

The second alternative we considered was to require both U.S. and foreign vessels and facilities to adhere to the existing international standards. This alternative was deemed insufficient because compliance with international standards, such as the 2009 IMO Code, is subject to the interpretation of the applicable flag administration. An example of an undesired consequence of this alternative would be the acceptance of ATEX certified equipment. The Coast Guard, however, will not accept ATEX certifications because evidence of full testing to the applicable harmonized 60079 series of standards by an independent third-party laboratory is not guaranteed. Consistent with preexisting Coast Guard practices, third-party testing and certification for critical equipment is generally required.

The third alternative we considered was to require foreign vessels and floating facilities to meet current U.S. standards. This alternative was not selected because we believe that requiring compliance with U.S. standards is unnecessary when there are comparable international standards acceptable to the Coast Guard. Because these latest editions of internationally recognized standards for explosion protection offer owners and operators greater flexibility, while also avoiding the costs of coastal state-specific requirements, we are expanding the list of international explosion protection standards deemed acceptable.

The fourth alternative, implementing the regulations in this final rule, puts in place a regulatory regime that will allow for both the U.S., as the coastal state, and industry to be confident in the certification and assessment of electrical equipment intended for use in hazardous locations. This will be achieved through the use of the most current, internationally recognized standards for explosion protection and independent third-party certification. The regulations in this final rule expand the list of national and international explosion protection standards deemed acceptable for U.S. operators.

A fifth and final alternative is that which was presented to the public in the NPRM. This alternative included the application of the NPRM regulations to existing vessels before those vessels engaged in OCS activities for the first time. This alternative would have included foreign vessels currently under contract or construction. We determined that this alternative would force an undue burden on the industry due primarily to the cost effects. Industry's comments to the docket suggest that the compliance cost per vessel could be cost prohibitive. With current estimates of 219

foreign MODUs in some stage of construction, the cost of this alternative could have potentially outpaced its benefits.

#### B. Small Entities

Under the Regulatory Flexibility Act, 5 U.S.C. 601-612, we have considered whether this rule will have a significant economic impact on a substantial number of small entities. The term “small entities” comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

We do not anticipate any effect on small entities. As noted in the previous discussion, there is no anticipated cost burden placed on U.S. entities by this rule and, as such, we do not anticipate any effect on small entities that would be addressed by this section. 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 offered to assist small entities in understanding this rule so that they could 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.

E. Federalism

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on the 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 that Order and have determined that it is consistent with the fundamental principles and preemption requirements described in Executive Order 13132. Our analysis is explained below.

It is well settled that States may not regulate in categories reserved for exclusive regulation by the Coast Guard. It is also well settled that all of the categories for inspected vessels 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 fields foreclosed from regulation by the States. (See the decision of the Supreme Court in the consolidated cases of United States v. Locke and Intertanko v. Locke, 529 U.S. 89, 120 S.Ct. 1135 (March 6, 2000).) This final rule regulates electrical equipment standards on inspected vessels. As such, States may not regulate within this

category. Therefore, the 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. Though this rule will not result in such an 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 E.O. 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 E.O. 12988, (“Civil Justice Reform”), to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this rule under E.O. 13045 (“Protection of Children from Environmental Health Risks and Safety Risks”). This rule is not an economically significant rule and would 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 E.O. 13175 (“Consultation and Coordination with Indian Tribal Governments”), because it would 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 E.O. 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 E.O. 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 would 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 uses the following voluntary consensus standards:

- ANSI/ISA-12.12.01-2012 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, approved 9 July 2012 (“ANSI/ISA 12.12.01”)
- ANSI/ISA-60079-18 - --explosive atmospheres – Part 18: Equipment protection by encapsulation “m”, Third Edition, approved 14 September 2012 (“ANSI/ISA 60079-18 (2012)”)
- UL 674 – Standard for Safety: Electric Motors and Generators for Use in Hazardous (Classified) Locations, Fifth Edition, dated May 31, 2011 (with revisions through July 19, 2013) (“ANSI/UL 674 (2013)”)
- UL 823 - Electric Heaters for Use in Hazardous (Classified) Locations, Ninth Edition including revisions through November 15, 2007 (dated October 20, 2006) (“ANSI/UL 823”)
- UL 844 - Electric Lighting Fixtures for Use in Hazardous (Classified) Locations, Thirteenth Edition, dated June 29, 2012 (“ANSI/UL 844 (2012)”)
- UL 913 - Standard for Safety: Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II and III, Division 1, Hazardous Locations, Seventh Edition, Dated July 31, 2006 (including revisions through June 3, 2010) (“ANSI/UL 913”)
- UL 1203 - Explosion-proof and Dust-ignition Proof Electrical Equipment for use in Hazardous (Classified) Locations, Fourth Edition, Dated September 15, 2006 (including revisions through October 28, 2009) (“ANSI/UL 1203”)

- UL 2225 – Standard for Safety: Cables and Cable-Fittings for use in Hazardous (Classified) Locations, Third Edition, dated February 25, 2011 (“ANSI/UL 2225 (2011)”)
- ASTM F2876–10 - Standard Practice for Thermal Rating and Installation of Internal Combustion Engine Packages for use in Hazardous Locations in Marine Applications, approved November 1, 2010 (“ASTM F2876-10”)
- CSA C22.2 No. 30-M1986 - Explosion-Proof Enclosures for Use in Class I Hazardous Locations, Reaffirmed 2007 (“CSA C22.2 No. 30-M1986”)
- CSA C22.2 No. 213-M1987 - Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations, Reaffirmed 2008 (“CSA C22.2 No. 213-M1987”)
- CAN/CSA-C22.2 No. 0-M91 - General Requirements - Canadian Electrical Code, Part II, Reaffirmed 2006 (“CSA C22.2 No. 0-M91”)
- CAN/CSA-C22.2 No. 157-92 - Intrinsically Safe and Non-incendive Equipment for Use in Hazardous Locations, Reaffirmed 2006 (“CSA C22.2 No. 157-92”)
- FM Approvals Class Number 3600 - Approval Standard for Electric Equipment for use in Hazardous (Classified) Locations General Requirements, November 1998 (“FM Approvals Class Number 3600”)
- FM Approvals Class Number 3610 - Approval Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations, January 2010 (“FM Approvals Class Number 3610”)

