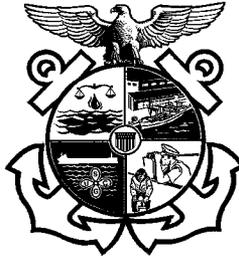


United States Coast Guard



FLOATING OCS FACILITY INSPECTOR Job Aid

Name of Facility	
CG Number	Activity Number
Date Completed	Priority
Location	
Facility Built in Compliance with:	
<input type="checkbox"/> U.S. Regulations	<input type="checkbox"/> CG-ENG 01-13
Marine Inspectors:	
1. _____	3. _____
2. _____	4. _____

Job Aid FOFI
Rev. Aug2018

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Use of Floating OCS Facility Inspection Book:

This examination book is intended to be used as a job aid by Coast Guard Marine Inspectors during inspections of floating OCS facilities. Each book contains an extensive list of possible inspection items. The depth and scope of the inspection must be determined by the Marine Inspectors based on their observations.

This document does not establish or change Federal laws or regulations. References given are only general guides. Refer to CFR's, NVIC's, and any locally produced cite guides for specific regulatory references.

NOTE: *Guidance on how to examine floating OCS facilities can be found in MSM Volume II, Section G: Procedures Applicable to Floating OCS Facilities.*

IMPORTANT NOTE: *FOFs have limited legal applicability for specific parts of the CFRs. Remember, applicability starts in 33 CFR Subchapter N (33 CFR 143.120 for FOFs).*

Guide to Inspections:

Pre-inspection Items

- Schedule inspection in MISLE
- Review MISLE records
- Coordinate inspection with facility's representative
- Conduct meeting with facility's representative
- Issue Letter(s) of Determination
- Review Design Basis Agreement (DBA)
- Obtain copies of forms to be issued

Post-inspection Items

- Issue deficiencies
- Verify deficiency corrections
- Issue/endorse certificates
- Complete MISLE entries within 48 hours

Table of Contents:

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Section 3: Drills

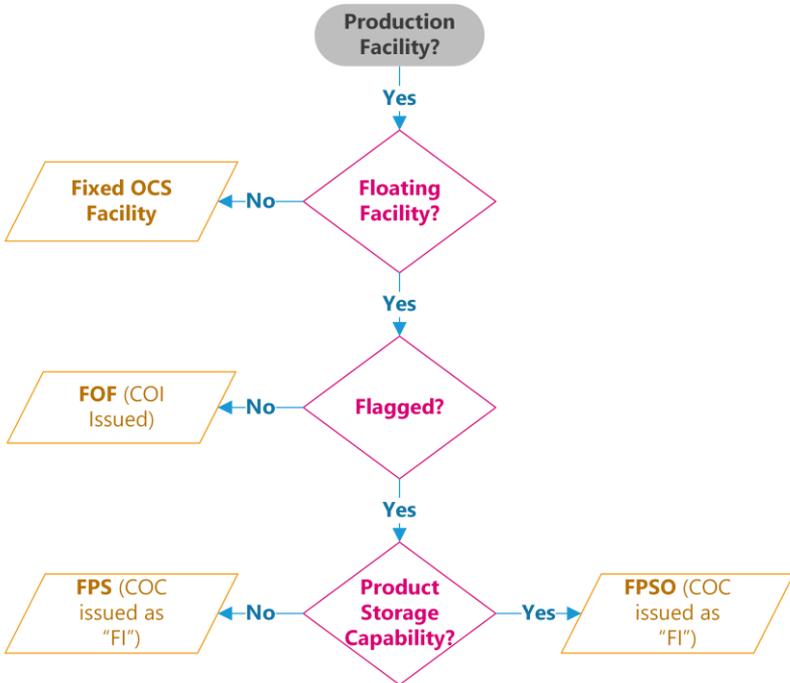
Fire Drill 43
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Section 4: Appendices

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Section 1: Administrative Items

Production Facility Applicability



Glossary:

FI – Floating Installation

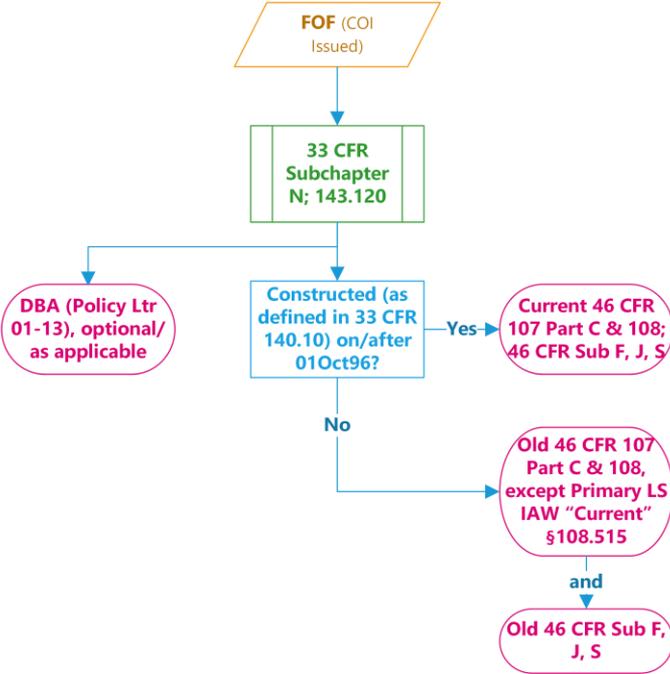
FOF* – Floating OCS Facility (commonly referred to as a Floating Offshore Installation or FOI; FOFs are substantially/permanently-moored & are not 'Documented' or 'flagged')

FPS* – Floating Production System (this term is also used by BSEE regulations & can apply to all floating units, except FPSOs)

FPSO – Floating, Production, Storage & Offloading

*FPS & FOI can also be used by classification societies to indicate facility systems (production/marine) that are 'classed'.

Production Facility Applicability (Cont'd)



Involved Parties & General Information:

Facility's Representative
Phone Number
E-mail

Owner – Name & Address
<input type="checkbox"/> No Change

Operator – Name & Address
<input type="checkbox"/> No Change

Facility Information:

Classification Society	
Date of Last Class Survey	
<input type="checkbox"/> Outstanding conditions of class or non-conformities	
Hull Type <input type="checkbox"/> Spar <input type="checkbox"/> Tension Leg Platform (TLP) <input type="checkbox"/> Column-Stabilized	
Current COI Expiration	Max POB
Lifeboatmen	Conversions / Modifications
Build Date (use delivery date)	<input type="checkbox"/> No Change

Section 2: Inspection Items

Pre-Inspection

- ☐ 1. Schedule inspection in Maritime Information for Safety and Law Enforcement (MISLE)
 - Determine the authority, jurisdiction, and applicable regulation(s) 33 CFR 140.3 & .101(a)
33 CFR 143.120 & .207
 - Verify alternatives in design and equipment standards (e.g. design basis agreement) CG-ENG Policy Ltr 01-13
 - Locate facility MPS-PR-SEC-04
MISLE User Guide
 - Verify documents are current MPS-PR-SEC-04
MSM 1/12.G.5
 - Review history (narratives, deficiencies & special notes) MSM 1/12.G.2.a
MPS-PR-SEC-02 & 04
 - Verify status of user fees 46 CFR 2.10-1
 - Prepare folder and required documents 46 CFR 2.01-5
MPS-PR-SEC-01
 - Generate new activity MISLE User Guide

- ☐ 2. Coordinate inspection with facility's representative
 - Identify vessel's representative MPS-PR-SEC-01
MPS-PR-SEC-04
 - Confirm inspection time and destination MPS-PR-SEC-01
 - Articulate examination expectations 33 CFR 140.101(a), (c) & (d)
 - Verify owner/operator information MPS-PR-SEC-04
 - Verify Classification Society information MPS-PR-SEC-04

- ☐ 3. Conduct meeting with facility's representative
 - Review outstanding Conditions of Class and third party servicing report discrepancies MPS-PR-SEC-04
 - Discuss inspection procedures and expectations 33 CFR 140.101 (a), (c) & (d)
 - Review any operations that could affect inspection/equipment with OIM MPS-PR-SEC-04

- Coordinate testing procedures and inspection MPS-PR-SEC-04
4. Issue Letter of Determination (LOD)
- Determine applicability 43 USC 1356(c)
33 CFR 141.5
 - Review request 33 CFR 141.15
NVIC 07-84
 - Prepare LOD 33 CFR 141.15
NVIC 07-84
 - Retain a copy and log issued LODs 5 USC 552 & 552a
COMDTINST M5260.3
 - Secure documentation received from employers/applicants COMDTINST M5212.12A
5. Mitigate potential hazards encountered during an inspection
- Recognize potential hazards NFPA 306
 - Determine confined spaces MSM I/10 App. A
 - Determine if inspection scope will require a Marine Chemist certification for entry into spaces 29 CFR 1915, Part B
MSM II/G.1.J
 - Verify Marine Chemist has been scheduled for the inspection MSM I/10 App. A
 - Prepare necessary personal protective equipment for inspection MSM I/10 App. A
Quattro Operator's Manual
 - Review CG policy for leaving spaces due to hazardous condition MSM I/10 App. A
6. Review Design Basis Agreement (DBA)
- Verify document is available in MISLE CG-ENG Policy Ltr 01-13
 - Determine classification society & design standard(s) CG-ENG Policy Ltr 01-13 Encl 1(1)(a), (b) & (c)
 - Verify classification standards are accessible CG-ENG Policy Ltr 01-13 Encl 1(1)(a), (b) & (c)
 - Identify areas where facility's design and equipment standards differ from regulatory requirements CG-ENG Policy Ltr 01-13
Facility's design basis letter

Security

- ☐ 7. Review Facility Security Plan (FSP)
 - Determine applicability 33 CFR 106.105
NVIC 05-03/Encl (1)
 - Verify presence of valid approval letter 33 CFR 106.115(a) & (c)
 - Verify contents 33 CFR 106.235
33 CFR 106.405
 - Verify any amendments have been approved 33 CFR 106.415
NVIC 05-03/Encl (3)
 - Verify plan is protected 33 CFR 106.400(c)
49 CFR 1520
 - Verify security incident procedures 33 CFR 106.280
 - Verify presence of Facility Security Assessment Report 33 CFR 106.305(d)

