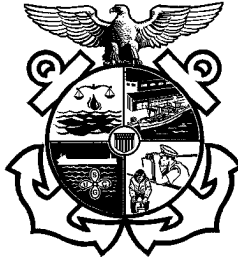


# United States Coast Guard



## ***Barge Inspector (BI) Job Aid (Including BIO, BII, BIG & BIM)***

|  |                              |
|--|------------------------------|
| <b>Name of Vessel</b>  |                              |
| <b>Official Number</b>   | <b>MISLE Activity Number</b> |
| <b>Date</b>  | <b>Class</b>                 |
| <b>Location</b>  |                              |
| <b>Route</b>   |                              |
| <input type="checkbox"/> Oceans <input type="checkbox"/> Limited Coastwise <input type="checkbox"/> Lakes / Bays / Sounds<br><input type="checkbox"/> Coastwise <input type="checkbox"/> Great Lakes <input type="checkbox"/> Rivers   |                              |
| <b>Inspection Type</b>   |                              |
| <input type="checkbox"/> Inspection for Certification (COI) <input type="checkbox"/> Annual<br><input type="checkbox"/> Cargo Tank Internal Exam (CTIE) <input type="checkbox"/> Drydock Inspection<br><input type="checkbox"/> Internal Structure Exam (ISE) <input type="checkbox"/> Periodic<br><input type="checkbox"/> Underwater Survey in Lieu of Drydock (UWILD) |                              |
| <b>Inspectors</b>  |                              |
| 1. _____   | 3. _____                     |
| 2. _____   | 4. _____                     |

## **Use of Barge Inspector Job Aid:**

This Job Aid is intended for use by qualified Coast Guard Barge Inspectors for use on all regulated U.S. flagged barge inspections.

The tasks contained within this Job Aid are not intended to limit the scope or depth of inspection. A checked box should be a running record of what has been inspected and does not imply that the entire system has been inspected or that all or any items are in full compliance. This Job Aid does not constitute part of the official inspection record.

This document does not establish or change federal laws or regulations and references given are only general guidance to the Marine Inspector. The Marine Inspector will need to refer to other publications such as the International Maritime Organization (IMO) resolutions, U.S. Codes of Federal Regulation (CFR), USCG Navigation and Vessel Inspection Circulars (NVIC) or locally produced guidance during the course of inspection for specific regulatory references. Not all items in this Job Aid are applicable to all vessels.

***NOTE:*** *Guidance on how to conduct inspections of U.S. flagged barges can be found in MSM Volume II, Section B: Domestic Inspection Programs.*

## Table of Contents:

### Administrative Items

|  |   |
|--|---|
| Involved Parties & General Information ..... | 1 |
| Vessel Information .....                     | 2 |
| Certificates and Documents.....              | 3 |

### Barge Inspector (BI)

|  |    |
|--|----|
| Pre-Inspection .....                   | 4  |
| Dockside Assessment .....              | 6  |
| Certificates and Documents.....        | 6  |
| Security .....                         | 8  |
| Navigation .....                       | 9  |
| Firefighting Equipment .....           | 10 |
| Electrical Systems .....               | 10 |
| Structural & Watertight Integrity..... | 11 |
| Pollution Prevention .....             | 12 |
| Cargo Systems .....                    | 13 |
| Machinery Systems.....                 | 15 |
| Topside Equipment.....                 | 16 |
| Internal Structural Examination.....   | 17 |
| Welding Repair .....                   | 18 |
| Nondestructive Testing .....           | 20 |
| Hull Inspection.....                   | 25 |
| Follow Up .....                        | 27 |

### Subchapter O Barge (BIO)

|                                 |    |
|---------------------------------|----|
| Certificates and Documents..... | 30 |
| Cargo Systems .....             | 31 |
| Follow Up .....                 | 33 |

### International Barge (BII)

|                                 |    |
|---------------------------------|----|
| Pre-Inspection .....            | 34 |
| Certificates and Documents..... | 34 |
| Logs and Manuals.....           | 37 |
| Pollution Prevention .....      | 38 |

### Liquefied Gas Barge (BIG)

|                                 |    |
|---------------------------------|----|
| Certificates and Documents..... | 39 |
| Cargo Systems .....             | 39 |
| Welding Repair .....            | 42 |

## **Manned Barge (BIM)**

|  |    |
|--|----|
| <b>Certificates and Documents</b> .....            | 43 |
| <b>Logs and Manuals</b> .....                      | 46 |
| <b>Security</b> .....                              | 50 |
| <b>General Health &amp; Safety</b> .....           | 50 |
| <b>Firefighting Equipment</b> .....                | 52 |
| <b>Lifesaving Equipment</b> .....                  | 56 |
| <b>Electrical Systems</b> .....                    | 60 |
| <b>Topside Equipment</b> .....                     | 62 |
| <b>Emergency Drills</b> .....                      | 63 |
| <b>Machinery Systems</b> .....                     | 65 |
| <b>Structural &amp; Watertight Integrity</b> ..... | 67 |
| <b>Pollution Prevention</b> .....                  | 68 |
| <b>Cargo Systems</b> .....                         | 69 |
| <b>Hull Inspection</b> .....                       | 70 |

## **Appendices**

|  |    |
|--|----|
| <b>Recommended U.S. Vessel Deficiency Procedures</b> ..... | 73 |
| <b>Deficiency Summary Worksheet</b> .....                  | 74 |
| <b>Notes</b> .....   | 75 |
| <b>Conversions</b> .....                                   | 77 |