- FM Approvals Class Number 3611 - Approval Standard for Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2, Hazardous (Classified) Locations, December 2004 (“FM Approvals Class Number 3611”)
- FM Approvals Class Number 3615 - Approval Standard for Explosionproof Electrical Equipment General Requirements, August 2006 (“FM Approvals Class Number 3615”)
- FM Approvals Class Number 3620 - Approval Standard for Purged and Pressurized Electrical Equipment for Hazardous (Classified) Locations, August 2000 (“FM Approvals Class Number 3620”)
- IEC 60079-1:2007 - Explosive atmospheres-Part 1: Equipment protection by flameproof enclosures “d”, Sixth edition, 2007-04
- IEC 60079-2:2007 - Explosive atmospheres-Part 2: Equipment protection by pressurized enclosures “p”, Fifth edition, 2007-02
- IEC 60079-5:2007 - Explosive atmospheres-Part 5: Equipment protection by powder filling “q”, Third edition, 2007-03
- IEC 60079-6:2007 - Explosive atmospheres-Part 6: Equipment protection by oil immersion “o”, Third edition, 2007-03
- IEC 60079-7:2006 - Explosive atmospheres-Part 7: Equipment protection by increased safety “e”, Fourth edition, 2006-07
- IEC 60079-11:2011 - Explosive atmospheres-Part 11: Equipment protection by intrinsic safety “i”, Edition 6.0, 2011-06

- IEC 60079-13:2010 - Explosive atmospheres - Part 13: Equipment protection by pressurized room "p", Edition 1.0, 2010-10
- IEC 60079-15:2010 - Explosive atmospheres-Part 15: Equipment protection by type of protection "n", Edition 4.0, 2010-01
- IEC 60079-18:2009 - Explosive atmospheres-Part 18: Equipment protection by encapsulation "m", Edition 3.0, 2009-05
- IEC 60079-25:2010 - Explosive atmospheres-Part 25: Intrinsically safe electrical systems, Edition 2.0, 2010-02
- IEC 60092-502:1999 - Electrical installations in ships – Part 502: Tankers – Special features, Fifth edition, 1999-02
- IEC 61892-7:2007 - Mobile and fixed offshore units – Electrical installations – Part 7: Hazardous areas, Edition 2.0, 2007-11
- NFPA 70 - National Electrical Code, 2011 Edition (“NFPA 70”)
- NFPA 496 - Standard for Purged and Pressurized Enclosures for Electrical Equipment, 2013 Edition (“NFPA 496 (2013)”)
- UL 1604 –Electrical Equipment for use in Class I and II, Division 2 and Class III Hazardous (Classified) Locations, Third Edition, Dated April 28, 1994 (including revisions through February 5, 2004) (“UL 1604”)

The sections that reference these standards and the locations where these standards are available are listed in 46 CFR 110.10-1.

This rule also uses technical standards other than voluntary consensus standards.

- IMO Resolution A.1023(26), Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009, 19 January 2010 (“2009 IMO MODU Code”)

The section that references this standard and the locations where this standard is available are listed in 46 CFR 110.10-1.

#### M. Environment

We have analyzed this final rule under Department of Homeland Security Management Directive 023-01 and Commandant Instruction M16475.ID, which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA)(42 U.S.C. 4321-4370f), and have concluded that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This final rule is categorically excluded under section 2.B.2, figure 2-1, paragraphs (34)(a), (d) and (e) of the Instruction and under section 6 (a) of the “Appendix to National Environmental Policy Act: Coast Guard Procedures for Categorical Exclusions, Notice of Final Agency Policy” (67 FR 48244, July 23, 2002).” This final rule involves regulations which are editorial and concern inspection and equipping of vessels and regulations concerning vessel operation safety standards. An environmental analysis checklist and a categorical exclusion determination are available in the docket where indicated under ADDRESSES.

#### List of Subjects

##### 33 CFR Part 140

Continental shelf, Investigations, Marine safety, Occupational safety and health, Penalties, Reporting and recordkeeping requirements.

##### 33 CFR Part 143

Continental shelf, Marine safety, Occupational safety and health, Vessels.

##### 46 CFR Part 110

Reporting and recordkeeping requirements, Vessels, Incorporation by reference.

46 CFR Part 111

Vessels.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR parts 140 and 143 and 46 CFR parts 110 and 111 as follows:

**TITLE 33 - NAVIGATION AND NAVIGABLE WATERS**

**CHAPTER I--COAST GUARD, DEPARTMENT OF HOMELAND SECURITY**

**SUBCHAPTER N--OUTER CONTINENTAL SHELF ACTIVITIES**

**PART 140 - GENERAL**

1. The authority citation for part 140 continues to read as follows:

Authority: 43 U.S.C. 1333, 1348, 1350, 1356; Department of Homeland Security Delegation No.0170.1.

2. Amend § 140.10 by adding a definition for “Constructed” in alphabetical order to read as follows:

§140.10 Definitions.

\* \* \* \* \*

Constructed means the date—

(1) The vessel’s keel was laid; or

(2) Construction identifiable with the vessel or facility began and assembly of that vessel or facility commenced comprising of 50 metric tons or at least 1 percent of the estimated mass of all structural material, whichever is less.

\* \* \* \* \*

**PART 143 – DESIGN AND EQUIPMENT**

3. The authority citation for part 143 continues to read as follows:

Authority: 43 U.S.C. 1333(d)(1), 1348(c), 1356; 49 CFR 1.46; section 143.210 is also issued under 14 U.S.C. 664 and 31 U.S.C. 9701.

4. Amend § 143.120 by adding paragraphs (d) to read as follows:

§ 143.120 Floating OCS facilities.

\* \* \* \* \*

(d) Each floating OCS facility that is constructed after April 2, 2018 must comply with the requirements of 46 CFR subpart 111.108 prior to engaging in OCS activities.

5. Add § 143.208 to read as follows:

§ 143.208 Hazardous location requirements on foreign MODUs.

Each mobile offshore drilling unit that is documented under the laws of a foreign nation and is constructed after April 2, 2018 must comply with the requirements of 46 CFR subpart 111.108 prior to engaging in OCS activities.

6. Add § 143.302 to read as follows:

§ 143.302 Hazardous location requirements on foreign vessels engaged in OCS activities.

Each vessel that is documented under the laws of a foreign nation and is constructed after April 2, 2018 must comply with the requirements of 46 CFR subpart 111.108 prior to engaging in OCS activities.

**TITLE 46--Shipping**

**CHAPTER I--COAST GUARD, DEPARTMENT OF HOMELAND SECURITY**

**SUBCHAPTER J--ELECTRICAL ENGINEERING**

**PART 110 - GENERAL PROVISIONS**

7. The authority citation for part 110 continues to read as follows:

Authority: 33 U.S.C. 1509; 43 U.S.C 1333; 46 U.S.C. 3306, 3307, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1; §110.01–2 also issued under 44 U.S.C. 3507. Sections 110.15-1 and 110.25-1 also issued under sec. 617, Pub. L. 111-281, 124 Stat. 2905.

8. Revise § 110.10-1 to read as follows:

§ 110.10-1 Incorporation by reference.