- ☐ 8. Review security records/documents
 - Determine applicability 33 CFR 106.105
 - Verify TWIC program implementation 33 CFR 106.200(b)(6)
 - Verify record of security training for facility security officer (FSO) 33 CFR 106.210
 - Verify record(s) of security training for OCS personnel with security duties 33 CFR 106.215
 - Verify record(s) of security training for all facility personnel 33 CFR 106.220
 - Verify presence of Declarations of Security (DoS) 33 CFR 106.230(b)(7)
33 CFR 106.250
 - Verify record(s) of security drills conducted 33 CFR 106.230(b)(2)
33 CFR 106.225(b)
 - Verify record(s) of annual exercise conducted 33 CFR 106.230(b)(2)
33 CFR 106.225(c)
 - Verify record(s) of annual audit conducted 33 CFR 106.415(b)
33 CFR 106.230(b)(8)
 - Verify records of security incidents, MARSEC level & security threats 33 CFR 106.230
 - Verify CSO and FSO are designated in writing 33 CFR 106.200(b)(2)

- ☐ 9. Inspect security equipment and access control
 - Verify condition of security system(s) and equipment 33 CFR 106.255
 - Inspect access control measures 33 CFR 106.260(a)(3)
33 CFR 106.260(b)(1)
 - Inspect signs 33 CFR 106.260(f)(3)
 - Verify restricted area markings 33 CFR 106.265(b)
 - Verify communications 33 CFR 106.240

- ☐ 10. Review crew knowledge of security plan
 - Evaluate facility security officer's (FSO) knowledge 33 CFR 106.210(b)
 - Evaluate crew's knowledge 33 CFR 106.215
33 CFR 106.270

Certificates & Documents

- ☐ 11. Review Certificate of Inspection (COI)
 - Verify COI is onboard 33 CFR 143.120(c)
MSM II/G.4.C
 - Validate manning 46 CFR 15.501
MSM II/G.4.L.2
 - Validate firefighting & lifesaving equipment requirements 46 CFR 108, Subpart D
46 CFR 108, Subpart E
 - Verify for errors and completeness MSM II/A.3.B
 - Review amendments 46 CFR 2.01-5

- ☐ 12. Review Merchant Mariner Credentials (MMCs), Medical Certificates & Transportation Worker Identification Credentials (TWICs)
 - Verify presence & validity of original MMCs & certificates 46 CFR 10.205 & 11.470 thru .474
46 CFR 12.401 & .407
 - Verify MMCs meet COI manning requirements 46 CFR 15.515
 - Verify Transportation Worker Identification Credential (TWIC) 46 CFR 10.203(b)
 - Examine medical certificates 46 CFR 10.301
 - Verify number of Lifeboatmen MSM II/G.4.L.2.a
46 CFR 109.323

- 13. Review classification society certificate (if classed) and documents
 - Verify applicability 46 CFR 8 Subpart B
 - Verify validity 46 CFR 8 Subpart B
 - Verify endorsement 46 CFR 8 Subpart B

Logs & Manuals

- 14. Review firefighting equipment maintenance and service logs/reports
 - Review record(s) of inspection and maintenance of portable & semi-portable fire extinguishers 33 CFR 145.01
NFPA 10/7.2.4, 7.3.3 & 7.4.5
 - Verify inspection and servicing of fire extinguishers by appropriate personnel 33 CFR 145.01(b)
 - Verify discrepancies on servicing reports are corrected 33 CFR 145.01
NFPA 10/7.2.3 & 7.2.4
 - Verify record of automatic sprinkler system tested annually 46 CFR 108.430
NFPA 13/9-9.1.1 > NFPA 25/2-2

- 15. Review Unfired Pressure Vessels (UPVs) and relief valves maintenance and service logs/reports
 - Verify required UPV tests conducted 46 CFR 61.10-5(a)
 - Verify UPV relief valves tested 46 CFR 54.15-10
46 CFR 61.10-5(i)
 - Verify UPV five year internal inspection 46 CFR 61.10-5(b)
 - Examine ultra-sonic testing (UT) report MSM II/B.1.O.4.d

- 16. Review Marine Operating Manual (MOM)
 - Verify presence of approval letter 33 CFR 143.120(a)
46 CFR 107.305(ii)
 - Verify table of contents and index 46 CFR 109.121(b)(1)
 - Verify general description of unit 46 CFR 109.121(b)(2)
 - Verify limiting design data for each mode of operation 46 CFR 109.121(b)(3)
 - Verify lightship, stability and loading condition contents 46 CFR 109.121(b)(4) thru (13)
 - Verify guidance addressing severe storm passage, operational changes and limitations 46 CFR 109.121(b)(14) thru (16)

- Verify guidance and information regarding bilge and ballast systems 46 CFR 109.121(b)(17) thru (19)
- Verify facility schematics and plans 46 CFR 109.121(b)(20) thru (23)
- Verify procedures for evacuating personnel 46 CFR 109.121(b)(24)

17. Review Emergency Evacuation Plan (EEP)

- Verify EEP is applicable to on-site conditions 33 CFR 146.140(a)
- Verify presence of approval letter 33 CFR 146.140(b)
- Verify contents and revision pages for changes 33 CFR 146.140(d)
- Verify EEP annual drill was conducted 33 CFR 146.125(c)(1)

18. Review construction portfolio

- Verify Coast Guard and/or classification society approval 46 CFR 107.305(hh) NVIC 10-82
- Verify contents 46 CFR 107.305(hh)

19. Review refuse (garbage) logs and waste management plan

- Verify logs are complete and accurate 33 CFR 151.63
33 CFR 151.73
- Verify signature entries 33 CFR 151.63
- Verify plan is present 33 CFR 151.57
- Verify placard(s) posted 46 CFR 151.59
- Verify plastics are retained or incinerated 46 CFR 151.55

20. Review transfer procedures

- Verify Person In Charge is identified 33 CFR 155.750(a)(4)
- Verify posted or available at transfer station 33 CFR 155.740(c)

Command & Control

21. Inspect external communications

- Verify means and location of emergency communications 33 CFR 146.140(e)(1)

- Verify communications equipment, frequencies and schedules as specified in Evacuation Plan 33 CFR 146.140(d)(5)

General Health & Safety

- 22. Inspect accommodation spaces
 - Verify berth arrangement and appropriate size 46 CFR 108.199
46 CFR 108.201
 - Verify means of escape 46 CFR 108.155 thru .157
 - Verify condition of vents and ducts MSM II/B.1.N.9
 - Verify sanitary conditions 46 CFR 108.205(n)
 - Inspect wash spaces, toilet spaces and shower spaces 46 CFR 108.205
 - Verify passageways are clear 33 CFR 143.101(e)

- 23. Inspect mess deck and galley spaces
 - Verify condition of vents and ducts MSM II/B.1.N.9
 - Examine condition and operation of galley and scullery window closures 46 CFR 108.135
OEM Instructions
 - Verify arrangement of messroom(s) 46 CFR 108.207
 - Examine electrical equipment 46 CFR 111.01-9
46 CFR 110.10-1(j)(6)

- 24. Inspect Personal Protective Equipment (PPE) and procedures
 - Verify availability of PPE (eye, head and face) 33 CFR 142.27
33 CFR 142.30
 - Verify foot protection 33 CFR 142.33
 - Verify protective clothing 33 CFR 142.36
 - Verify availability of respiratory protection equipment for required atmospheres 33 CFR 142.39
 - Verify availability of safety belt or harness 33 CFR 142.42
 - Verify personnel working in locations over water are wearing personal flotation device (PFD) 33 CFR 142.45
 - Verify availability and operation of eyewash equipment 33 CFR 142.48
 - Verify condition of work space 33 CFR 142.84
 - Verify deck openings appropriately guarded 33 CFR 142.87

- Verify lock out/tag out procedures are being utilized 33 CFR 142.90
25. Inspect hospital space
- Determine applicability 46 CFR 108.209(a)
46 CFR 108.210
 - Verify adequate number of berths 46 CFR 108.209(h)
 - Verify berth with accessibility from both sides 46 CFR 108.209(g)
 - Verify upper berth is hinged (when applicable) 46 CFR 108.209(f)
 - Verify toilet, washbasin, bathtub or shower, locker, table and seat 46 CFR 108.209(i)
 - Verify hot and cold running water 46 CFR 108.209(i)
46 CFR 108.205(i)
 - Verify space not used for storage when in use 46 CFR 108.209(c)
 - Examine first aid kit contents 46 CFR 108.707
33 CFR 146.15a
 - Verify stowage and capability of litter 46 CFR 108.709
 - Examine treatment room (when applicable) 46 CFR 108.210
26. Inspect paint locker(s)
- Verify fire protection 46 CFR 108.403(a)(1)
 - Examine space construction material 46 CFR 108.127
 - Verify electrical installations 46 CFR 111.105-5
46 CFR 111.105-43
 - Verify means to secure ventilation 46 CFR 108.181
 - Verify means to release pressure 46 CFR 108.457
27. Inspect Portable Accommodation Module(s)(PAM)
- Verify PAM identification plate to include CG number is permanently attached 46 CFR 107.305
CG-ENG Policy Ltr 01-16
 - Verify fire and safety plan is posted in conspicuous location in PAM 46 CFR 107.305
CG-ENG Policy Ltr 01-16
 - Verify PAM integration with shipboard systems is satisfactory (i.e. sanitary, potable water, fire & gas detection, public address, etc.) 46 CFR 107.305
CG-ENG Policy Ltr 01-16

- Witness operational test of fire and gas alarms 46 CFR 108.405(a)(2)
CG-ENG Policy Ltr 01-16
- Examine portable firefighting equipment 46 CFR 108.495
- Examine personal lifesaving equipment 46 CFR 108.580(b)
- Verify operation of emergency lighting 46 CFR 111.75-15(c)(2)
CG-ENG Policy Ltr 01-16
- Verify operation of ventilation shutdown(s)/closure(s) 46 CFR 108.181
ABS Guide 2.15.17
- Verify means of escape 46 CFR 108.151 & .153
CG-ENG Policy Ltr 01-16
- Verify securing arrangements to facility 46 CFR 107.305
CG-ENG Policy Ltr 01-16
- Verify documentation and markings (CG number) 46 CFR 107.305
CG-ENG Policy Ltr 01-16
- Verify all areas of PAM installation can be reached by two spray patterns of water 46 CFR 108.423(a)