# Administrative Items

## Involved Parties & General Information:

|                                       |
|---------------------------------------|
| Vessel's Representative:<br><br>_____ |
| Phone Numbers:                        |

|                                    |
|------------------------------------|
| Owner                              |
|                                    |
|                                    |
|                                    |
| <input type="checkbox"/> No Change |

|  |
|--|
| Operator – Listed on DOC (if applicable) or COFR |
|  |
|  |
|  |
| <input type="checkbox"/> No Change               |

**Vessel Information:**

|                                 |  |
|---------------------------------|--|
| Classification Society:         |  |
| Last Drydock:                   |  |
| Location of Last Drydock:       |  |
| Next Drydock:                   |  |
| Last CTIE:                      |  |
| Last ISE:                       |  |
| Net Tons:                       |  |
| Gross Tons:                     |  |
| Built Date (use delivery date): |  |
| Overall Length (in feet):       |  |
| Cargo Type:                     |  |
| Cargo Amount:                   |  |

## Certificates and Documents

| Name of Certificate                                       | Issuing Agency | ID # | Port Issued/<br>Country | Issue Date | Exp. Date | Endors. Date |
|---|----------------|------|-------------------------|------------|-----------|--------------|
| Certificate of Documentation                              |                |      |                         |            |           |              |
| Classification Document                                   |                |      |                         |            |           |              |
| Certificate of Financial Responsibility (COFR)            |                |      |                         |            |           |              |
| International Load Line (ILL)                             |                |      |                         |            |           |              |
| International Oil Pollution Prevention (IOPP)             |                |      |                         |            |           |              |
| Certificate of Fitness                                    |                |      |                         |            |           |              |
| International Tonnage (ITC)                               |                |      |                         |            |           |              |
| International Air Pollution Prevention Certificate (IAPP) |                |      |                         |            |           |              |
| Engine International Air Pollution Prevention (EIAPP)     |                |      |                         |            |           |              |

## Section 2: Inspection Items

### Barge Inspection (BI)

#### Pre-Inspection

- 1. Research vessel details in MISLE (Marine Information for Safety and Law Enforcement) database
  - Determine authority, jurisdiction, applicable regulations and enrollment in alternate inspection programs (ACP, SIP, MSP, etc.) 46 USC 3301  
46 CFR 30.01-5, & 91-15-5  
MSM II/B.9 & B 10
  - Locate vessel in MISLE MSM I/12.G.5
  - Verify documents are current in MISLE (VRP, SOPEP, SMPEP etc.) MISLE User Guide  
MSM II/B.1.C.2
  - Review history (narratives, deficiencies & special notes) MSM II/B.1.C.2
  - Verify status of user fees MSM II/B.1.C.2
  - Enter title and point(s) of contact MSM II/B.1.C.2
  - Verify status of Certificate of Financial Responsibility (e-COFR) 33 CFR 138.15 & .30(c)  
33 CFR 138.65  
33 CFR 138.90(a)
  - Generate new activity MSM I/12.G
  - Prepare folder and required documents MPS-PR-SEC-04 & 05
  
- 2. Coordinate inspection with vessel's representative
  - Verify vessel's representative MPS-PR-SEC-01
  - Determine location and time of inspection MPS-PR-SEC-01
  - Discuss inspection expectations 46 CFR 31.10  
MSM II/B.1.D.1 & B.2.A.1
  - Verify vessel's owner/operator information MPS-PR-SEC-04
  - Verify vessel's classification society information MPS-PR-SEC-04
  - Review outstanding conditions from third party reports and/or CG-835s MPS-PR-SEC-04
  - Review repairs and alterations 46 CFR 31.10-22 & -25



- 3. Mitigate potential hazards encountered during an inspection
  - Recognize potential hazards encountered during inspection
 NFPA 306  
NFPA 350
  - Determine confined spaces
 MSM I/10 App.A  
NFPA 350
  - Determine if exam scope will require a Marine Chemist certification for space entry
 29 CFR 1915, Subpart B  
MSM II/A.5.H
  - Verify Marine Chemist has been scheduled for exam
 MSM I/10 App. A
  - Prepare necessary personal protective equipment for exam
 MSM I/10 App. A  
MSM I/8.A.3.  
Operator's Manual
  - Review CG policy for when to leave a space due to hazardous condition
 MSM I/10 App. A
  
- 4. Review Initial/Periodic mid-body gauging report
  - Verify need for initial or periodic regauging
 46 CFR 31.10-21a(a) & (b)
  - Verify location of mid-body survey gauging
 46 CFR 31.10-21a(a) & (c)
  - Verify results, engineering analysis and repair proposal(s)
 46 CFR 31.10-21a(d) & (f)
  - Verify availability of permanent approved copies
 46 CFR 31.10-21a(e)

## Dockside Assessment

- 5. Initial vessel visual examination (upon arrival)
  - Verify presence of anchor(s) 46 CFR 32.15-15(a), (e) & (f)
  - Verify Load Line markings 46 CFR 31.25-1  
46 CFR 42.07-5, .13-25 & .35
  - Verify draught (draft) marks 46 CFR 32.05-1
  - Verify name, homeport and official number markings 46 CFR 32.05-15  
46 CFR 67.121 & .123
  - Evaluate hull for signs of pollution/illegal discharge 33 USC 1321  
33 CFR 151.10(b)  
MARPOL I/15
  - Evaluate hull condition 46 CFR 31.10-15(b)  
ICLL I/1
  - Examine cargo ports and other similar openings 46 CFR 31.25-1  
46 CFR 42.15-55  
ICLL I/21