(a) Certain material is incorporated by reference into this subchapter 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. The word “should,” when used in material incorporated by reference, is to be construed the same as the words “must” or “shall” for the purposes of this subchapter. All approved material is available for inspection at the U.S. Coast Guard, Office of Design and Engineering Standards (CG–ENG), 2703 Martin Luther King Jr Ave, SE., Stop 7418, Washington, DC 20593–7418, and is available from the sources listed below. It is also 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

(b) *American Bureau of Shipping (ABS)*, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060, 281-877-5800, <http://www.eagle.org>.

(1) Rules for Building and Classing Steel Vessels, Part 4 Vessel Systems and Machinery, 2003 (“ABS Steel Vessel Rules”), IBR approved for §§ 110.15-1, 111.01-9, 111.12-3, 111.12-5, 111.12-7, 111.33-11, 111.35-1, 111.70-1, 111.105-31, 111.105-39, 111.105-40, and 113.05-7 of this chapter.

(2) Rules for Building and Classing Mobile Offshore Drilling Units, Part 4 Machinery and Systems, 2001 (“ABS MODU Rules”), IBR approved for §§ 111.12-1, 111.12-3, 111.12-5, 111.12-7, 111.33-11, 111.35-1, and 111.70-1 of this chapter.

(c) *American National Standards Institute (ANSI)*, 25 West 43rd Street, New York, NY 10036, 212-642-4900, <http://www.ansi.org/>.

(1) ANSI/IEEE C37.12-1991 - American National Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis-Specifications Guide, 1991 (“ANSI/IEEE C37.12”), IBR approved for § 111.54-1 of this chapter.

(2) ANSI/IEEE C37.27-1987 (IEEE Std 331) - Application Guide for Low-Voltage AC Nonintegrally Fused Power Circuitbreakers (Using Separately Mounted Current-Limiting Fuses), 1987 (“ANSI/IEEE C37.27”), IBR approved for § 111.54-1 of this chapter.

(3) ANSI/ISA 12.12.01-2012 - Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class II, Divisions 1 and 2 Hazardous (Classified) Locations, approved 9 July 2012 (“ANSI/ISA 12.12.01”), IBR approved for § 111.108-3(b) of this chapter.

(4) ANSI/ISA-60079-18 - Electrical Apparatus for Use in Class I, Zone 1 Hazardous (Classified) Locations: Type of Protection - Encapsulation “m”, approved July 31, 2009 (“ANSI/ISA 60079-18”), IBR approved for § 111.106-3(d) of this chapter.

(5) ANSI/ISA-60079-18 - Explosive atmospheres – Part 18: Equipment protection by encapsulation “m”, Third Edition, approved 14 September, 2012 (“ANSI/ISA 60079-18 (2012)”), IBR approved for § 111.108-3(e) of this chapter.

(d) American Petroleum Institute (API), Order Desk, 1220 L Street, NW., Washington, DC 20005-4070, 202-682-8000, <http://www.api.org>.

(1) API RP 500 - Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2, Second Edition, November 1997, reaffirmed in 2002 (“API RP 500”), IBR approved for §§ 111.106-7(a) and 111.106-13(b) of this chapter.

(2) API RP 505 - Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2, First Edition, approved January 7, 1998 (dated November 1997), reaffirmed 2002 (“API RP 505”), IBR approved for §§ 111.106-7(a) and 111.106-13(b) of this chapter.

(e) ASME, Three Park Avenue, New York, NY 10016-5990, 800-843-2763, <http://www.asme.org>.

(1) ASME A17.1-2000 Part 2 Electric Elevators, 2000 (“ASME A17.1”), IBR approved for § 111.91-1 of this chapter.

(2) [Reserved]

(f) *ASTM International (ASTM)*, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, 610-832-9500, <http://www.astm.org>.

(1) ASTM B 117-97, Standard Practice for Operating Salt Spray (Fog) Apparatus, (“ASTM B 117”), IBR approved for § 110.15-1 of this chapter.

(2) ASTM F2876–10 - Standard Practice for Thermal Rating and Installation of Internal Combustion Engine Packages for use in Hazardous Locations in Marine Applications, approved November 1, 2010 (“ASTM F2876-10”), IBR approved for §§ 111.106-3(h) and 111.108-3(g) of this chapter.

(g) *Canadian Standards Association (CSA)*, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, L4W 5N6, Canada, 800-463-6727, <http://www.csa.ca/>.

(1) CSA C22.2 No. 30-M1986 - Explosion-Proof Enclosures for Use in Class I Hazardous Locations, Reaffirmed 2007 (“CSA C22.2 No. 30-M1986”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(2) CSA C22.2 No. 213-M1987 - Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations, Reaffirmed 2008 (“CSA C22.2 No. 213-M1987”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(3) CAN/CSA-C22.2 No. 0-M91 - General Requirements - Canadian Electrical Code, Part II, Reaffirmed 2006 (“CSA C22.2 No. 0-M91”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(4) CAN/CSA-C22.2 No. 157-92 - Intrinsically Safe and Non-incendive Equipment for Use in Hazardous Locations, Reaffirmed 2006 (“CSA C22.2 No. 157-92”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(h) DLA Document Services, Department of Defense, Single Stock Point, 700 Robbins Avenue, Philadelphia, PA 19111, 215-697-6396, <http://www.assistdocs.com>.

(1) MIL-C-24640A - Military Specification Cables, Light Weight, Electric, Low Smoke, for Shipboard Use, General Specification for (1995) Supplement 1, June 26, 1995 (“NPFC MIL-C-24640A”), IBR approved for §§ 111.60-1 and 111.60-3 of this chapter.

(2) MIL-C-24643A - Military Specification Cables and Cords, Electric, Low Smoke, for Shipboard Use, General Specification for (1996), Amendment 2, March 13, 1996 (“MIL-C-24643A”), IBR approved for §§ 111.60-1 and 111.60-3 of this chapter.

(3) MIL-DTL-24640C with Supplement 1 - Detail Specification Cables, Lightweight, Low Smoke, Electric, for Shipboard Use, General Specification for, November 18, 2011 (“MIL-DTL-24640C”), IBR approved for § 111.106-5(a) of this chapter.

(4) MIL-DTL-24643C with Supplement 1A - Detail Specification Cables, Electric, Low Smoke Halogen-Free, for Shipboard Use, General Specification for, December 13, 2011 (dated October 1, 2009) (“MIL-DTL-24643C”), IBR approved for § 111.106-5(a) of this chapter.

(5) MIL-W-76D - Military Specification Wire and Cable, Hook-Up, Electrical, Insulated, General Specification for (2003) Amendment 1–2003, February 6, 2003 (“NPFC MIL-W-76D”), IBR approved for § 111.60–11 of this chapter.

(i) FM Approvals, P.O. Box 9102, Norwood, MA 02062, 781-440-8000, <http://www.fmglobal.com>.