28. Inspect Portable Accommodation Module(s) (PAM)

- Verify modifications have been completed IAW approval letter 46 CFR 107.305
CG-ENG Policy Ltr 01-16

Lifesaving Equipment

29. Inspect general emergency alarm system

- Verify alarm activation points/contact makers locations 33 CFR 146.105
- Verify contact makers and bell markings 46 CFR 108.623
46 CFR 108.625
- Verify operation 33 CFR 146.105
- Verify audibility of Public Address system and ability to interrupt all other audio systems 33 CFR 146.105

30. Inspect lifeboats

- Determine applicability 33 CFR 143.120
46 CFR 108.515
- Verify USCG type approval for boat and release gear or accepted equivalency 46 CFR 108.520
46 CFR 108.105

- Determine rated capacity from data plate and ensure weights marked are IAW applicable requirements 46 CFR 160.135 & .035
- Verify stowage 46 CFR 108.530
- Verify instructions posted inside lifeboat for release gear 46 CFR 160.133-19(c)
- Examine release gear and verify gear meets IMO revised regulations 33 CFR 146.15 & 143.120(b)
46 CFR 108.520(a), 160.135-7(a)(17) & 160.133-21(a)(1)
- Verify presence and stowage of required equipment without reducing seating capacity 46 CFR 108.575 (a) & (b)
NVIC 02-92
- Verify dual-service designated rescue boats have additional required equipment 46 CFR 108.575
- Verify sprinkler system components 46 CFR 160.135
46 CFR 160.035
- Verify self-contained air system components and operation 46 CFR 160.135
46 CFR 160.035
- Verify instructions are posted for operation of the fire protection systems with components adequately accessible and labeled 46 CFR 160.135-7(b)(25)
- Witness operation of engine and tests of reduction gear 33 CFR 146.15 & 143.120(b)
46 CFR 108.520(a) & 160.13
- Verify secondary means of starting 46 CFR 160.135
LSA Code 4.4.6.2
- Verify remote and local steering 46 CFR 160.135-7(b)(13)
- Witness testing of the communications equipment 46 CFR 160.135-7(b)(13)
- Verify navigation lighting, emergency signals and location-finding equipment (if installed) 46 CFR 160.135-7(b)(26)
46 CFR 108.575(b)
- Verify required exterior markings 46 CFR 108.645(a)
- Witness launch and operation of the lifeboat in water and verify operation of fire protection (sprinkler) system 33 CFR 146.15 & 143.120(b)
46 CFR 108.520(a) & 160.135-21(a)(1)
- Verify de-rated lifeboat is properly marked for reduced capacity (if applicable) MSM II/C.2.H.2

31. Inspect muster and embarkation stations

- Examine muster and embarkation stations arrangements 46 CFR 108.540(a) - (c) & (f)

- Verify embarkation ladders meet requirements or that OCMI accepted alternative is satisfactory 46 CFR 108.540(h)
- Verify emergency lighting configuration and operation 46 CFR 111.75-16
46 CFR 112.43-11
- Verify arrangement is configured to permit stretchers to be placed into survival craft 46 CFR 108.540(e)
- Verify location and arrangement provides for fully boarding lifeboats within required timeframe 46 CFR 108.540(d)
- Verify davit-launched liferaft embarkation arrangements (if applicable) 46 CFR 108.540(g)

32. Inspect means of escape from the facility

- Verify construction of primary means of escape 33 CFR 143.101(a) & (c)
- Verify primary means of escape extends to water's surface (ladder or stairway) and suitable for rapid evacuation 33 CFR 143.101(c) & (e)
- Verify personnel landing grating is safe for access and egress (missing/deteriorated/damaged) 33 CFR 143.105(a)
- Verify ladders and sea areas are illuminated 33 CFR 143.105(b)

33. Inspect inflatable and davit-launched liferaft installations

- Determine applicability 46 CFR 108.510
46 CFR 108.515
- Verify quantity 46 CFR 108.525
- Verify type approval 46 CFR 108.520(b)
- Verify stowage and float-free arrangement 46 CFR 108.530(c)
- Verify markings 46 CFR 108.646 & .647
46 CFR 160.151-57(m)
- Verify annual service dates 33 CFR 143.120(b)
46 CFR 108.520(b)
- Verify operating instructions are posted 46 CFR 108.655
46 CFR 160.151-59(c)
- Verify embarkation ladder proximity to liferaft launching area 46 CFR 108.540(h)

- Examine davit-launched liferaft arrangement (launching & embarkation) 46 CFR 108.530(c)
46 CFR 108.540(g)

☐ 34. Inspect rescue boat

- Determine if lifeboat is used as a rescue boat 46 CFR 108.560
46 CFR 108.565(a)(4)
- Verify CG approval or accepted equivalency if boat is non-CG approved 46 CFR 108.105
46 CFR 108.560
- Verify embarkation, launching and recovery arrangements 46 CFR 108.570
- Verify stowage 46 CFR 108.565
- Verify operating instructions are posted 46 CFR 160.156-7(b)(23)
46 CFR 160.156-19(c)(2)
- Witness operation of engine 33 CFR 146.15 & 143.120(b)
46 CFR 108.560 & 160.156-21(a)(1)
- Witness launch and operation of rescue boat in water 33 CFR 146.15 & 143.120(b)
46 CFR 108.560 & 160.156-21(a)(1)
- Verify presence and stowage of required equipment 46 CFR 108.575
NVIC 02-92
- Examine release gear 33 CFR 143.120(b)
46 CFR 108.560, 160.156-7(a)(18), 160.133-21(a)(1)

☐ 35. Inspect boat davits

- Inspect condition of davit(s) and associated components 33 CFR 146.15(a)
46 CFR 108.553
- Verify approval markings 46 CFR 108.550(a)
46 CFR 160.115-17
- Verify operating instructions are posted 46 CFR 108.655
- Verify operator has unobstructed view of the survival craft during launching and recovery operations 46 CFR 108.553(j)
46 CFR 108.555(c)
- Verify falls are of adequate length for boat to reach water 46 CFR 108.550(f)(2)
46 CFR 108.553(c)
- Examine condition of falls, lay/spooling onto winch drum to ensure boat is hanging evenly in davit (e.g. dual-fall davits) 46 CFR 108.553(a)
46 CFR 108.553(e)
- Verify boat guides, bumpers and/or stops are not damaged/distorted 46 CFR 108.103
MSM II/B.1.P.3

- Witness operational test of limit switches 46 CFR 108.553(j)
46 CFR 111.95-7(c)
- Witness operational test of rescue boat davit under self-contained power 46 CFR 108.550(g)
- Verify retrieval speed is satisfactory for lifeboats designated as rescue boats 46 CFR 108.570(d) & (f)
MSM II/B.1.P.3.a & B.1.P.2.c

36. Inspect Emergency Position Indicating Radio Beacon (EPIRB), if installed

- Verify registration 46 CFR 108.650
47 CFR 80.1061(e) & (f)
- Verify hydro-static release expiration date MSM II/B.1.P.3.h
- Verify battery date 33 CFR 146.15(a)
MSM II/B.1.P.3.I(2)
- Verify markings 46 CFR 108.650
- Witness function test 33 CFR 146.15(a)
MSM II/B.1.P.3.I(1)

37. Inspect distress signals

- Verify type approval 46 CFR 160.136
CG-ENG-4 Guidelines
- Verify quantity 46 CFR 108.595(b)(1)
- Verify expiration date 33 CFR 146.15(a)
46 CFR 160.036-5(b)
- Verify stowage and markings 46 CFR 108.595(b)(2)

38. Inspect life jackets

- Verify type approval 46 CFR 108.580(b)
46 CFR 160.155
- Verify quantity 46 CFR 108.580(b)(1)
- Verify stowage 46 CFR 108.580(b)(2)
33 CFR 146.20(c)
- Verify markings 46 CFR 108.649(a)
MSM II/B.1.P.3.o
- Verify markings of stowage locations 46 CFR 108.646(a) & (b)
46 CFR 108.649(b) & (g)
- Examine light and whistle 46 CFR 108.580(b)(3)
33 CFR 146.15(b) & (c)
- Verify location and donning instructions 46 CFR 108.901(c)(4) & (5)

- Examine condition and suitability 46 CFR 160.006-2
33 CFR 146.15(a)

39. Inspect work vests

- Verify type approval 33 CFR 142.45
33 CFR 146.20
- Verify stowage 33 CFR 146.20(c)
46 CFR 108.636
- Examine condition and serviceability 33 CFR 146.20(d) & (e)
MSM II/B.1.P.2.I & B.1.P.3.m

40. Inspect (ring) life buoys

- Verify type approval 46 CFR 108.580(a)
- Verify quantity 46 CFR 108.580(a)
46 CFR 108.580(a)(2)
- Verify stowage 46 CFR 108.580(a)(1)
- Verify markings 33 CFR 146.135(e)
46 CFR 108.646
- Examine condition and suitability 33 CFR 146.15
MSM II/B.1.P.3.i
- Verify size and weight 46 CFR 108.580(a)(1)(iv)
46 CFR 160.150
- Examine line 46 CFR 108.580(a)(2)(i)
- Examine float lights 46 CFR 108.580(a)(2)(ii)
46 CFR 161.010
- Examine smoke signal 46 CFR 108.580(a)(1)(iv)
46 CFR 108.580(a)(2)(iii)
- Verify float lights and smoke signals are not located within hazardous/classified locations 46 CFR 111.105-5

Firefighting Systems

41. Inspect Structural Fire Protection (SFP)

- Verify locations are marked on Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
- Determine fire protection needed 46 CFR 108.133 thru .143
NVIC 09-97, Encl. 1
- Verify no unapproved SFP modifications 46 CFR 108.131
NVIC 09-97, Encl. 1

- ☐ 42. Inspect fixed fire detection and alarm system
 - Verify locations are marked on Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify fire detection and alarms are shown on general arrangement plans 33 CFR 143.120(a)
46 CFR 107.305(ii)
 - Verify presence of zone chart/diagram and instructions for operation and testing 46 CFR 108.405(c)(1)
 - Verify system is in operation with no faults indicated 46 CFR 108.404
 - Verify installation 46 CFR 108.407
 - Verify system approval 46 CFR 108.405(a)(1)
 - Witness operational test of audible and visual alarm 46 CFR 108.405(a)(2)
 - Verify fire detection and alarm are on emergency circuit 46 CFR 112.15-1(p)
 - Verify operation of smoke detectors 46 CFR 108.411