## Certificates and Documents

- 6. Review Certificate of Inspection (COI)
  - Verify presence of original 46 CFR 31.05-5
  - Validate route(s) and service 46 CFR 31.05-1(b)
  - Validate fire fighting and lifesaving equipment 46 CFR 31.10-15(b)
  - Validate Cargo Carriage requirements 46 CFR 31.05-1(b)
  - Review amendment(s) MSM Vol II/A.3.H.3.b.3  
MSM II/A.3.J
  - Verify pressure vessel date(s) 46 CFR 31.30-1  
46 CFR 61.10-5(b)
  - Verify hull exams date 46 CFR 31.10-21
  - Verify Internal Structural Exam (ISE) date 46 CFR 31.10-21
  - Verify Cargo Tank(s) Internal Exam (CTIE) date 46 CFR 31.10-24

- 7. Review Certificate of Documentation (COD)
  - Verify presence of original 46 CFR 67.9(c)  
46 CFR 67.313
  - Verify contact information is correct 46 CFR 67.321
  - Verify endorsement(s) for current service(s) 46 CFR 67.17  
46 CFR 67.19
  - Verify validity 46 CFR 67.7 & .9  
46 CFR 67.161
  - Confirm renewal of endorsement 46 CFR 67.163
  
- 8. Examine Dangerous Cargo Manifest
  - Verify presence 49 CFR 176.30
  - Verify contents 49 CFR 176.30
  - Confirm location of dangerous cargo with stowage plan 49 CFR 176.30
  
- 9. Examine maintenance and service records (fire fighting)
  - Verify presence 46 CFR 31.10-18(a)
  - Review service record(s) 46 CFR 31.10-18(a)
  
- 10. Review Vessel Security Plan (VSP)
  - Verify applicability and responsibility of company and crew 33 CFR 104.105, .200-220
  - Verify approval 33 CFR 104.400 & .410
  - Verify completion of Declarations of Security (DoS) 33 CFR 104.255
  - Verify completion vessel drills and company exercise 33 CFR 104.230 & .235
  - Review required security records 33 CFR 104.235
  - Verify Vessel Security Officer qualifications and duties for manned and unmanned barges 46 CFR 35.05-15  
33 CFR 104.215  
33 CFR 104.290 & 415

- ☐ 11. Examine stability letter, book and loading criteria
  - Parent cite 46 CFR 31.10-30  
46 CFR 170.001(a)
  - Verify stability letter posted 46 CFR 35.08-1  
46 CFR 170.120
  - Verify stability requirements are documented 46 CFR 170.110

- ☐ 12. Reviewing loading information
  - Verify presence 46 CFR 31.10-32(b)
  - Verify contents 46 CFR 31.10-32(b)

### **Security Inspection**

- ☐ 13. Review Vessel Security Plan (VSP) or Alternate Security Plan (ASP)
  - Verify presence of approval letter for plan type 33 CFR 104.105, .120 & .140  
33 CFR 101.120(b) & (c)
  - Verify participation with sponsoring organizations NVIC 04-03 Ch-1 Encl (6) 5. C.
  - Verify plan is secured 33 CFR 104.400(c)  
ISPS Code A/9.7  
NVIC 04-03 Ch-1 Encl (4)
  - Examine contents 33 CFR 104.405
  - Verify amendment(s) 33 CFR 104.415(a)
  - Verify implementation 33 CFR 101.120(b)(2)  
33 CFR 104.140(c) & 400(a)
  - Verify security inspection/deficiency documentation NVIC 10-04 Part 1  
MSM II/A.2.C

- 14. Examine security records
  - Verify record(s) of security training 33 CFR 104.235(b)(1)
  - Verify presence of Declarations of Security (DoS) 33 CFR 104.255 & .235(b)(7)  
NVIC 04-03 Encl. 3 Section 10
  - Verify record(s) of security drills 33 CFR 104.230  
33 CFR 104.235(b)(2)
  - Verify annual exercise has been conducted 33 CFR 104.235(b)(2)
  - Verify record(s) of annual audit 33 CFR 104.235(b)(8)
  - Verify VSA/SSA is reviewed and revalidated when VSP is submitted for reapproval or revisions 33 CFR 104.310 (c)  
NVIC 04-03 Encl (2), 2.C & 2.D
  
- 15. Examine security equipment
  - Verify location of Ship Security Alert System 33 CFR 101.310
  - Verify maintenance records 33 CFR 104.235(b)(5)  
NVIC 04-03 Encl. 3 Section 10
  - Verify operation 33 CFR 104.260(a)  
NVIC 04-03 Ch 2, Encl 5, Sec 14.

## Navigation

- 16. Inspect navigation lights & shapes
  - Parent cites 46 CFR 32.45-1
  - Verify operation of navigation and anchor lights 33CFR 82.5 & 83.30
  - Examine day shapes 33 CFR 83.20(d)  
33 CFR 84.06
  - Review Certificate of Alternative Compliance 33 CFR 81.9

## Fire Fighting Equipment

- ☐ 17. Inspect portable fire extinguishers
  - Verify inspection/maintenance compliance 46 CFR 31.10-18(a)  
NFPA 10 Chap 7 & 8
  - Examine condition of cylinders and hoses 46 CFR 31.10-18(a)  
NFPA 10 Chapter 7
  - Verify type, quantity and locations 46 CFR 34.50-10  
46 CFR 147.45(i)2  
MSM II/C.2.I.3 & .4
  - Verify markings 46 CFR 34.05-10(a)  
46 CFR 34.50-25 & -40  
NVIC 13-86, MSM II/C.2.I.3
  - Confirm spare units 46 CFR Table 34.50-10(a)