(1) Class Number 3600 - Approval Standard for Electric Equipment for use in Hazardous (Classified) Locations General Requirements, November 1998 (“FM Approvals Class Number 3600”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(2) Class Number 3610 - Approval Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations, January 2010 (“FM Approvals Class Number 3610”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(3) Class Number 3611 - Approval Standard for Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2,

Hazardous (Classified) Locations, December 2004 (“FM Approvals Class Number 3611”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(4) Class Number 3615 - Approval Standard for Explosionproof Electrical Equipment General Requirements, August 2006 (“FM Approvals Class Number 3615”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(5) Class Number 3620 - Approval Standard for Purged and Pressurized Electrical Equipment for Hazardous (Classified) Locations, August 2000 (“FM Approvals Class Number 3620”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(j) *Institute of Electrical and Electronic Engineers (IEEE)*, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854, 732-981-0060, <http://www.ieee.org/>.

(1) IEEE Std C37.04-1999 - IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers, 1999 (“IEEE C37.04”), IBR approved for § 111.54-1 of this chapter.

(2) IEEE Std C37.010-1999 - IEEE Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis, 1999 (“IEEE C37.010”), IBR approved for § 111.54-1 of this chapter.

(3) IEEE Std C37.13-1990 - IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures, October 22, 1990 (“IEEE C37.13”), IBR approved for § 111.54-1 of this chapter.

(4) IEEE Std C37.14-2002 - IEEE Standard for Low-Voltage DC Power Circuit Breakers Used in Enclosures, April 25, 2003 (“IEEE C37.14”), IBR approved for § 111.54-1 of this chapter.

(5) IEEE Std 45-1998 - IEEE Recommended Practice for Electric Installations on Shipboard, October 19, 1998 (“IEEE 45-1998”), IBR approved for §§ 111.30-19, 111.105-3, 111.105-31, and 111.105-41 of this chapter.

(6) IEEE Std 45-2002 - IEEE Recommended Practice for Electrical Installations On Shipboard, October 11, 2002 (“IEEE 45-2002”), IBR approved for §§ 111.05-7, 111.15-2, 111.30-1, 111.30-5, 111.33-3, 111.33-5, 111.40-1, 111.60-1, 111.60-3, 111.60-5, 111.60-11, 111.60-13, 111.60-19, 111.60-21, 111.60-23, 111.75-5, and 113.65-5 of this chapter.

(7) IEEE 100 - The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition, 2000 (“IEEE 100”), IBR approved for § 110.15-1.

(8) IEEE Std 1202–1991 - IEEE Standard for Flame Testing of Cables for Use in Cable Tray in Industrial and Commercial Occupancies, 1991 (“IEEE 1202”), IBR approved for §§ 111.60–6 and 111.107–1 of this chapter.

(9) IEEE Std 1580–2001 - IEEE Recommended Practice for Marine Cable for Use on Shipboard and Fixed or Floating Platforms, December 17, 2001 (“IEEE 1580”), IBR approved for §§ 111.60–1, 111.60–2, 111.60–3 and 111.106-5(a) of this chapter.

(k) *International Electrotechnical Commission (IEC)*, 3 Rue de Varembe, Geneva, Switzerland, +41 22 919 02 11, <http://www.iec.ch/>.

(1) IEC 60068-2-52 - Environmental Testing Part 2: Tests—Test Kb: Salt Mist, Cyclic (Sodium Chloride Solution), Second Edition, 1996 (“IEC 68-2-52”), IBR approved for § 110.15-1.

(2) IEC 60079-0 - Electrical apparatus for Explosive Gas Atmospheres—Part 0: General Requirements, Edition 3.1, 2000 (“IEC 60079-0”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, and 111.105-17 of this chapter.

(3) IEC 60079-1 - Electrical Apparatus for Explosive Gas Atmospheres—Part 1: Flameproof Enclosures “d” including corr.1, Fourth Edition, June 2001 (“IEC 60079-1”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-9, and 111.105-17 of this chapter.

(4) IEC 60079-1:2007 - Explosive atmospheres-Part 1: Equipment protection by flameproof enclosures “d”, Sixth edition, 2007-04, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(5) IEC 60079-2 Electrical Apparatus for Explosive Gas Atmospheres—Part 2: Pressurized Enclosures “p”, Fourth Edition, 2001 (“IEC 60079-2”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, and 111.105-17 of this chapter.

(6) IEC 60079-2:2007 - Explosive atmospheres-Part 2: Equipment protection by pressurized enclosures “p”, Fifth edition, 2007-02, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(7) IEC 60079-5 - Electrical Apparatus for Explosive Gas Atmospheres—Part 5: Powder Filling “q”, Second Edition, 1997 (“IEC 60079-5”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-15, and 111.105-17 of this chapter.

(8) IEC 60079-5:2007 - Explosive atmospheres-Part 5: Equipment protection by powder filling “q”, Third edition, 2007-03, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(9) IEC 60079-6 - Electrical Apparatus for Explosive Gas Atmospheres—Part 6: Oil Immersion “o”, Second Edition, 1995 (“IEC 60079-6”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-15, and 111.105-17 of this chapter.

(10) IEC 60079-6:2007 - Explosive atmospheres-Part 6: Equipment protection by oil immersion “o”, Third edition, 2007-03, IBR approved for § 111.108-3(b) of this chapter.

(11) IEC 60079-7 - Electrical Apparatus for Explosive Gas Atmospheres—Part 7: Increased Safety “e”, Third Edition, 2001 (“IEC 60079-7”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-15, and 111.105-17 of this chapter.

(12) IEC 60079-7:2006 - Explosive atmospheres-Part 7: Equipment protection by increased safety “e”, Fourth edition, 2006-07, IBR approved for § 111.106-3(b) of this chapter.

(13) IEC 60079-11 - Electrical Apparatus for Explosive Gas Atmospheres—Part 11: Intrinsic Safety “i”, Fourth Edition, 1999 (“IEC 60079-11”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-11, and 111.105-17 of this chapter.

(14) IEC 60079-11:2006 - Explosive atmospheres-Part 11: Equipment protection by intrinsic safety “i”, Fifth edition, 2006-07, IBR approved for § 111.106-3(b) of this chapter.

(15) IEC 60079-11:2011 - Explosive atmospheres-Part 11: Equipment protection by intrinsic safety “i”, Edition 6.0, 2011-06, IBR approved for § 111.108-3(b) of this chapter.

(16) IEC 60079-13:2010 - Explosive atmospheres - Part 13: Equipment protection by pressurized room "p", Edition 1.0, 2010-10, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(17) IEC 60079-15 - Electrical Apparatus for Explosive Gas Atmospheres—Part 15: Type of Protection “n”, Second Edition, 2001 (“IEC 60079-15”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-15, and 111.105-17 of this chapter.