- ☐ 43. Inspect fireman's outfits
 - Verify locations are marked on Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify required number 46 CFR 108.497
33 CFR 146.15(a)
 - Verify approved self-contained breathing apparatus and spare charges 46 CFR 108.497(a)
33 CFR 146.15(a)
 - Verify approved flashlight 46 CFR 108.497(b)
33 CFR 146.15(a)
 - Verify approved oxygen and explosive meter 46 CFR 108.497(c)
33 CFR 146.15(a)
 - Verify lifelines 46 CFR 108.497(d)
33 CFR 146.15(a)
 - Verify boots and gloves 46 CFR 108.497(e)
33 CFR 146.15(a)
 - Verify approved helmet 46 CFR 108.497(f)
33 CFR 146.15(a)
 - Verify clothing 46 CFR 108.497(g)
33 CFR 146.15(a)

- 44. Inspect fire boundary closures
 - Verify door or shutter approval and compliance with boundary type 46 CFR 107.305(v)
NVIC 09-97 Encl 1/2.11.1
 - Witness operation (local and remote) of damper(s) and fire door(s) controls 46 CFR 108.143 & .181
46 CFR 111.103
 - Confirm damper(s) and fire door(s) close during ventilation shutdowns for machinery and accommodation spaces 46 CFR 108.181(b) & (d)
46 CFR 107.305(v) & (w)
 - Verify roll-down fire shutters function as designed in all modes of operation (manual, powered and/or automatic) NVIC 09-97, Encl 1/2.11.1
DIOM Manual

- 45. Inspect fire pump, prime movers, fire main & systems
 - Confirm locations with approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify numbers and adequate pressure 46 CFR 108.415
 - Verify relief valve installation 46 CFR 108.417(a) & (d)
 - Verify fitted with gauge 46 CFR 108.417(b) & (d)
 - Examine condition of components 46 CFR 61.15-15
 - Verify installation of machinery covers and guards 46 CFR 58.01-20
 - Verify set-point and operation of prime mover overspeed shut-down 46 CFR 58.01-5
ABS Rules 4-2-1/7.3.2
 - Verify fire main on an exposed deck is protected against freezing 46 CFR 108.429(b)

- 46. Inspect fire stations
 - Confirm locations with approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify number of hydrants 46 CFR 108.423
 - Verify hydrant equipment 46 CFR 108.423(d)
 - Verify hoses meet required length, size and type 46 CFR 108.425(a)
46 CFR 108.425(b)
 - Verify nozzle 46 CFR 108.425(c)
 - Verify low-velocity applicator 46 CFR 108.425(d)
 - Verify markings 46 CFR 108.633
 - Verify operation of fire monitors (when installed) 46 CFR 108.103

- Verify foam proportioner and valve alignment (when installed) 46 CFR 108.103
47. Inspect portable fire extinguishers
- Confirm locations with approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify servicing compliance 33 CFR 145.01(b)
NFPA 10/7.3.2
 - Verify locations, types and numbers 46 CFR Table 108.495
 - Verify condition of cylinder(s) and hose(s) 33 CFR 145.01(b)
NFPA 10/7.2.2. & 7.3
 - Verify markings 46 CFR 108.637
 - Verify proper mounting bracket 46 CFR 162.028-3(g)
48. Inspect semi-portable fire extinguishers
- Confirm locations with approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify servicing compliance 33 CFR 145.01(b)
NFPA 10/7.3.2
 - Verify installation 46 CFR Table 108.495
 - Verify condition of cylinders and hoses 33 CFR 145.01
NFPA 10/7.2.2 & 7.3
 - Verify types and quantities 46 CFR Table 108.495
49. Inspect fire axes
- Confirm location with approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify quantity 46 CFR 108.499
50. Inspect high pressure CO2 systems (including galley CO2 suppression systems)
- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify safety precautions are implemented prior to inspecting and/or servicing system(s) MSM II/C.2.1.5(b)
NVIC 09-00
 - Examine stowage of cylinders 46 CFR 108.451
NVIC 06-72 Encl. 1/II.B
 - Examine materiel condition of system components (cylinders, controls, piping, flexible loops, nozzles) 33 CFR 146.15
NVIC 06-72 Encl. 1/II.B & II.D

- Verify piping and nozzles are clear of obstructions 33 CFR 146.15
- Witness operational test of time delays, alarms, and shutdown of ventilation and prime mover 46 CFR 108.445
NVIC 06-72 Encl. 1/II.B
- Verify marking and warning signs are posted 46 CFR 108.626 & .627
46 CFR 108.629 & .631
- Verify operating instructions are posted, covering both remote, local and manual release 46 CFR 108.631(b)
- Verify installation of odorizer 46 CFR 108.446
- Verify operation of ventilation closures and stops 46 CFR 108.455
- Verify lockout valve provided on system protecting a space over 6,000 cu. Ft. volume 46 CFR 108.444

51. Inspect water mist systems

- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
- Verify system acceptance 46 CFR 108.103 (b)
- Witness manual operational test 33 CFR 146.15(a)
- Witness automatic operational test 33 CFR 146.15(a)
- Witness pump operations 33 CFR 146.15(a)
- Verify pump redundancy 33 CFR 146.15(a)
- Verify valve alignment is correct 33 CFR 146.15(a)
- Verify fresh water source (tank) level 33 CFR 146.15(a)
- Verify operating instructions are posted 33 CFR 146.15(a)
- Verify spray nozzles are not clogged or obstructed by portable equipment within protected spaces 33 CFR 146.15(a)
- Verify N2 bottles are adequately charged & maintained 33 CFR 146.15(a)

52. Inspect clean agent fire extinguishing system

- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
- Verify system plan approval 46 CFR 108.458
46 CFR 162.161

- Verify DIOM Manual is present and valid for installed system/arrangement 46 CFR 162.161-5 DIOM Manual
- Verify servicing completed as outlined in DIOM Manual 33 CFR 146.15(a) DIOM Manual
- Validate agent quantity and pressure of refillable cylinders 46 CFR 162.161-5 DIOM Manual
- Examine location and stowage of cylinders 46 CFR 162.161-4 46 CFR 147.60
- Examine condition of cylinder(s) and system hoses 33 CFR 146.15(a) DIOM Manual
- Verify piping and nozzles are clear of obstructions 33 CFR 145.15(a) DIOM Manual
- Witness functional test of time delays, alarms and shutdowns 33 CFR 146.15(a) DIOM Manual

□ 53. Inspect fixed foam extinguishing system

- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
- Verify approval 46 CFR 108.473
- Verify installation/arrangement 46 CFR 108.459
- Examine coamings to verify integrity with no modifications 46 CFR 108.461
- Witness pump operation and verify water supply requirements 46 CFR 108.467
- Witness foam generation using designated nozzles 33 CFR 146.15(a)
- Witness water flow through all lines and nozzles (no foam) 33 CFR 146.15(a)
- Verify piping, valves and fittings are adequately supported with no modifications from original approved design 46 CFR 108.475 & 473
- Verify spray nozzles are not damaged or corroded 33 CFR 146.15(a) 46 CFR 108.459 & 475(c)
- Verify quantity of foam concentrate and rating for protected areas (alcohol resistant foam) 46 CFR 108.469
- Verify controls and valves are accessible 46 CFR 108.473(b) 46 CFR 108.473(c)
- Verify operating instructions are posted 46 CFR 108.631(b)
- Verify valve alignment is correct and/or properly labeled 46 CFR 108.631(b)

54. Inspect galley suppression system using non-CO2 chemical agents
- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify approval/UL listing for chemical systems (e.g. R-102 systems) 46 CFR 108.103
NVIC 06-70
 - Verify installation/arrangement with no modifications DIOM Manual
 - Verify nozzles are not damaged, corroded and have dust/grease caps DIOM Manual
 - Verify system is energized and ready to discharge DIOM Manual
 - Verify remote controls are present, accessible and marked 46 CFR 108.631
DIOM Manual
 - Verify operating instructions are posted and legible 46 CFR 108.631
DIOM Manual
55. Inspect deluge system
- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Identify locations MOA OCS-04 Annex I/12
46 CFR 108.103
 - Verify condition of nozzles and piping 33 CFR 146.15(a)
56. Inspect automatic sprinkler system
- Verify on approved Safety Plan (Fire Control Plan) 46 CFR 107.305(v)
 - Verify piping system condition 46 CFR 108.430
46 CFR 108.101(b)
 - Verify condition of sprinkler heads & deflectors and temperature rating of ampoules 46 CFR 108.101(b)
NFPA 13 /4-3.1.3, 4-8.4.2 & 9-4
 - Verify operation of alarms 46 CFR 108.101(b)
NFPA 13-1996/9-4.12
 - Verify presence and condition of pressure gauge(s) 46 CFR 108.101(b)
NFPA 13-1996/3-1.1
 - Verify presence and condition of relief valve(s) 46 CFR 108.101(b)
NFPA 13-1996/3-1.2
 - Verify presence of spare sprinkler heads 46 CFR 108.101(b)
NFPA 13-1996/9-2.3

- Verify presence of spare fusible elements (ampoules) or detection devices 46 CFR 108.101(b)
NFPA 13-1996/9-3.2(b)
- Verify instructions for operation, inspection, maintenance and testing are provided/stored with spare equipment 46 CFR 108.101(b)
NFPA 13-1996/9-9.1.5

Heli-Deck

- ☐ 57. Inspect helideck
 - Verify applicability MSM II/G.4.H
 - Verify helicopter deck lights operation and arrangement 46 CFR 108.241(a)(2)
CG-ENG Policy Ltr 03-15
 - Verify periphery netting arrangement and condition 46 CFR 108.235(e)
CG-ENG Policy Ltr 03-15
 - Verify deck markings 46 CFR 108.241(a)(3)
46 CFR 108.653
 - Verify deck is free of obstructions 46 CFR 108.235(d)(4)
CG-ENG Policy Ltr 03-15
 - Verify main and emergency personnel access/egress routes 46 CFR 108.235(f)
CG-ENG Policy Ltr 03-15
 - Verify wind indicator 46 CFR 108.241(a)(1)
CG-ENG Policy Ltr 03-15
 - Verify skid-resistant surface 46 CFR 108.235(d)(1)
CG-ENG Policy Ltr 03-15
 - Witness operation of H2S warning light, if installed CG-ENG Policy Ltr 03-15
- ☐ 58. Inspect helideck fire fighting system
 - Verify foam agent (if applicable/installed) 46 CFR 108.487
CG-ENG Policy Ltr 03-15
 - Verify locations of hydrants 46 CFR 108.425(d), .486 & .487(d)
CG-ENG Policy Ltr 03-15
 - Verify foam test reports 33 CFR 146.15
 - Verify portable fire extinguishers and condition 33 CFR 145.01
NFPA 10/7.2.2. & 7.3
 - Verify semi-portable fire extinguishers 33 CFR 145.01
NFPA 10/7.2.2. & 7.3
 - Examine equipment and condition 33 CFR 146.15
 - Verify amount of foam available 46 CFR 108.487(a) & (b)
46 CFR 108.489
 - Verify location of operating controls 46 CFR 108.487(c)