## Electrical Systems

- ☐ 18. Inspect main service generators and prime mover(s)
  - Parent cite 46 CFR 31.35-1
  - Examine condition of components 46 CFR 61.20-3(a)
  - Verify installation of machinery covers and guards 46 CFR 58.01-20
  - Verify generator(s) nameplates are attached 46 CFR 111.12-5  
ABS 4-2-1/1.1  
ABS 4-8-3/3.11.8
  - Verify set point and operation of prime mover over speed shut-down 46 CFR 111.12-1(b)  
ABS 4-2-1/7.5.3
  - Verify set point and operation of prime mover lube oil shut-down 46 CFR 111.12-1(c)
  - Verify power source requirements 46 CFR 111.10
  - Examine generator protections 46 CFR 111.12-11
  - Verify operation of reverse power relays 46 CFR 111.12-11(f)

- 19. Inspect electrical cables and fixtures
  - Parent cite 46 CFR 31.35-1
  - Verify supports for vertical and horizontal installations 46 CFR 111.60-5  
IEEE 45-2002 25.5
  - Verify radius of bends IEEE 45-2002 25.6
  - Verify no hazardous conditions exist 46 CFR 111.60-17  
46 CFR 111.60-19
  - Verify condition of outlets 46 CFR 111.79-1  
46 CFR 111.81-1
  - Verify use of flexible cords 46 CFR 111.60-13  
IEEE 45-2002 24.6.1
  - Verify material condition/installation of fixtures 46 CFR 111.75-20
  - Verify wire type and conductor size 46 CFR 111.60-1 thru -4 & -11

- 20. Inspect components installed in designated hazardous locations
  - Parent cite 46 CFR 31.35-1  
46 CFR 32.45-1
  - Determine what is a hazardous location 46 CFR 111.105-1  
46 CFR 111.105-41 & -43
  - Verify equipment approval & integrity 46 CFR 111.105-3, -5 & -7  
46 CFR 111.105-9 & -11  
46 CFR 111.105-15
  - Verify wiring methods & equipment used 46 CFR 111.105-17 & -19  
46 CFR 111.105-21 & -27
  - Verify installation on combustible liquid cargo carriers 46 CFR 111.105-29
  - Verify installation on flammable or combustible cargo below 140 F degrees 46 CFR 111.105-31

### **Structural/Watertight Integrity**

- 21. Inspect watertight bulkhead penetrations
  - Parent cite 46 CFR 31.10-30
  - Verify ability to seal 46 CFR 56.50-1
  - Verify sealing material approvals 46 CFR 56.50-1

- ☐ 22. Inspect hull structure
  - Examine for damage, wastage and fractures 46 CFR 32.60-1  
MSM II/B.1.B.1
  - Verify no unauthorized repairs 46 CFR 31.10-25

### **Pollution Prevention**

- ☐ 23. Inspect deck containment
  - Verify adequate containment 33 CFR 155.310(a)  
33 CFR 156.120(n)
  - Verify adequate peripheral cargo deck coamings 33 CFR 155.310(c)(4)  
33 CFR 156.120(n)
  - Verify means of drainage 33 CFR 155.310(a)(2)  
33 CFR 156.120(o)
  - Verify mechanical means of closing drains or scuppers 33 CFR 155.310(a)(3)  
33 CFR 156.120(o)
  
- ☐ 24. Inspect pollution prevention equipment
  - Verify communication between participants in transfer operations 33 CFR 155.785
  - Verify transfer hoses tested and marked 33 CFR 155.800  
33 CFR 154.500  
MSM II/B.6.E.8
  - Verify locations of pollution/MARPOL placards 33 CFR 155.450
  - Verify condition of cargo handling equipment 33 CFR 155.310  
33 CFR 156.130 & 170(1)
  - Verify condition and size of containment 33 CFR 155.310 & .320  
MSM II/B.6.D.6
  - Verify containment closures 33 CFR 155.310  
33 CFR 156.120(n) & (o)
  - Verify sufficient deck lighting 33 CFR 155.790
  - Verify signed copies of Declaration of Inspection are present 33 CFR 156.150(f)  
MSM II/B.6.E.6



- ☐ 25. Review fuel oil transfer procedures
  - Verify contents of PIC designation letter and endorsement 33 CFR 155.700, .710 & .715
  - Verify procedure are posted or available 33 CFR 155.720  
33 CFR 155.740(c)  
MSM II B.6.D.16
  - Verify contents of procedures 33 CFR 155.750
  - Verify amendments to procedures 33 CFR 155.760

### **Cargo Systems**

- ☐ 26. Inspect cargo tank venting arrangements
  - Verify material condition 46 CFR 32.55-25
  - Verify condition of flame screens and arresters 46 CFR 32.20-10  
MSM II/F.3.F.17
  - Verify height of tank venting system 46 CFR 32.55-25
  - Verify horizontal distance from air intakes and openings 46 CFR 32.55-25(b)
  - Verify operation of overpressure/vacuum protection 46 CFR 32.20-5  
46 CFR 32.20-10  
46 CFR 39.2011