(18) IEC 60079-15:2010 - Explosive atmospheres-Part 15: Equipment protection by type of protection “n”, Edition 4.0, 2010-01, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(19) IEC 60079-18 - Electrical Apparatus for Explosive Gas Atmospheres—Part 18: Encapsulation “m”, First Edition, 1992 (“IEC 60079-18”), IBR approved for §§ 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-15, and 111.105-17 of this chapter.

(20) IEC 60079-18:2009 - Explosive atmospheres-Part 18: Equipment protection by encapsulation “m”, Edition 3.0, 2009-05, IBR approved for §§ 111.106-3(b), 111.106-3(d), and 111.108-3(b) and (e) of this chapter.

(21) IEC 60079-25:2010 - Explosive atmospheres-Part 25: Intrinsically safe electrical systems, Edition 2.0, 2010-02, IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(22) IEC 60092-101 - Electrical Installation in Ships, Part 101: Definitions and General Requirements, Edition 4.1, 2002 (“IEC 60092-101”), IBR approved for §§ 110.15-1 and 111.81-1 of this chapter.

(23) IEC 60092-201 - Electrical Installation in Ships, Part 201: System Design-General, Fourth Edition, 1994 (“IEC 60092-201”), IBR approved for §§ 111.70-3 and 111.81-1 of this chapter.

(24) IEC 60092-202 - Amendment 1 Electrical Installation in Ships, Part 202: System Design-Protection, 1996 (“IEC 60092-202”), IBR approved for §§ 111.12-7, 111.50-3, 111.53-1, and 111.54-1 of this chapter.

(25) IEC 60092-301 - Amendment 2 Electrical Installation in Ships, Part 301: Equipment-Generators and Motors, 1995 (“IEC 60092-301”), IBR approved for §§ 111.12-7, 111.25-5, and 111.70-1 of this chapter.

(26) IEC 60092-302 - Electrical Installation in Ships, Part 302: Low-Voltage Switchgear and Control Gear Assemblies, Fourth Edition, 1997 (“IEC 60092-302”), IBR approved for §§ 111.30-1, 111.30-5, and 111.30-19 of this chapter.

(27) IEC 60092-303 - Electrical Installation in Ships, Part 303: Equipment-Transformers for Power and Lighting, Third Edition, 1980 (“IEC 60092-303”), IBR approved for § 111.20-15 of this chapter.

(28) IEC 60092-304 - Amendment 1 Electrical Installation in Ships, Part 304: Equipment-Semiconductor Convertors, 1995 (“IEC 60092-304”), IBR approved for §§ 111.33-3 and 111.33-5 of this chapter.

(29) IEC 60092-306 - Electrical Installation in Ships, Part 306: Equipment-Luminaries and accessories, Third Edition, 1980 (“IEC 60092-306”), IBR approved for §§ 111.75-20 and 111.81-1 of this chapter.

(30) IEC 60092-350:2008 - Electrical installations in ships – Part 350: General construction and test methods of power, control and instrumentation cables for shipboard

and offshore applications, Edition 3.0, 2008-02, IBR approved for § 111.106-5(a) of this chapter.

(31) IEC 60092-352 - Electrical Installation in Ships—Choice and Installation of Cables for Low-Voltage Power Systems, Second Edition, 1997 (“IEC 60092-352”), IBR approved for §§ 111.60-3, 111.60-5, and 111.81-1 of this chapter.

(32) IEC 60092-353 - Electrical Installations in Ships—Part 353: Single and Multicore Non-Radial Field Power Cables with Extruded Solid Insulation for Rated Voltages 1kV and 3kV, Second Edition, 1995 (“IEC 60092-353”), IBR approved for §§ 111.60-1, 111.60-3, and 111.60-5 of this chapter.

(33) IEC 60092-353:2011 - Electrical installations in ships - Part 353: Power cables for rated voltages 1 kV and 3 kV, Edition 3.0, 2011-08, IBR approved for § 111.106-5(a) of this chapter.

(34) IEC 60092-401 - Electrical Installations in Ships, Part 401: Installation and Test of completed Installation with amendment 1 (1987) and amendment 2 (1997), Third Edition, 1980 (“IEC 60092-401”), IBR approved for §§ 111.05-9 and 111.81-1 of this chapter.

(35) IEC 60092-502 - Electrical installations in ships – Part 502: Tankers – Special features, Fifth edition, 1999-02 (“IEC 60092-502”), IBR approved for §§ 111.81-1, 111.105-31, 111.106-3(b), 111.106-5(c), 111.106-15(a), and 111.108-3(b) of this chapter.

(36) IEC 60092-503 - Electrical installations in ships, Part 503: Special features: A.C. supply systems with voltages in the range of above 1kV up to and including 11kV, First Edition, 1975 (“IEC 60092-503”), IBR approved for § 111.30-5 of this chapter.

(37) IEC 60331-11 - Tests for electric cables under fire conditions—Circuit integrity—Part 11: Apparatus—Fire alone at a flame temperature of at least 750 °C, First Edition, 1999 (“IEC 60331-11”), IBR approved for § 113.30-25 of this chapter.

(38) IEC 60331-21 - Tests for Electric Cables Under Fire Conditions—Circuit Integrity—Part 21: Procedures and Requirements—Cables of Rated Voltage up to and Including 0.6/1.0kV, First Edition, 1999 (“IEC 60331-21”), IBR approved for § 113.30-25 of this chapter.

(39) IEC 60332-1 - Tests on Electric Cables Under Fire Conditions, Part 1: Test on a Single Vertical Insulated Wire or Cable, Third Edition, 1993 (“IEC 60332-1”), IBR approved for § 111.30-19 of this chapter.

(40) IEC 60332-3-22 - Tests on Electric Cables Under Fire Conditions—Part 3-22: Test for Vertical Flame Spread of Vertically-Mounted Bunched Wires or Cables—Category A, First Edition, 2000 (“IEC 60332-3-22”), IBR approved for §§ 111.60-1, 111.60-2, 111.60-6, and 111.107-1 of this chapter.

(41) IEC 60529 - Degrees of Protection Provided by Enclosures (IP Code), Edition 2.1, 2001 (“IEC 60529”), IBR approved for §§ 110.15-1, 111.01-9, 113.10-7, 113.20-3, 113.25-11, 113.30-25, 113.37-10, 113.40-10, and 113.50-5 of this chapter.

(42) IEC 60533 - Electrical and Electronic Installations in Ships—Electromagnetic Compatibility, Second Edition, 1999 (“IEC 60533”), IBR approved for § 113.05-7 of this chapter.

(43) IEC 60947-2 - Low-Voltage Switchgear and Controlgear Part 2: Circuit-Breakers, Third Edition, 2003 (“IEC 60947-2”), IBR approved for § 111.54-1 of this chapter.