- 59. Inspect helideck refueling station
 - Examine fuel storage facilities 46 CFR 108.237
CG-ENG Policy Ltr 03-15
 - Verify nozzle is deadman type 46 CFR 108.239(a)
CG-ENG Policy Ltr 03-15
 - Verify hose has a static grounding device 46 CFR 108.239(c)
CG-ENG Policy Ltr 03-15
 - Verify fuel pump has a "running" indicator light 46 CFR 108.239(d)
CG-ENG Policy Ltr 03-15
 - Verify fuel transfer pump shut-offs are operational 46 CFR 108.239(e)
CG-ENG Policy Ltr 03-15
 - Examine containment and system for leaks 46 CFR 108.239(f)
CG-ENG Policy Ltr 03-15
 - Verify condition fuel hose 46 CFR 108.239(g)
CG-ENG Policy Ltr 03-15
 - Verify operation of fuel hose reel 46 CFR 108.239(b)
CG-ENG Policy Ltr 03-15
 - Verify markings 46 CFR 108.653(a)
46 CFR 108.653(b)

Machinery Equipment

- 60. Inspect bilge system
 - Verify location of pumps 46 CFR 56.50-55(b)
46 CFR 56.50-55(e)(2)
 - Examine manifolds, valves and piping 46 CFR 56.50-50(c)
46 CFR 56.50-50(d)
 - Witness operational test of pumps 46 CFR 56.50-50(a)(1)
 - Verify remote valve controls are fitted with nameplates 46 CFR 56.50-1(g)(2)(i)
 - Verify remote valve indicators 46 CFR 56.50-1(g)(2)(iii)
 - Verify bilge suctions are fitted with strainers 46 CFR 56.50-50(g)
 - Verify installation of machinery covers and guards 46 CFR 58.01-20

- 61. Inspect ballast system
 - Verify pump condition and operation 46 CFR 56.50-50
 - Examine manifolds, valves and piping arrangement and structural integrity 46 CFR 56.50-50(h) thru (k)

- Verify remote valve controls are fitted with nameplates 46 CFR 56.50-1(g)(2)(i)
- Verify operation of remote valve indicators 46 CFR 56.50-1(g)(2)(iii)
- Verify installation of machinery covers and guards 46 CFR 58.01-20

62. Inspect fuel oil service and transfer systems

- Verify transfer procedures are posted or available 33 CFR 155.720
33 CFR 155.740(c)
- Verify installation, arrangement and condition of piping, manifolds, and filters 46 CFR 56.50-75
46 CFR 56.50-60
- Verify piping, flange or mechanical joints with a temperature of 150° F or more are fitted with a suitable shield 46 CFR 56.50-1(k)
- Examine nonmetallic flexible hoses and fittings 46 CFR 56.50-75(a)(2)
46 CFR 56.50-70(b)(2)(i)
- Verify operation of transfer pumps and remote shutdowns 46 CFR 58.01-25
- Witness test of remotely operated fuel oil system valves 46 CFR 56.50-60(d)

63. Inspect unfired pressure vessels (UPVs)

- Verify data plate(s) are legible 46 CFR 54.10-20
- Determine if UPV is exempt from CG inspection 46 CFR 54.01-15
BSEE/CG MOA OCS-04
- Verify external & internal inspection and/or hydrostatic test needs 46 CFR 61.10-5(b)
46 CFR 61.10-5(d)
- Examine externally 46 CFR 61.10-5(b)(1)
- Examine internally (when accessible) 46 CFR 61.10-5(b)(2)
46 CFR 54.01-35
- Verify hydrostatic testing under pressure 46 CFR 61.10-5(d)
46 CFR 61.10-5(e)(4)
- Verify installation and operation of pressure gauges 46 CFR 54.15-5(f)
- Verify installation and operation of pressure- relieving devices 46 CFR 54.15-5
46 CFR 61.10-5(i)

64. Inspect main service gas turbine generators & prime movers

- Examine exhaust insulation 46 CFR 58.10-15(c)(2)
- Verify cooling and ventilation 46 CFR 58.10-15(e)

- Verify additional fire extinguishing system (if installed) 46 CFR 58.10-15(i)
- Verify operation of hand trip gear (local and remote control) for shutting off fuel 46 CFR 58.03-1(c)
ABS Rules 4-2-3/7.9
- Verify turbine is certified 46 CFR 58.03-1(c)
ABS Rules 4-2-3/13.3
- Verify installation of machinery guards 46 CFR 58.01-20

□ 65. Inspect operation of main service gas turbine generators & prime mover alarms & shutdowns

- Witness operational test of overspeed shutdown 46 CFR 58.10-15(f)(1)(i) & .03-1(c)
ABS Rules 4-2-3/7.7.2(i)
- Witness operational test of low lubrication oil shutdown 46 CFR 58.10-15(f)(1)(ii) & .03-1(c)
ABS Rules 4-2-3/7.7.2(iii)
- Witness operational test of excessive exhaust gas temperature shutdown & alarm 46 CFR 58.10-15(f)(2)(i) & .03-1(c)
ABS Rules 4-2-3/7.7.2(viii)
- Witness operational test of excessive lubricating oil temperature alarm 46 CFR 58.10-15(f)(2)(ii)
46 CFR 58.03-1(c)
- Witness operational test of excessive speed alarm 46 CFR 58.10-15(f)(2)(iii)
- Witness operational test of the reduced lubricating oil pressure alarm 46 CFR 58.10-15(f)(2)(iv)
46 CFR 58.03-1(c)
- Witness operational test of remote manually operated shutdown device 46 CFR 58.10-15(f)(3)

□ 66. Inspect temporary and auxiliary diesel generators

- Determine applicability 46 CFR 110.01-1(b)
- Examine condition of components 46 CFR 61.20-3(a)
- Verify installation of machinery covers and guards 46 CFR 58.01-20
46 CFR 108.223
- Verify set point and operation of overspeed shutdown 46 CFR 111.12-1(b)
ABS Rules 4-2/1.7.5.3
- Verify set point and operation of lube oil shut- down 46 CFR 111.12-1(c)
- Verify operation of reverse power relays 46 CFR 111.12-11(f)
- Examine nonmetallic flexible hoses 46 CFR 56.60-25(b)

- 67. Inspect emergency generators & prime movers
 - Determine applicability 46 CFR 112.05-5
 - Verify starting system(s) 46 CFR 112.50-1(e)
46 CFR 112.50-3 thru .50-7
 - Verify operations of auto-start and auto-bus transfer functions 46 CFR 112.50-1(d) & (k)
MSM II/B.1.L.2
 - Examine condition 46 CFR 61.20-3(a)
 - Verify installation of machinery covers and guards 46 CFR 58.01-20
 - Verify operation of alarms 46 CFR 112.50-1(h)
 - Verify gauges 46 CFR 58.03-1(c)
ABS Rules 4-2-1/7.17
 - Verify operation of remote fuel shutoff valve(s) 46 CFR 56.50-60(d)
 - Verify set point and operation of overspeed shut-down 46 CFR 111.12-1(b) & 112.50-1(g)
46 CFR 110.10-1(b)
 - Verify set point and operation of low lubricating oil shut-down 46 CFR 111.12-1(c)
46 CFR 112.50-1(g)

- 68. Inspect air compressors
 - Determine applicability 46 CFR 110.01-1(b)
 - Examine condition of components 46 CFR 61.20-3(a)
 - Verify installation of machinery covers and guards 46 CFR 58.01-20
 - Verify motor markings 46 CFR 111.25-5
 - Verify means of disconnecting the motor 46 CFR 111.70-1(c)
 - Verify relief valve installation 46 CFR 56.07-10(b)
 - Witness relief valve test 46 CFR 61.10-5(i)

Electrical Systems

- 69. Inspect switchboards
 - Determine applicability 46 CFR 110.10-1
 - Verify meters and controls installed and operational 46 CFR 111.30-25(b)(4), (b)(5)
46 CFR 111.30-25(e)(2)
 - Verify equipment for parallel operation 46 CFR 111.30-25(d)
 - Verify ground detection 46 CFR 111.30-25(e)(1)

- Verify non-conductive handrail and deck covering 46 CFR 111.30-1
46 CFR 111.30-11
- Verify rear access control 46 CFR 111.30-1
IEEE Std 45/8.2
- Verify drip shields present 46 CFR 111.30-5(b)

70. Inspect motor controllers

- Verify enclosure type 46 CFR 111.01-9
46 CFR 111.70-3(a)
- Verify markings 46 CFR 111.70-3(d)(1)
- Verify wiring diagram is affixed to controller enclosure 46 CFR 111.70-3(d)(2)

71. Inspect ventilation system(s) in hazardous areas

- Verify arrangements of hazardous area openings 46 CFR 108.171
46 CFR 108.173
- Verify arrangements for ventilation 46 CFR 108.185
- Examine condition of boundaries 46 CFR 108.171
46 CFR 108.173
- Verify loss ventilation alarm 46 CFR 108.175(a)(3), (b)(3)
46 CFR 108.175(c)(3)

72. Inspect emergency switchboards

- Determine applicability 46 CFR 110.01-1
- Verify meters installed and operational 46 CFR 111.30-29(g)(1), (2) & (4)
- Verify ground detection 46 CFR 111.30-29(g)(3)
- Verify non-conductive handrail and deck covering 46 CFR 111.30-11
46 CFR 111.30-1
- Verify rear access control 46 CFR 111.30-1
46 CFR 110.10-1(j)(6)
- Verify drip shields present 46 CFR 111.30-5(b)
- Witness operation of test switch 46 CFR 111.30-29(b)