- ☐ 27. Inspect liquid cargo transfer systems
  - Examine condition of piping and hose(s) 46 CFR 32.50-15  
33 CFR 155.800
  - Verify pressure gage and operation of cargo pump remote shutdown devices 46 CFR 32.50-5 & -30  
33 CFR 155.780  
33 CFR 156.170(c)(5)
  - Verify hoses are marked 33 CFR 155.800  
33 CFR 154.500(e) & (f)  
33 CFR 155.785(d)
  - Verify hose and hose assembly 46 CFR 32.50-30  
33 CFR 155.800  
33 CFR 154.500 (a)-(d)
  - Verify transfer equipment tests and inspections 33 CFR 156.170(c)(1)
  - Verify warning signals and signs 46 CFR 35.30-1
  - Verify operation of visual indicators 46 CFR 39.2009  
46 CFR 56.50-1(g)(2)(iii)
  - Verify means of sounding tanks and closing tube 46 CFR 56.50-90(a) & (e)

- ☐ 28. Inspect Vapor Collection System (VCS)
  - Verify electrically bonded 46 CFR 39.2001(c)
  - Examine drain lines 46 CFR 39.2001(d)
  - Verify system can be isolated from Inert Gas System 46 CFR 39.2001(e)
  - Verify presence of isolation valve and indicator 46 CFR 39.2001(g)
  - Verify markings on vapor piping 46 CFR 39.2001(h)
  - Verify presence of flange stud 46 CFR 39.2001(j)
  - Verify closed gauging system 46 CFR 39.2003(a) & (b)
  - Verify installation of pressure sensing indicating device 46 CFR 39.2015

- ☐ 29. Inspect tank liquid high level and overflow protection
  - Verify overflow alarms 33 CFR 155.480(b)(2)  
46 CFR 39.2009(a)
  - Verify high level alarm settings 33 CFR 155.480(b)(2)  
46 CFR 39.2009(a)(2)
  - Witness operational test of audible and visual alarm indicators 33 CFR 155.480(b)(2)  
46 CFR 39.2009(a)(2)
  - Verify high level alarm markings 46 CFR 39.2009(a)(2)(ix)(B)
  - Verify tank overflow alarm markings 46 CFR 39.2007(d)  
46 CFR 39.2009(a)(2)(ix)(B)
  
- ☐ 30. Inspect packaged hazardous material(s)
  - Review Dangerous Cargo Manifest 49 CFR 176.30
  - Verify packaging 49 CFR 172.101 Table  
IMDG Code Vol. I & II
  - Verify marked and labeled 49 CFR 172.300 - .338  
49 CFR 172.400 - .450  
IMDG Code I/5
  - Verify placarding 49 CFR 172.500 - .560  
IMDG Code I/5
  - Verify stowage and segregation 49 CFR 176.57 - .78  
49 CFR 176.80 - .84  
IMDG Code I/7

## **Machinery Equipment**

- ☐ 31. Inspect main and auxiliary machinery and related systems
  - Parent cite 46 CFR 32.35-10
  - Examine condition, installation and arrangements of system components 46 CFR 58.05-1  
46 CFR 61.20-3(a)  
MSM II/B.1.F.4
  - Verify installation of protective covers or guards 46 CFR 58.01-20
  - Verify means of stopping machinery 46 CFR 32.50-35  
46 CFR 58.01-25  
46 CFR 61.20-3(b)
  - Examine inlet and discharge piping 46 CFR 56.50-95(d)(1) & (2)
  - Verify machinery space ventilation 46 CFR 58.01-45

- 32. Inspect fuel tank components
  - Parent cite 46 CFR 31.30-1
  - Verify number of vents 46 CFR 56.50-85(a)(2)
  - Verify vent height from deck and their locations 46 CFR 56.50-85(a)(4), (5) & (6)  
46 CFR 56.50-85(b)
  - Verify operation of closing/opening means 46 CFR 56.50-85(a)(7)
  - Verify presence, location and type of flame screen material 46 CFR 56.50-85(a)(8)  
46 CFR 56.50-85(a)(9)
  - Verify location of sounding tube(s) & means of capping pipe 46 CFR 56.50-90(a)-(e)

- 33. Inspect fired thermal fluid heaters
  - Verify ready for inspection 46 CFR 61.30-5  
Operations Manual
  - Witness hydrostatic test 46 CFR 61.30-10  
Operations Manual
  - Examine visually 46 CFR 61.30-15  
Operations Manual
  - Verify prepurge and burner ignition sequence 46 CFR 61.30-20  
Operations Manual
  - Verify operation of combustion controls 46 CFR 61.30-20  
Operations Manual
  - Verify operation of limits, flow and fluid controls 46 CFR 61.30-20  
Operations Manual
  - Verify operation of high temperature control 46 CFR 61.30-20  
Operations Manual
  - Verify operation of postpurge control 46 CFR 61.30-20  
Operations Manual
  - Verify operation of flame safe-guard 46 CFR 61.30-20  
Operations Manual

## Topside Equipment

- 34. Inspect freeing ports and scuppers
  - Parent cite 46 CFR 31.25-1
  - Verify no modifications 46 CFR 31.10-30  
46 CFR 174.215  
46 CFR 42.15-60 & -70
  - Verify unobstructed 46 CFR 35.35-10  
46 CFR 42.15-60 & -70

## Internal Structural

- 35. Verify confined spaces are safe for entry
  - Review Marine Chemist Certificate 29 CFR 1915.12(f)  
CIM 5100.47C 13.B.8  
NFPA 306/4.3
  - Verify Competent Person has maintained Marine Chemist Certificate 29 CFR 1915.15  
CIM 5100.47C 13.B.8  
NFPA 306/4.6.2
  - Verify no changes to vessel's condition 29 CFR 1915.15(b)
  - Verify forced ventilation is provided 29 CFR 1915.13(b)(3)
  - Verify condition of space access point 29 CFR 1915.76
  - Verify compliance with competent person program MSM II/A.5.H.6
  