(44) IEC 61363-1 - Electrical Installations of Ships and Mobile and Fixed Offshore Units—Part 1: Procedures for Calculating Short-Circuit Currents in Three-Phase a.c., First Edition, 1998 (“IEC 61363-1”), IBR approved for § 111.52-5 of this chapter.

(45) IEC 61892-7:2007 - Mobile and fixed offshore units – Electrical installations – Part 7: Hazardous areas, Edition 2.0, 2007-11, IBR approved for § 111.108-3(b) of this chapter.

(46) IEC 62271-100 - High-voltage switchgear and controlgear—part 100: High-voltage alternating current circuitbreakers, Edition 1.1, 2003 (“IEC 62271-100”), IBR approved for § 111.54-1 of this chapter.

(1) *International Maritime Organization (IMO Publications Section)*, 4 Albert Embankment, London SE1 7SR, United Kingdom, +44 (0) 20 7735 7611, <http://www.imo.org>.

(1) International Convention for the Safety of Life at Sea (SOLAS), Consolidated Text of the International Convention for the Safety of Life at Sea, 1974, and its Protocol of 1988: Article, Annexes and Certificates. (Incorporating all Amendments in Effect from January 2001), 2001 (“IMO SOLAS 74”), IBR approved for §§ 111.99-5, 111.105-31, 112.15-1, and 113.25-6 of this chapter.

(2) IMO Resolution A.1023(26) - Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009, 18 January 2010 (“2009 IMO MODU Code”), IBR approved for § 111.108-3(b) of this chapter.

(m) *International Society of Automation (ISA)*, 67 T.W. Alexander Drive, PO Box 12277, Research Triangle Park, NC 27709, 919-549-8411, <http://www.isa.org/>.

(1) RP 12.6 - Wiring Practices for Hazardous (Classified) Locations

Instrumentation Part I: Intrinsic Safety, 1995 (“ISA RP 12.6”), IBR approved for § 111.105-11 of this chapter.

(2) [Reserved]

(n) *Lloyd's Register*, 71 Fenchurch Street, London EC3M 4BS, UK, +44-0-20-7709-9166, <http://www.lr.org/>.

(1) Type Approval System-Test Specification Number 1, 2002, IBR approved for § 113.05-7 of this chapter.

(2) [Reserved]

(o) *National Electrical Manufacturers Association (NEMA)*, 1300 North 17th Street, Arlington, VA 22209, 703-841-3200, <http://www.nema.org/>.

(1) NEMA Standards Publication ICS 2-2000 - Industrial Control and Systems Controllers, Contactors, and Overload Relays, Rated 600 Volts, 2000 (“NEMA ICS 2”), IBR approved for § 111.70-3 of this chapter.

(2) NEMA Standards Publication ICS 2.3-1995 - Instructions for the Handling, Installation, Operation, and Maintenance of Motor Control Centers Rated not More Than 600 Volts, 1995 (“NEMA ICS 2.3”), IBR approved for § 111.70-3 of this chapter.

(3) NEMA Standards Publication No. ICS 2.4-2003 - NEMA and IEC Devices for Motor Service—a Guide for Understanding the Differences, 2003 (“NEMA ICS 2.4”), IBR approved for § 111.70-3 of this chapter.

(4) NEMA Standards Publication No. ANSI/NEMA 250-1997 - Enclosures for Electrical Equipment (1000 Volts Maximum), August 30, 2001 (“NEMA 250”), IBR

approved for §§ 110.15-1, 111.01-9, 110.15-1, 113.10-7, 113.20-3, 113.25-11, 113.30-25, 113.37-10, 113.40-10, and 113.50-5 of this chapter.

(5) NEMA Standards Publication No. WC-3-1992 - Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy, Revision 1, February 1994 (“NEMA WC-3”), IBR approved for § 111.60-13 of this chapter.

(6) NEMA WC-70/ICEA S-95-658-1999 - Standard for Non-Shielded Power Rated Cable 2000V or Less for the Distribution of Electrical Energy, 1999 (“NEMA WC-70”), IBR approved for § 111.60-13 of this chapter.

(p) *National Fire Protection Association (NFPA)*, 1 Batterymarch Park, Quincy, MA 02169, 617-770-3000, <http://www.nfpa.org>.

(1) NEC 2002 (NFPA 70) - National Electrical Code Handbook, Ninth Edition, 2002 (“NFPA NEC 2002”), IBR approved for §§ 111.05-33, 111.20-15, 111.25-5, 111.50-3, 111.50-7, 111.50-9, 111.53-1, 111.54-1, 111.55-1, 111.59-1, 111.60-7, 111.60-13, 111.60-23, 111.81-1, 111.105-1, 111.105-3, 111.105-5, 111.105-7, 111.105-9, 111.105-15, 111.105-17, and 111.107-1 of this chapter.

(2) NFPA 70 - National Electrical Code, 2011 Edition (“NFPA 70”), IBR approved for §§ 111.106-3(b), 111.106-5(c), and 111.108-3(b)(1) and (2) of this chapter.

(3) NFPA 77 - Recommended Practice on Static Electricity, 2000 (“NFPA 77”), IBR approved for § 111.105-27 of this chapter.

(4) NFPA 99 - Standard for Health Care Facilities, 2005 (“NFPA 99”), IBR approved for § 111.105-37 of this chapter.

(5) NFPA 496 - Standard for Purged and Pressurized Enclosures for Electrical Equipment, 2003 (“NFPA 496”), IBR approved for § 111.105-7 of this chapter.

(6) NFPA 496 - Standard for Purged and Pressurized Enclosures for Electrical Equipment, 2008 Edition (“NFPA 496 (2008)”), IBR approved for § 111.106-3(c) of this chapter.

(7) NFPA 496 - Standard for Purged and Pressurized Enclosures for Electrical Equipment, 2013 Edition (“NFPA 496 (2013)”), IBR approved for § 111.108-3(d) of this chapter.

(q) *Naval Sea Systems Command (NAVSEA)*, 1333 Isaac Hull Avenue, SE., Washington, DC 20376, 202-781-0000, <http://www.navsea.navy.mil>.

(1) DDS 300-2 - A.C. Fault Current Calculations, 1988 (“NAVSEA DDS 300-2”), IBR approved for § 111.52-5 of this chapter.

(2) MIL-HDBK-299(SH) - Military Handbook Cable Comparison Handbook Data Pertaining to Electric Shipboard Cable Notice 1-1991 (Revision of MIL-HDBK-299(SH) (1989)), October 15, 1991 (“NAVSEA MIL-HDBK-299(SH)”), IBR approved for § 111.60-3 of this chapter.

(r) *UL* (formerly Underwriters Laboratories, Inc.), 2600 N.W. Lake Road, Camas, WA, 98607, 877-854-3577, <http://www.ul.com>.