73. Inspect battery installations

- Determine battery categories 46 CFR 111.15-3
- Verify ventilation 46 CFR 111.15-10
- Verify installation 46 CFR 111.15-5
- Verify battery room bulkhead penetrations 46 CFR 111.15-20(a)
- Verify cable terminations 46 CFR 111.15-20(b)

- Examine battery charger 46 CFR 111.15-30
 - Verify operation of power ventilation interlock with charger 46 CFR 111.15-10(b)(4)
74. Inspect lighting systems and fixtures
- Verify arrangement 46 CFR 111.75-15
 - Verify illumination 46 CFR 111.75-15(c)
 - Verify condition of light fixtures 46 CFR 111.75-20
 - Verify branch over-current protection 46 CFR 111.75-5(d)
75. Inspect emergency lighting
- Verify location 46 CFR 112.15-5(a)
 - Verify markings 46 CFR 108.639
 - Verify operation 46 CFR 112.15-5(a)
 - Verify arrangement of rescue boat and survival craft lighting circuits 46 CFR 112.15-1(g)
 - Verify operation of rescue boat/survival craft embarkation and launching lighting 46 CFR 112.15-1(g)
76. Inspect panel boards/distribution panels
- Verify location and watertight 46 CFR 111.40-1
IEEE Std 45/17.1
 - Verify blanks are installed (as needed) 46 CFR 111.01-1(a)(2)
 - Verify circuit directory provided at panel 46 CFR 111.40-1
46 CFR 111.40-11(b)
 - Verify panelboards are numbered 46 CFR 111.40-1
46 CFR 111.40-11(a)
 - Verify locking device 46 CFR 111.40-9
 - Verify circuit breakers have correct temperature rating 46 CFR 111.54-1(e)
77. Inspect electrical cables, wires and fixtures
- Verify no hazardous conditions exist 46 CFR 111.01-1(a)(2)
 - Verify supports for vertical and horizontal installations 46 CFR 111.60-5(a)(1)
IEEE Std 45/25.5
 - Verify radius of bends 46 CFR 111.60-5(a)(1)
IEEE Std 45/25.6

- Verify condition of connections and terminations 46 CFR 111.60-17
- Verify number and condition of receptacle outlets 46 CFR 111.79-1
- Verify marine grade cable utilized 46 CFR 111.60-1
- Verify condition of outlet and junction boxes 46 CFR 111.81
- Verify no temporary wiring installations MSM II B.1.J.5.h

78. Inspect temporary emergency power loads

- Identify temporary emergency loads 46 CFR 112.15-1
- Verify temporary power source has sufficient capacity 46 CFR 112.37-1
- Verify alternating current temporary source of power conversion equipment is installed in duplicate (if applicable) 46 CFR 112.40-1

79. Inspect industrial equipment/systems

- Identify industrial equipment/system 46 CFR 58.60-1
46 CFR 111.107-1
- Verify pressure vessels are marked 46 CFR 58.60-3
46 CFR 54.01-5(c)(3)
- Verify all moving parts have adequate guards, shields, insulation or similar devices to protect personnel 46 CFR 58.60-13
- Verify electrical installations are installed and maintained to protect crew from electrical hazards 46 CFR 111.107(b)(3)
46 CFR 111.01-1(a)(2)
- Verify electrical installations are maintained per approved plans 46 CFR 111.107(b)(3)
46 CFR 111.01-1(a)(3)
- Verify electrical installations are installed to avoid damage 46 CFR 111.107(b)(3)
46 CFR 111.01-3
- Verify prime mover's overspeed shut-down 46 CFR 111.107(b)(5)
46 CFR 111.12-1(b)
- Verify primer mover's loss of lubricating oil pressure shut-down 46 CFR 111.107(b)(5)
46 CFR 111.12-1(c)
- Verify equipment/system meets hazardous location requirements 46 CFR 111.107-1(b)(6)
46 CFR 111.105

- 80. Inspect multi-cable transits (MCTs)
 - Verify multi-cable penetrations installed correctly
 46 CFR 111.60-5(a)(1)
IEEE Std 45/25.7
 - Verify non-metallic stuffing tubes are not installed in fire boundaries
 46 CFR 111.60-5(a)(1)
IEEE Std 45/25.7
 - Verify non-watertight boundaries have proper bushing installed
 46 CFR 111.60-5(a)(1)
IEEE Std 45/25.7
 - Verify packing of terminal or stuffing tube on watertight penetrations
 MSM II/B.1.J.4(b)(2)

- 81. Inspect hazardous location plan
 - Verify presence of plan
 46 CFR 107.305(aa) & (ii)
46 CFR 109.121(23)
 - Verify plan is approved by Coast Guard or recognized organization
 46 CFR 107.305(aa)
46 CFR 110.25-1(i)
 - Verify plan identifies all hazardous areas
 46 CFR 110.25-1(i)
46 CFR 108.170 thru .175

- 82. Inspect intrinsically safe electrical equipment in hazardous locations
 - Verify components/equipment are approved
 46 CFR 111.105-11
UL 913
 - Verify intrinsically safe components (cables, boxes, etc.) are separated from non- intrinsically safe equipment
 46 CFR 111.105-11(b)
IEC 60079-11 (6.3)
 - Verify equipment labeling
 46 CFR 111.105-3
IEC 60079-11 (12.2)
 - Verify equipment has approved control drawings
 46 CFR 111.105-1
NEC 500.2 & 504.10(A)

- 83. Inspect non-intrinsically safe electrical equipment in hazardous locations
 - Verify installed equipment is listed, certified or purged
 46 CFR 111.105-7
 - Confirm equipment as marked is acceptable for location installed (Zone or Division)
 46 CFR 111.105-3 & .105-5
46 CFR 111.105-1
 - Verify no unauthorized modifications or damage
 46 CFR 111.105-3
46 CFR 111.105-5
 - Verify equipment has appropriate surface temperature class for gases or vapors that could be encountered in that space
 46 CFR 111.105-3
NEC 2002/500.8

- Verify wiring method 46 CFR 111.105-17
NEC 2002/501.4
- Verify all cable entries are approved and match enclosure/equipment rating 46 CFR 111.105-17(c) & (d)
NEC 2002/501.4
- Verify equipment is protected against water and particulate ingress 46 CFR 111.01-9
IEC 60529
- Verify arrangement for purge and pressurized equipment 46 CFR 111.105-7(b)
NFPA 496
- Verify no obstructions around flameproof boxes 46 CFR 111.105-9
IEC 60079-1
- Verify fans for ventilation are non-sparking type 46 CFR 111.105-21

84. Inspect machinery in hazardous areas

- Determine applicability 46 CFR 111.108-1(a)
- Verify machinery is approved/certified for hazardous areas 46 CFR 111.108-3(g)
ASTM F2876-10/9
- Verify machinery is maintained as approved/certified 46 CFR 111.108-3(g)
ASTM F2876-10/10.1
- Verify annual temperature verification completed 46 CFR 111.108-3(g)
ASTM F2876-10/10.2

85. Inspect elevators

- Verify emergency stop switch and alarm 46 CFR 111.91-1
ASME A17.1/2.26.2.5
- Examine emergency exit stop switch and signal 46 CFR 111.91-1
ASME A17.1/2.14.1.5.1(f)
- Examine emergency stop switch signal 46 CFR 111.91-1
ASME A17.1/2.27.1.2
- Examine gasket 46 CFR 111.91-1
ASME A17.1/2.11.19
- Verify elevator machinery, controls and alarms on emergency power 46 CFR 112.15-5(b)
- Verify capacity and data plate 46 CFR 111.91-1
ASME A17.1/2.16.3
- Examine fire resistive construction 46 CFR 111.91-1
ASME A17.1/2.1.1.1
- Examine emergency exit 46 CFR 111.91-1
ASME A17.1/2.14.1.5
- Verify emergency communications 46 CFR 111.91-1
ASME A17.1/2.27.1.1

Structural/Watertight Integrity

- ☐ 86. Inspect hatches and class 1 watertight doors
 - Determine applicability 46 CFR 108.114 & .301
46 CFR 170.001(a)(1)
 - Verify condition of knife edges MSM II/B.1.E.5.a
46 CFR 170.270(b)
 - Verify condition of gasket material MSM II/B.1.E.5.a
46 CFR 170.270(b)
 - Verify watertight integrity between gasket and knife edge MSM II/B.1.E.5
46 CFR 174.100(c)(2)
 - Verify condition and operation of hinges and dogging devices 46 CFR 170.248(b)
46 CFR 174.100(c)(1)

- ☐ 87. Inspect class 2 and 3 watertight doors
 - Determine applicability 46 CFR 108.114 & 108.301
46 CFR 170.001(a)(1)
 - Verify operation of local controls 46 CFR 174.100(e)
ASTM F1197/7.4
 - Verify operation of remote controls ASTM F1197/7.5
ASTM F1197/8.1.2
 - Verify condition of replaceable interface between door and frame assembly 46 CFR 174.100(e)(1)
ASTM F1196/S1.2.1
 - Verify operation of alarms ASTM F1197/11.5
 - Verify closing times ASTM F1197/11.4
ASTM F1197/11.4.1
 - Verify nameplate ASTM F1196/11.1
ASTM F1196/S4
 - Verify watertight integrity ASTM F1196/S1
 - Verify operation of doors under reserve power/manual control 46 CFR 174.100(e)(3)
ASTM F1197/S4.1

- ☐ 88. Inspect watertight bulkheads and penetrations
 - Determine applicability 46 CFR 108.301
46 CFR 170.001(a)(1)
 - Verify locations 46 CFR 174.100(a)
 - Verify ability to seal 46 CFR 56.50-1(a)
MSM II/B.1.E.5
 - Verify sealing materials approved 46 CFR 56.50-1(a)

Pollution Prevention

- 89. Inspect Marine Sanitation Devices (MSD)
 - Determine applicability 40 CFR 122 & 435
BSEE/USCG MOA OCS-04
Annex 1/17
 - Verify manufacturer's instructions available 33 CFR 159.57
 - Verify system is being maintained and operated in accordance with manufacturer's instructions 33 CFR 159.57
 - Verify MSD is approved 33 CFR 159.7
 - Verify adequate capacity 33 CFR 159.57(b)(8)
 - Verify 75% volume indicator 33 CFR 159.83
 - Verify piping and wiring 33 CFR 159.97
 - Verify operating instructions, safety precautions and warning placard posted 33 CFR 159.59