- 36. Inspect internal structures and cargo tanks
  - Parent cite 46 CFR 31.10-1 & -25-1
  - Examine internal structures 46 CFR 31.10-20(b) & -21(c)  
46 CFR 42.03-5(a)(1)  
ABS 7-3-1/1
  - Verify condition of sounding tube striker plate in cargo tank(s) 46 CFR 56.50-90(e)
  - Examine coamings, closures and other fittings 46 CFR 42.09-25(b)(2)  
MSM II/B.3.B
  - Verify wastage discovered is within acceptable limits ABS 7-A-4/27  
NVIC 07-68 III(C)  
NVIC 07-68 III(H)-(N)
  - Verify unsatisfactory condition(s) are resolved 46 CFR 42.09-45

## Welding Repairs

- 37. Evaluate structural repair proposals
  - Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
  - Evaluate extent of damage and/or wastage/corrosion 46 CFR 42.09-50  
ABS 7-A-4/17  
NVIC 07-68 IV
  - Review repair proposal 46 CFR 42.09-50 & ABS 7-A-4/29  
MSM II/A.1.F.2.a  
NVIC 07-68 IV
  - Verify repair materials 46 CFR 42.09-50(c)  
ABS 7-A-4/29  
ABS 2-1-1/7
  - Verify welding procedures 46 CFR 42.09-50(c)  
46 CFR 2.75-70  
ABS 2-4-1/1.3
  
- 38. Inspect fit-up
  - Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
  - Examine material and verify it is fitted to approved joint detail 46 CFR 42.09-50  
ANSI/AWS D3.5-93  
NVIC 07-68 IV & V
  - Verify materials (base, filler, gas) 46 CFR 57.02-5  
ABS 2-1-1/1.1
  - Verify welding processes ABS 2-4-1/1.7
  
- 39. Inspect back gouge
  - Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
  - Examine welds for defects (discontinuity) ABS 2-4-1/5.9  
NVIC 07-68 V(G)(2)
  - Verify weld sequencing ANSI/AWS D3.5-93  
NVIC 07-68 V(F)
  - Verify joints are cleaned between interpasses ABS 2-4-1/3.5  
NVIC 07-68 V(H)

- 40. Inspect welds
  - Parent cite
 

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|  | 46 CFR 31.10-1 |
|  | 46 CFR 32.60-1 |
  - Examine welds for uniformity and reinforcement
 

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|  | ABS 2-4-1/5.15.1 |
|  | NVIC 07-68 V     |
  - Examine welds for defects (discontinuity)
 

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|--|------------------|
|  | ABS 2-4-1/5.15.1 |
|  | NVIC 07-68 V(H)  |
  - Examine adjacent base metal for injurious arc strikes, spatter, undercut, overlap, slag and irregular and/or sharp edges
 

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|  | ABS 2-4-1/5.15.1 |
|--|------------------|
  - Verify workmanship through an nondestructive test
 

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|  | ABS 2-4-1/5.15.2 |
|  | ABS NDT Guide    |
  
- 41. Verify welding Procedure Qualification Record(s) (PQR)
  - Parent cite
 

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|--|----------------|
|  | 46 CFR 31.10-1 |
|  | 46 CFR 32.60-1 |
  - Confirm need for qualified welding procedure
 

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|  | 46 CFR 2.75-70 |
|  | NVIC 07-68     |
  - Verify variables on PQR(s) to the Welding Procedure Specification (WPS(s))
 

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|  | 46 CFR 2.75-70 |
|--|----------------|
  - Verify tests and results
 

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|  | 46 CFR 2.75-70 |
|--|----------------|
  
- 42. Verify welder is qualified to perform repair work
  - Parent cite
 

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|  | 46 CFR 31.10-1 |
|  | 46 CFR 32.60-1 |
  - Confirm need for qualified welding procedure
 

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|  | 46 CFR 2.75-70 |
|--|----------------|
  - Verify Welder Performance Qualification (WPQ) is valid
 

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|  | 46 CFR 2.75-70 |
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  - Verify variables on WPQs
 

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|  | 46 CFR 2.75-70 |
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  - Verify tests are satisfactory
 

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|  | 46 CFR 2.75-70 |
|--|----------------|

## Nondestructive Testing

- 43. Inspect nondestructive testing (NDT) using the liquid (dye) penetrant method
  - Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
  - Verify technician's qualification and certification ABS 2-4-1/5.17  
NDT Guide 4/5.3
  - Verify application technique NDT Guide 4/5.5
  - Witness application procedures ABS NDT Guide 4/5.7
  - Witness visible penetrant examination ABS NDT Guide 4/7.5
  - Witness fluorescent penetrant examination ABS NDT Guide 4/7.7
  - Evaluate test results or technician's report ABS NDT Guide 4/9 & .11
  
- 44. Inspect nondestructive testing (NDT) using the magnetic particle method
  - Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
  - Verify technician's qualification and certification ABS 2-4-1/5.17  
ABS NDT Guide 7/5.3
  - Verify inspection technique ABS NDT Guide 7/5.5
  - Verify equipment and magnetic field strength ABS NDT Guide 7/5.7.1 & .2
  - Witness application of visible magnetic particles ABS NDT Guide 7/5.7.3
  - Witness application of fluorescent particles ABS NDT Guide 7/5.7.4
  - Witness technician examine/interpret readings ABS NDT Guide 5/5.7 & 9
  - Evaluate test results or review technician's report ABS NDT Guide 5/5.7 & 9