(1) UL 44 - Standard for Thermoset-Insulated Wire and Cable, Fifteenth Edition, Mar. 22, 1999 (Revisions through and including May 13, 2002) (“UL 44”), IBR approved for § 111.60-11 of this chapter.

(2) UL 50 - Standard for Safety Enclosures for Electrical Equipment, Eleventh Edition, Oct. 19, 1995 (“UL 50”), IBR approved for § 111.81-1 of this chapter.

(3) UL 62 - Standard for Flexible Cord and Fixture Wire, Sixteenth Edition, Oct. 15, 1997 (“UL 62”), IBR approved for § 111.60-13 of this chapter.

(4) UL 83 - Standard for Thermoplastic-Insulated Wires and Cables, Twelfth Edition, Sept. 29, 1998 (“UL 83”), IBR approved for § 111.60-11 of this chapter.

(5) UL 484 - Standard for Room Air Conditioners, Seventh Edition, (Revisions through and including Sep. 3, 2002), Apr. 27, 1993 (“UL 484”), IBR approved for § 111.87-3 of this chapter.

(6) UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures, Ninth Edition, (Revisions through and including Mar. 22, 2000), Oct. 31, 1996 (“UL 489”), IBR approved for §§ 111.01-15 and 111.54-1 of this chapter.

(7) UL 514A - Metallic Outlet Boxes, Ninth Edition, Dec. 27, 1996 (“UL 514A”), IBR approved for § 111.81-1 of this chapter.

(8) UL 514B - Conduit, Tubing, and Cable Fittings, Fourth Edition, Nov. 3, 1997 (“UL 514B”), IBR approved for § 111.81-1 of this chapter.

(9) UL 514C - Standard for Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers, Second Edition, Oct. 31, 1988 (“UL 514C”), IBR approved for § 111.81-1 of this chapter.

(10) UL 674 - Standard for Safety: Electric Motors and Generators for Use in Division 1 Hazardous (Classified) Locations, Fourth Edition with revisions through Aug. 12, 2008 (dated Dec. 11, 2003) (“ANSI/UL 674”), IBR approved for § 111.106-3(b) of this chapter.

(11) UL 674 – Standard for Safety: Electric Motors and Generators for Use in Hazardous (Classified) Locations, Fifth Edition, dated May 31, 2011 (with revisions through July 19, 2013) (“ANSI/UL 674 (2013)”), IBR approved for § 111.108-3(b) of this chapter.

(12) UL 823 - Electric Heaters for Use in Hazardous (Classified) Locations, Ninth Edition including revisions through Nov. 15, 2007 (dated Oct. 20, 2006) (“ANSI/UL 823”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(13) UL 844 – Standard for Safety: Luminaires for Use in Hazardous (Classified) Locations, Twelfth Edition including revisions through Nov. 20, 2008 (dated Jan. 11, 2006) (“ANSI/UL 844”), IBR approved for § 111.106-3(b) of this chapter.

(14) UL 844 – Standard for Safety: Luminaires for Use in Hazardous (Classified) Locations, Thirteenth Edition, dated June 29, 2012 (“ANSI/UL 844 (2012)”), IBR approved for § 111.108-3(b) of this chapter.

(15) UL 913 - Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class i, ii, and iii, Division 1, Hazardous (Classified) Locations, Sixth Edition, (Revisions through and including Dec. 15, 2003) August 8, 2002 (“UL 913”), IBR approved for § 111.105-11 of this chapter.

(16) UL 913 - Standard for Safety: Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous Locations, Seventh Edition, Dated July 31, 2006 (including revisions through June 3, 2010) (“ANSI/UL 913”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(17) UL 1042 - Standard for Electric Baseboard Heating Equipment, Apr. 11, 1994, IBR approved for § 111.87-3 of this chapter.

(18) UL 1072 - Standard for Medium-Voltage Power Cables, Third Edition, Dec. 28, 2001 (revisions through and including Apr. 14, 2003), IBR approved for § 111.60-1 of this chapter.

(19) UL 1104 - Standard for Marine Navigation Lights, Second Edition, Oct. 29, 1998, IBR approved for § 111.75-17 of this chapter.

(20) UL 1203 - Standard for Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations, Third Edition, Sept. 7, 2000 (Revisions through and including Apr. 30, 2004), IBR approved for § 111.105-9 of this chapter.

(21) UL 1203 – Standard for Safety: Explosion-Proof and Dust-Ignition Proof Electrical Equipment for Use in Hazardous (Classified) Locations, Fourth Edition, Dated September 15, 2006 (including revisions through October 28, 2009) (“ANSI/UL 1203”), IBR approved for §§ 111.106-3(b) and 111.108-3(b) of this chapter.

(22) UL 1309 - Marine Shipboard Cables, First Edition, July 14, 1995, IBR approved for §§ 111.60-1, 111.60-3, and 111.106-5(a) of this chapter.

(23) UL 1581 - Reference Standard for Electrical Wires, Cables, and Flexible Cords, May 6, 2003, IBR approved for §§ 111.30-19, 111.60-2, and 111.60-6 of this chapter.

(24) UL 1598 - Luminaires, First Edition, Jan. 31, 2000, IBR approved for § 111.75-20 of this chapter.

(25) UL 1598A - Standard for Supplemental Requirements for Luminaires for Installation on Marine Vessels, First Edition, Dec. 4, 2000, IBR approved for § 111.75-20 of this chapter.

(26) UL 1604 - Electrical Equipment for use in Class I and II, Division 2 and Class III Hazardous (Classified) Locations, Third Edition, Dated April 28, 1994

(including revisions through February 3, 2004) (“UL 1604”), IBR approved for § 111.108-3(b) of this chapter.

(27) UL 2225 - Cables and Cable-Fittings for Use in Hazardous (Classified) Locations, Second Edition, Dec. 21, 2005 (“ANSI/UL 2225”), IBR approved for § 111.106-3(b) of this chapter.

(28) UL 2225 - Standard for Safety: Cables and Cable-Fittings for use in Hazardous (Classified) Locations, Third Edition, dated February 25, 2011 (“ANSI/UL 2225 (2011)”), IBR approved for § 111.108-3(b) of this chapter.

9. Amend § 110.15-1(b) by adding, in alphabetical order, the definitions for “Constructed”, "OCS activity", and "Outer Continental Shelf (OCS)" to read as follows:

§ 110.15-1 Definitions.

\* \* \* \* \*

(b) \* \* \*

Constructed means the date—

(1) The vessel’s keel was laid; or

(2) Construction identifiable with the vessel or facility began and assembly of that vessel or facility commenced comprising of 50 metric tons or at least 1 percent of the estimated mass of all structural material, whichever is less.

\* \* \* \* \*

OCS activity has the same meaning as it does in 33 CFR 140.10.