- 90. Inspect pollution prevention equipment and documentation
 - Determine applicability 33 CFR 151.05
 - Verify adequate communication between participants in transfer operations. 33 CFR 155.785
 - Verify transfer hoses have been tested and marked 33 CFR 154.500
33 CFR 155.800
 - Verify locations of pollution/MARPOL placards 33 CFR 155.450
 - Verify condition of hose and manifold connections 33 CFR 156.170
 - Verify condition and size of containment 33 CFR 155.320
MSM II/B.6.D.6
 - Verify mechanical closures are available for each containment 33 CFR 156.120(n)
33 CFR 156.120(o)
 - Verify signed copies of Declaration of Inspection are available 33 CFR 156.150(f)
MSM II/B.6.E.6

- 91. Inspect garbage handling equipment
 - Verify placard(s) posted 33 CFR 151.59
 - Verify plastics retained or incinerated 33 CFR 151.55

- Examine food grinder/comminuter(s) 33 CFR 151.73
33 CFR 151.75



92. Verify compliance with prevention of unauthorized oil discharges to marine environment on location (Operating under a National Pollutant Discharge Elimination System (NPDES) permit)

- Verify electronic Notice of Intent (eNOI) Form 33 CFR 151.10(h) & 40 CFR 122.6
- E-mail Notification from EPA is onboard BSEE/USCG MOA OCS-04 Annex 1/17
- Confirm eNOI Form E-mail lists the name of the FOF, the NPDES ID# and proper Lease Block name/number BSEE/USCG MOA OCS-04 Annex 1/17
MSM II/G Pg G1-118 Diagram 1
- Verify COI exam date is within the NPDES' effective date and expiring date on the eNOI Form BSEE/USCG MOA OCS-04, Annex 1/Item 17
MSM II/G Pg G1-118 Diagram 1
- Scan copy of eNOI Form E-mail into MISLE case file MISLE User Guide
- Document discrepancies in MISLE narrative MISLE User Guide

Topside Equipment



93. Inspect foghorn(s)/sound signals

- Verify required signal rating for facility's classification 33 CFR 143.15
33 CFR 67.01-15
- Verify signal is properly installed 33 CFR 67.10-5(a)
- Verify proper signal characteristics 33 CFR 67.10-1(b)
- Verify signal operational requirements 33 CFR 67.10-10(a)
- Witness operational test 33 CFR 67.10-10



94. Inspect obstruction lights

- Verify proper arrangement 33 CFR 143.15
33 CFR 67.05-1
- Verify operating characteristics 33 CFR 67.05-10
33 CFR 67.05-5



95. Inspect hull markings

- Verify placement of hull markings 46 CFR 108.661(a)
- Verify markings are of contrasting color to hull 46 CFR 108.661(c)(2)

- 96. Inspect tank vents
 - Verify vent piping installation and condition 46 CFR 56.50-85
 - Determine acceptable type of vent closure installed 46 CFR 56.50-85(a)(7)(i), (ii) & (iii)
 - Verify means of closing vents are operable 46 CFR 56.50-85(a)(7)
 - Examine flame screens 46 CFR 56.50-85(a)(8)

- 97. Inspect means of escape, rails and general workplace conditions
 - Examine grating 33 CFR 142.84 & .87
 - Verify vertical ladder installation 46 CFR 108.160
 - Examine stairway installation 46 CFR 108.159
 - Examine guardrails 46 CFR 108.217
46 CFR 108.219
 - Examine storm rail installation/locations 46 CFR 108.221

- 98. Inspect air ports and ventilation closures
 - Verify covers are readily available and operational 46 CFR 108.114 (a)& (b)
NVIC 09-97 Ch-1 Section 3.7
 - Examine condition of internal openings 46 CFR 108.114 (c)
NVIC 09-97 Ch-1 Section 3.7
 - Examine condition of external openings 46 CFR 108.114 (d)
NVIC 09-97 Ch-1 Section 3.7

Cargo Systems

- 99. Inspect marine portable tanks (MPTs)
 - Verify DOT labeling/placards 49 CFR 172.326
 - Verify stowage and segregation 49 CFR 171.25(b)(2)

- 100. Inspect cranes
 - Verify operation of boom stop 46 CFR 108.601
API RP 2C/10.1
 - Verify operation of controls 46 CFR 108.601
API RP 2C/8.2
 - Verify load charts are posted 46 CFR 108.601(a)
API RP 2C/2.4
 - Verify boom angle indicators function 46 CFR 108.601
API RP 2C/10.1

- Examine hydraulic fittings and hoses 33 CFR 143.120(b)
46 CFR 58.30-1(a)(11)
- Examine wire rope 46 CFR 108.601
API RP 2C/5.1 thru 5.6
- Examine sheaves 46 CFR 108.601
API RP 2C/5.8 thru 5.10
- Verify control functions marked 46 CFR 108.601(b)(1)
- Verify operation of instruments' built-in lighting 46 CFR 108.601(b)(2)

Hull Inspection

101. Inspect hull structure

- Examine visible structure for wastage, defect(s) and damage 33 CFR 143.120(b)
46 CFR 108.113
- Verify thru-hull fittings have been inspected IAW facility procedures 33 CFR 140.101 (d)
46 CFR 108.114 (c) ii 2
- Verify wastage/corrosion are within acceptable limits for the facility structure 33 CFR 140.101(d)
46 CFR 108.113
- Verify repairs are done IAW facility structural design 33 CFR 143.120(b)
46 CFR 108.113

Stability & Ballast Control

102. Evaluate compliance with stability protocols in Marine Operating Manual (MOM)

- Verify instructions on the use of stability data 46 CFR 107.305(ii)
46 CFR 109.121(b)(4)
- Verify Control Room/BCO copy is approved as referenced in CG approval letter 46 CFR 107.305(ii)
46 CFR 170.120
- Verify Load Management Program/software (LMP) utilized for stability management is referenced 46 CFR 107.305(ii)
46 CFR 109.121(b)(3) thru (11)
- Verify LMP lightship values match approved MOM/stability letter values 46 CFR 107.305(ii)
46 CFR 170.120
- Verify electronic inputs into LMP are active/accurate (tank level indicators, TTMS, draft/freeboard indicators) 46 CFR 107.305(ii)
46 CFR 109.121(b)(11)

- Review stability summary logs/records to verify no anomalies or warnings were present (e.g. phantom weights & abnormal changes in ballast levels) 46 CFR 107.305(ii)
46 CFR 109.121(b)(3) thru (11)
- Verify variable deck load surveys/logs (frequency conducted, data entered into LMP and accuracy) 46 CFR 107.305(ii)
46 CFR 109.121(b)(5)
- Review lightship changes and certified weights, logs and LMP entries (documents, accountability & percentage of lightship variation) 46 CFR 170 Subpart F

103. Inspect Tendon Tension Monitoring System (TTMS)

- Verify TTMS is listed, described, operated and maintained in accordance with Marine Operating Manual 46 CFR 107.305(ii)
46 CFR 109.121(a) & (b)(4)
- Verify TTMS is fully functional & active 46 CFR 107.305(ii)
46 CFR 109.121(a) & (b)(4)
- Verify each TTMS tendon load cell is active, calibrated and accurate 46 CFR 107.305(ii)
46 CFR 109.121(a) & (b)(4)

104. Evaluate crew familiarity with stability and the Marine Operating Manual (MOM)

- Verify Ballast Control Operator (BCO) familiarity with/use of MOM stability section and hydrostatic tables 46 CFR 11.470 & .474
46 CFR 107.305(ii)
- Verify BCO familiarity with LMP functions, system backups and authorities to change specific entries (variable deck load, lightship values, etc.) 46 CFR 11.470 & .474
46 CFR 107.305(ii)
- Verify BCO has access to manual stability calculation forms and can use the same to figure/verify facility stability 46 CFR 107.305(ii)
46 CFR 109.121(b)(4) thru (12)

Emergency Drills

105. Evaluate fire drill

- Coordinate w/ Offshore Installation Manager (OIM) a firefighting drill scenario to adequately test procedures and performance 33 CFR 146.125(a)
MSM II/B.1.P.v(1)(a)

- Verify firefighting drill procedures and crew's ability to perform assigned duties 33 CFR 146.125(a)
MSM II/B.1.P.3.v
- Verify all personnel are accounted for during emergency muster 33 CFR 146.130(a)
46 CFR 108.901(b)(7)
- Verify crew's ability to organize into an effective team to respond to an emergency 33 CFR 146.125(b)
MSM II/B.1.P.3.v(2)
- Verify effective communication between crew on scene and (OIM) 33 CFR 146.125(a)
- Verify required gear for fireman outfits is present 46 CFR 108.497
- Verify donning of fireman outfits 33 CFR 146.125(a)
MSM II/B.1.P.3v(2)
- Verify crew is familiar with firefighting equipment 33 CFR 146.125(a) & (b)
MSM II/B.1.P.v(2)
- Verify crew's ability to maintain fire boundaries 33 CFR 146.125(a)
- Determine acceptable drill performance 33 CFR 146.125(a)
MSM II/B.1.P.3.v(4)

106. Evaluate abandonment drill

- Coordinate with OIM an abandon drill scenario to adequately test procedures and performance 33 CFR 146.125(a)
- Evaluate abandon drill procedures and crew's ability to perform assigned duties 33 CFR 146.125(b)
MSM II/B.1.P.3.v(1)(c)
- Verify all personnel accounted for during emergency muster 33 CFR 146.130(a)
- Verify crew is proficient in donning lifejackets 33 CFR 146.125(a)
MSM II/B.1.P.3.v(1)(a)
- Examine emergency lighting at muster station, route and embarkation station 46 CFR 111.75-16
46 CFR 112.15-5
- Verify operation of lifeboat davits 33 CFR 146.125(a)
- Verify operation of lifeboat engines 33 CFR 146.15(a)
- Determine acceptable drill performance 33 CFR 146.125(a)
MSM II/B.1.P.3.v(4)

Follow-Up

- ☐ 107. Issue deficiencies
 - Identify deficiencies 46 CFR 2.01-10(a)
MSM II/A.2.C.4
 - Determine deficiency reference cite 46 USC 3313(b)
CVC-PR-001(1) E.8.e & f
 - Discuss deficiencies and corrective measures/timeframe with facility OIM or representative 46 CFR 2.01-10
MSM II/A.2.C.2
 - Issue signed CG-835V to facility OIM or representative CVC-PR-001(1) E & F
MPS-PR-SEC-05