☐ 45. Verify nondestructive testing (NDT) using the radiography (gamma rays or x-rays) method

- Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
- Verify technician's qualification and certification ABS 2-4-1/5.17  
ABS NDT Guide 2/5.1
- Verify inspection technique ABS NDT Guide 2/5.3
- Verify film identification markings ABS NDT Guide 2/5.5
- Verify radiography quality level ABS NDT Guide 2/5.7
- Verify Image Quality Indicator (IQI) ABS NDT Guide 2/5.9
- Witness technician examine/interpret readings ABS NDT Guide 2/5.15
- Review technician's report ABS NDT Guide 2/9 & .11

☐ 46. Verify nondestructive testing (NDT) using the ultrasonic method

- Parent cite 46 CFR 31.10-1  
46 CFR 32.60-1
- Verify technician's qualification, certification and techniques ABS 2-4-1/5.17  
ABS NDT Guide 3/3
- Verify calibrate block's material and thickness ABS NDT Guide 3/3.5
- Verify type of equipment/instrument used ABS NDT Guide 3/3.7
- Verify equipment is calibrated ABS NDT Guide 3/3.9
- Witness technician examine/interpret readings ABS NDT Guide 3/3.11
- Evaluate test results or review technician's report ABS NDT Guide 3/3.13

- 47. Inspect nondestructive testing (NDT) using the hydro-static method (Pressure Vessels)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify requirement for test 46 CFR 54.10-10(a)
  - Verify ready for testing 46 CFR 54.10-10(b)
  - Verify air has been purged 46 CFR 54.10-10(b)
  - Verify piping components are isolated 46 CFR 54.10-10(b)  
46 CFR 61.10
  - Verify test pressure 46 CFR 54.10-10(b)  
46 CFR 54.10-20
  - Verify test pressure is attained and maintained 46 CFR 54.10-10(c)
  - Witness test 46 CFR 54.10-10(c)
  
- 48. Inspect nondestructive testing (NDT) using the hydro-static method (Piping Systems)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify test pressure of nonstandard piping components 46 CFR 56.97-5
  - Verify system is ready for testing 46 CFR 56.97-25
  - Verify air has been purged 46 CFR 56.97-30(a)
  - Verify test medium 46 CFR 56.97-30(b)
  - Verify piping components are isolated 46 CFR 56.97-30(c)
  - Verify test pressure 46 CFR 56.97-30(e) & (f)
  - Witness test 46 CFR 56.97-30(d)
  - Verify test pressure is attained and maintained 46 CFR 56.97-30(g)
  - Verify pressures for Installation tests 46 CFR 56.97-40

- 49. Inspect nondestructive testing (NDT) using the hydro-static method (Tanks and Bulkheads)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify tanks/space is ready for testing ABS 3-7-1/3.5.4(a) & (b)
  - Verify test medium being used ABS 3-7-1/3.5.4(a) & (b)
  - Verify piping components are isolated ABS 3-7-1/3.5.4(a) & (b)
  - Verify test pressure ABS 3-7-1/3.5.4(a) & (b)
  - Witness test ABS 3-7-1/3.5.4(a) & (b)
  
- 50. Inspect nondestructive testing (NDT) using the pneumatic method (Pressure Vessels)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Determine suitability for test 46 CFR 54.10-15(a) & (b)
  - Ensure all safety precaution are taken 46 CFR 54.10-15(g)
  - Verify test pressure 46 CFR 54.10-15(c)
  - Witness gradual pressure increase 46 CFR 54.10-15(d)
  - Witness test 46 CFR 54.10-15(e)
  
- 51. Inspect nondestructive testing (NDT) using the pneumatic method (Piping Systems)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify test medium and temperature 46 CFR 56.97-35(b)
  - Verify piping components are isolated 46 CFR 56.97-35(c)
  - Verify test pressure 46 CFR 56.97-35(f) & (g)
  - Witness gradual pressure increase 46 CFR 56.97-35(d)
  - Verify test pressure is attained and maintained 46 CFR 56.97-35(h)
  - Witness test 46 CFR 56.97-35(e)

- 52. Inspect nondestructive testing (NDT) using the tank air test (pneumatic) method (Tanks & Bulkheads)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify tanks/space is ready for testing ABS 3-7-1/3.5.4(d)
  - Verify piping components are isolated ABS 3-7-1/3.5.4(d)
  - Verify test pressure ABS 3-7-1/3.5.4(d)
  - Verify presence of leak indicating solution ABS 3-7-1/3.5.4(d)
  - Verify calibration of means to measure pressure ABS 3-7-1/3.5.4(d)
  - Witness initial test ABS 3-7-1/3.5.4(d)
  - Witness secondary test ABS 3-7-1/3.5.4(d)
  
- 53. Inspect nondestructive testing (NDT) using the hose test method (Tanks & Bulkheads)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify tanks/space is ready for testing ABS 3-7-1/3.5.4(c)
  - Verify nozzle size ABS 3-7-1/3.5.4(c)
  - Verify water pressure ABS 3-7-1/3.5.4(c)
  - Verify nozzle distance from joints/seams during test ABS 3-7-1/3.5.4(c)
  - Witness test ABS 3-7-1/3.5.4(c)
  