Outer Continental Shelf (OCS) has the same meaning as it does in 33 CFR 140.10.

\* \* \* \* \*

10. Amend § 110.25-1 by adding paragraph (q) to read as follows:

§ 110.25-1 Plans and information required for new construction.

\* \* \* \* \*

(q) For vessels with hazardous locations to which subpart 111.108 of this chapter applies, plans showing the extent and classification of all hazardous locations, including information on--

- (1) Equipment identification by manufacturer's name and model number;
- (2) Equipment use within the system;
- (3) Parameters of intrinsically safe systems, including cables;
- (4) Equipment locations;
- (5) Installation details and/or approved control drawings; and
- (6) A certificate of testing, and listing or certification, by an independent

laboratory or an IECEx Certificate of Conformity under the IECEx System, where required by the respective standard in § 111.108-3(b)(1), (2), or (3) of this chapter.

**PART 111 – ELECTRIC SYSTEMS GENERAL REQUIREMENTS**

11. The authority citation for part 111 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703; Department of Homeland Security Delegation No. 0170.1. Section 111.05-20 and Subpart 111.106 also issued under sec. 617, Pub. L. 111-281, 124 Stat. 2905.

12. Add subpart 111.108 to read as follows:

Subpart 111.108 -- Hazardous Locations Requirements on U.S. and Foreign MODUs, Floating OCS Facilities, Vessels Conducting OCS Activities, and U.S. Vessels That Carry Flammable and Combustible Cargo

Sec.

111.108-1 Applicability.

111.108-2 [Reserved]

111.108-3 General requirements.

§ 111.108-1 Applicability.

(a) This subpart applies to MODUs, floating OCS facilities, and vessels, other than offshore supply vessels regulated under subchapter L of this chapter, constructed after April 2, 2018 that engage in OCS activities.

(b) U.S. MODUs, floating OCS facilities, and vessels other than OSVs regulated under subchapter L of this chapter and U.S. tank vessels that carry flammable and combustible cargoes, may comply with this subpart in lieu of §§ 111.105-1 through 111.105-15. All other sections of subpart 111.105 of this part remain applicable.

§ 111.108-2 [Reserved]

§ 111.108-3 General requirements.

(a) Electrical installations in hazardous locations, where necessary for operational purposes, must be located in the least hazardous location practicable.

(b) Electrical installations in hazardous locations must comply with paragraphs (b)(1), (2), or (3) of this section.

(1) NFPA 70 Articles 500 through 504 (incorporated by reference, see § 110.10-1 of this chapter). Equipment required to be identified for Class I locations must meet the provisions of Sections 500.7 and 500.8 of NFPA 70 and must be tested and listed by an independent laboratory to any of the following standards:

(i) ANSI/UL 674 (2013), ANSI/UL 823, ANSI/UL 844 (2012), ANSI/UL 913, ANSI/UL 1203, UL 1604 (replaced by ANSI/ISA 12.12.01) or ANSI/UL 2225 (2011) (incorporated by reference, see § 110.10-1 of this chapter).

(ii) FM Approvals Class Number 3600, Class Number 3610, Class Number 3611, Class Number 3615, or Class Number 3620 (incorporated by reference, see § 110.10-1 of this chapter).

(iii) CSA C22.2 Nos. 0-M91, 30-M1986, 157-92, or 213-M1987 (incorporated by reference, see § 110.10-1 of this chapter).

Note to § 111.108-3(b)(1): See Article 501.5 of NFPA 70 (incorporated by reference, see § 110.10-1 of this chapter) for use of Zone equipment in Division designated spaces.

(2) NFPA 70 Article 505 (incorporated by reference, see § 110.10-1 of this chapter). Equipment required to be identified for Class I locations must meet the provisions of Sections 505.7 and 505.9 of NFPA 70 and must be tested and listed by an independent laboratory to one or more of the types of protection in ANSI/ISA Series of standards incorporated in NFPA 70.

Note to paragraph (b)(2). See Article 505.9(c)(1) of the NFPA 70 (incorporated by reference, see § 110.10-1 of this chapter) for use of Division equipment in Zone designated spaces.

(3) Clause 6 of IEC 61892-7:2007 (incorporated by reference, see § 110.10-1 of this chapter) for all U.S. and foreign floating OCS facilities and vessels on the U.S. OCS or on the waters adjacent thereto; chapter 6 of 2009 IMO MODU Code (incorporated by reference, see § 110.10-1) for all U.S. and foreign MODUs; or clause 6 of IEC 60092-502 (incorporated by reference, see § 110.10-1) for U.S. tank vessels that carry flammable and combustible cargoes. Electrical apparatus in hazardous locations must be tested to IEC 60079-1:2007, IEC 60079-2:2007, IEC 60079-5:2007, IEC 60079-6:2007, IEC 60079-7:2006, IEC 60079-11:2011, IEC 60079-13:2010, IEC 60079-15:2010, IEC

60079-18:2009 or IEC 60079-25:2010 (incorporated by reference, see § 110.10-1) and certified by an independent laboratory under the IECEx System.

(c) System components that are listed or certified under paragraph (b)(1), (2), or (3) of this section must not be combined in a manner that would compromise system integrity or safety.

(d) As an alternative to paragraph (b)(1) of this section, electrical equipment that complies with the provisions of NFPA 496 (2013) (incorporated by reference, see § 110.10-1 of this chapter) is acceptable for installation in Class I, Divisions 1 and 2. When equipment meeting this standard is used, it does not need to be identified and marked by an independent laboratory. The Commanding Officer, MSC, will evaluate equipment complying with this standard during plan review.

Note to paragraph (d). The Commanding Officer, MSC, will generally consider it acceptable if a manufacturer's certification of compliance is indicated on a material list or plan.

(e) Equipment listed or certified to ANSI/ISA 60079-18 (2012) or IEC 60079-18:2009, respectively, (incorporated by reference, see § 110.10-1 of this chapter) is not permitted in Class I, Special Division 1, or Zone 0 hazardous locations unless the encapsulating compound of Ex "ma" protected equipment is not exposed to, or has been determined to be compatible with, the liquid or cargo in the storage tank.

(f) Submerged pump motors that do not meet the requirements of § 111.105-31(d), installed in tanks carrying flammable or combustible liquids with closed-cup flashpoints not exceeding 60° C (140° F), must receive concept approval by the Commandant (CG-ENG) and plan approval by the Commanding Officer, MSC.

(g) Internal combustion engines installed in Class I, Divisions 1 and 2 (Class I and IEC, Zones 1 and 2) must meet the provisions of ASTM F2876–10 (incorporated by reference, see § 110.10-1 of this chapter).

Dated: March 20, 2015.

J.G. Lantz,  
Director of Commercial Regulations and Standards,  
U.S. Coast Guard.

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