- ☐ 108. Verify deficiency corrections
 - Determine an appropriate verification method for identified deficiencies MSM II/A.2.C.4
 - Verify corrections meet appropriate regulations MSM II/A.2.C.4.a
 - Clear deficiencies in MISLE activity MSM II/A.2.C.2.d
MMS MISLE User Guide

- ☐ 109. Issue/endorse certificates
 - Issue/endorse certificates, as applicable MPS-PR-SEC-05
 - Obtain a copy of all endorsed certificates for the facility's file MSM I/12.E.7

- ☐ 110. Complete Maritime Information for Safety and Law Enforcement (MISLE) Activity
 - Open existing activity in MISLE MSM I/12.G.2.a
MMS MISLE User Guide
 - Update inspection results MSM I/12.H.1
MMS MISLE User Guide
 - Update activity narrative MSM I/12.H.1
MMS MISLE User Guide
 - Amend Certificate of Inspection MSM I/12.H.1
MMS MISLE User Guide
 - Print new or amended Certificate of Inspection and deficiency letter MMS MISLE User Guide
 - Change activity status to "Open-Submitted for Review" MSM I/12.H.1
MMS MISLE User Guide

Section 4: Appendices

Confined Space Entry Checklist

Sources for Policy

- COMDTINST M5100.47, Chapter 6, change 11
- MSM Vol. 1, Chapter 10 & Appendix A, C, D to chap. 10
- MSM Vol. 2 Ch. 1, Section D, Chapter 6
- 29 CFR 1915, Part B

A Confined Space for the purpose of this checklist is:

A space that possess all of the following three distinct characteristics –

1. Is large enough and so configured that an employee can bodily enter & perform assigned work;
2. Has limited or restricted means for entry or exit; and
3. Is not designed for continuous employee occupancy

Hazards associated with confined space entry

- Oxygen deficient or enriched atmosphere
- Flammable atmosphere
- Toxic atmosphere
- Extreme temperature (hot or cold)
- Engulfment hazard (such as grain, coal, sand, gypsum or similar material)
- Extreme noise
- Slick / wet surfaces & tripping hazards
- Falling objects
- Potential for rapidly changing atmosphere

USCG Confined Space Entry Requirement

A certified Marine Chemist **shall** conduct the initial inspection & certify all confined spaces on merchant vessels “Safe for Workers” before entry by USCG personnel.

In rare circumstances, if a Marine Chemist is not available, the OCMI may designate a USCG Competent Person to certify a confined space “Safe for Workers.”

Examples (not limited to) of confined spaces:

Confined Spaces	Hazard⁽²⁾
Voids/Cofferdams ⁽¹⁾	P- O; S- F,T
Sealed Compartments ⁽¹⁾	P- O; S- F,T
Double Bottoms/Sides/Duct Keels ⁽¹⁾	P- O; S- F,T
Spaces Coated with a Preservative ⁽¹⁾	P- O; S- F,T
Engine Crankcases/Scavenging Spaces ⁽¹⁾	P- O; S- F,T
Large Heat Exchangers ⁽¹⁾	P- O; S- F,T
Fuel/Lube Oil/Sludge Tanks ⁽¹⁾	P- F,T; S- O
Water tanks ⁽¹⁾	P- O; S- F,T
Cargo/Slop Tanks ⁽¹⁾	P- O; S- F,T
Pump Rooms (if provided)	P- O; S- F,T

(1) There may be reason to enter one or more of these spaces during the exam if there are clear grounds to do so, but only enter these spaces after ensuring they are safe for entry. Review the safe work practices contained in MSM Vol. 1, chapter 10, Appendix A for entry into confined spaces other than pump rooms.

**(2) Hazards – P (Primary);
S (Secondary);
O (Oxygen Deprivation);
F (Flammability);
T (Toxicity)**

Examples (not limited to) of non-confined spaces that may pose a hazard:

<u>Non-confined spaces that may pose a risk (All vessel types)</u>	<u>Possible Hazard(s)</u>	<u>Safe Work Practice</u>
CO ₂ Storage Room	O ₂ deprivation due to leaking CO ₂	Ensure proper ventilation, wear O ₂ meter
Machinery Spaces	Noise, Flammability, Toxicity; MSDs – H ₂ S	Hearing protection
Flammable Storage Lockers/Paint Rooms	Flammability, Toxicity	Ensure proper ventilation
Battery Room	Toxicity -	Ensure proper ventilation
Bos'n Shop	O ₂ deprivation	Ensure proper ventilation
Workshops	Toxicity from welding fumes, Flammability, Noise	Ensure proper ventilation
Compressor Rooms ⁽¹⁾	O ₂ deprivation, Flammability	See Note 1
Provisions/Non-Flammable Storage	O ₂ deprivation	Ensure proper ventilation
Open Cargo Deck	Flammability	Ensure use of intrinsically safe radios, flashlight, phone, etc.

1) Space is monitored every thirty minutes by gas detection system. Enter these spaces after ensuring these are safe for entry and after ensuring the gas detection system is calibrated and functioning properly and gas levels detected are safe for entry. A marine chemist certificate is not required prior to entry.

IMMEDIATELY LEAVE ANY CONFINED SPACE IF:

- A personal monitor alarms;
- You feel dizzy or lightheaded;
- The forced air ventilation stops or is apparently ineffective; or
- If you sense any unexpected chemical through smell or dermal sensation that concerns you. This is a judgment call; however, you should depart any time there is a burning sensation in your lungs or you experience a shortness of breath. Any of these sensations may indicate a life threatening situation and you must react promptly to avoid injury.

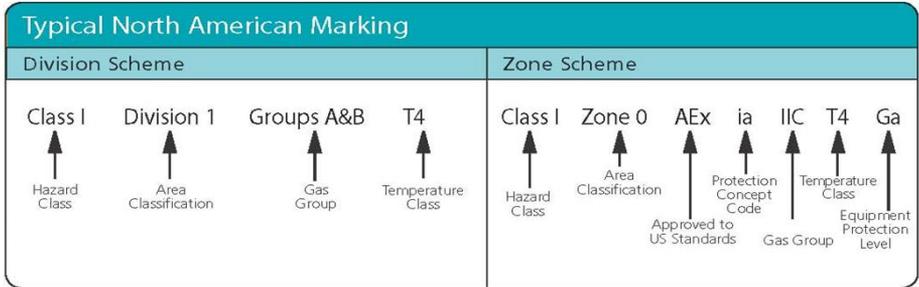
Note: Climbing (other than on ladders) shall be limited to 5ft.

Steps to Take After Entry for All Confined Spaces

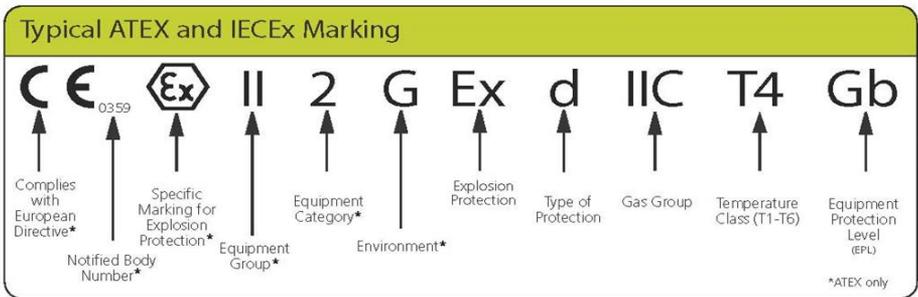
- Immediately contact your chain of command if you left a confined space for any of the reasons noted above. Do not reenter any confined space until notification of appropriate senior personnel and direction from your supervisor is obtained.
- Report any inconsistencies in the marine chemist certificate or competent person log to your supervisor and follow-up with a letter to Commandant CG-1134 via your District (industrial hygienist).
- In the event of overexposure, personnel should be evacuated to appropriate medical facilities by the most expeditious means. Medical personnel should be provided with all known information on the suspected exposure, including concentration and duration of exposure. This should include the most probable route of exposure. Also provide the medical authority with the phone number to American Toxic Substance and Disease Registry (ATSDR).

HazLoc Marking Schemes

Division & Zone (NEC):



Zone (IEC):



Conversions:

Distance and Energy							
Kilowatts (kW)	X	1.341	=	Horsepower (hp)			
Feet (ft)	X	3.281	=	Meters (m)			
Long Ton (LT)	X	.98421	=	Metric Ton (t)			
Liquid (<i>NOTE: Values are approximate.</i>)							
Liquid	bbl/LT	m ³ /t	bbl/m ³	bbl/t			
Freshwater	6.40	1.00	6.29	6.29			
Saltwater	6.24	.975	6.13	5.98			
Heavy Oil	6.77	1.06	6.66	7.06			
DFM	6.60	1.19	7.48	8.91			
Lube Oil	7.66	1.20	7.54	9.05			
Weight							
1 Long Ton	=	2240 lbs	1 Metric Ton	= 2204 lbs			
1 Short Ton	=	2000 lbs	1 Cubic Foot	= 7.48 gal			
1 Barrel (oil)	=	5.61 ft = 42 gal = 6.29 m ³	1 psi	= .06895 Bar = 2.3106 ft of water			
Temperature: Fahrenheit = Celsius ($^{\circ}\text{F} = 9/5\ ^{\circ}\text{C} + 32$ and $^{\circ}\text{C} = 5/9\ (^{\circ}\text{F} - 32)$)							
0	=	-17.8	80	= 26.7	200	=	93.3
32	=	0	90	= 32.2	250	=	121.1
40	=	4.4	100	= 37.8	300	=	148.9
50	=	10.0	110	= 43.3	400	=	204.4
60	=	15.6	120	= 48.9	500	=	260
70	=	21.1	150	= 65.6	1000	=	537.8
Pressure: Bars = Pounds per square inch							
1 Bar	=	14.5 psi	5 Bars	= 72.5 psi	9 Bars	=	130.5 psi
2 bars	=	29.0 psi	6 Bars	= 87.0 psi	10 Bars	=	145.0 psi
3 Bars	=	43.5 psi	7 Bars	= 101.5 psi			
4 Bars	=	58.0 psi	8 Bars	= 116.0 psi			