- 54. Inspect nondestructive testing (NDT) using the vacuum box method (Tanks & Bulkheads)
  - Parent cite 46 CFR 31.10-1 & .30-1  
46 CFR 32.60
  - Verify tanks/space is ready for testing ABS 3-7-1/3.5.4(f)
  - Verify condition of gauge and injector ABS 3-7-1/3.5.4(f)
  - Verify presence of leak indicating solution ABS 3-7-1/3.5.4(f)
  - Verify test gauge pressure ABS 3-7-1/3.5.4(f)
  - Witness test ABS 3-7-1/3.5.4(f)

## Hull Inspection

- ☐ 55. Inspect hull
  - Examine for wastage, defect(s) and damage 46 CFR 31.10-1 & -20  
ABS 7-4-1/1
  - Examine stress areas (stringer plate, sheer plate, etc.) NVIC 07-68 II & III
  - Examine seachest(s), strainers and emergency bilge suction and overboard discharges for wastage, defect(s), and damage 46 CFR 61.20-5  
NVIC 07-68 II & III
  - Verify condition of drydock (bottom) plugs NVIC 07-68 II & III  
MSM II/B.3.B.2
  - Verify wastage/corrosion is within limits ABS 7-A-4/27  
NVIC 07-68 III(C) & H-N
  - Ensure unsatisfactory condition(s) are resolved 46 CFR 42.09-45  
MSM II/B.3.B
  
- ☐ 56. Inspect hull markings
  - Verify placement of hull markings 46 CFR 31.25  
46 CFR 32.05-1, -5, -15  
46 CFR 67.120 & 69.177
  - Verify markings are permanently affixed 46 CFR 32.05  
46 CFR 42.13-40  
46 CFR 67.121
  - Verify markings are of contrasting colors 46 CFR 32.05  
46 CFR 42.13-40

□ 57. Determine if vessel qualifies to participate in Underwater Survey Program (UWILD)

- Review application 46 CFR 31.10-21(d)  
NVIC 01-89  
MSM II/B.3.C.1
- Inspect condition of hull and protection system NVIC 01-89 Encl.1/1.a
- Verify reference points (when applicable) 46 CFR 31.10-21(d)(3)  
NVIC 01-89 Encl.1/1.b  
MSM II/B.3.C.1.b
- Verify hinged gratings are installed on sea chest(s) 46 CFR 31.10-21(d)(4)  
NVIC 01-89 Encl.1/1.c  
MSM II/B.3.C.1.c
- Review hull gauging report NVIC 01-89 Encl.1/1.a
- Review reference video NVIC 01-89 Encl.1/1.d  
MSM II/B.3.C.1.d
- Forward application with OCMI's recommendation MSM II/B.9.K.7  
MSM II/G.2.V.6.a

- 58. Inspect hull during an underwater survey
  - Review vessel's application for (UWILD) drydocking examination
    - 46 CFR 31.10-21(d)
    - NVIC 01-89 Encl.1/2.a
    - MSM II/B.3.C.2
  - Verify procedures to be followed
    - 46 CFR 31.10-21(d)(1)
    - 46 CFR 197.202
    - MSM II/B.3.C.2
  - Verify suitability of location
    - 46 CFR 31.10-21(d)(2)
    - NVIC 01-89 Encl.1/5.c
    - MSM II/B.3.C.5.c
  - Review reference plans and video
    - 46 CFR 31.10-21(d)(3)
    - NVIC 01-89 Encl.1/2.a(12)
  - Meet with vessel's representative and diving supervisor to discuss details of survey
    - 46 CFR 91.40-3(d)(5)
    - NVIC 01-89 Encl.1/4
    - MSM II/B.3.C.4
  - Verify vessel's representative submitted a signed letter of vessel's overall condition
    - 46 CFR 31.10-21(d)
    - NVIC 01-89 Encl.1/2.a(7)
    - MSM II/B.3.C.3
  - Verify qualification of divers, type of diving equipment, and their nondestructive testing (NDT) and damage repair capabilities
    - 46 CFR 31.10-21(d)
    - 46 CFR 197.200
    - NVIC 01-89 Encl.1/5.f & MSM II/B.3.C.5.k.5
  - Verify all areas of the hull have been cleaned
    - NVIC 01-89 Encl.1/5.g
  - Witness underwater survey from a video monitor
    - NVIC 01-89 Encl.1/5.l
    - MSM II/B.3.C.5.k.3

### **Follow Up**

- 59. Issue/endorse vessel's Certificate of Inspection and vessel's certificates
  - Issue and/or endorse COI
    - 46 CFR 31.05-1 & 91.01
    - 46 CFR 2.01-5
    - 46 CFR 153.8
  - Verify COI endorsements are accurate
    - 46 CFR 31.05-15
    - 46 CFR 153.8
  - Obtain a copy of all endorsed certificates for the unit's vessel file
    - MSM I/12.E.7

- 60. Issue control action(s)
  - Determine control action
    - 46 USC 3313(b)
    - MMS CVC-PR-001(2)
  - Conduct reports and notifications (when applicable)
    - MMS CVC-PR-001(2)
  - Issue control action(s)
    - MMS CVC-PR-001(2)
    - CG-835V
  - Explain control action(s) to responsible parties/stakeholders
    - MMS CVC-PR-001(2)
    - CG-835V
    - MSM II/A.1.F.3
  
- 61. Complete MISLE Activity
  - Open existing activity in MISLE
    - MSM I/12.G.2.a
    - IMO Res A.1076(28)
    - MISLE User Guide
  - Update inspection results
    - MSM I/12.H.1 / MSM II/A.2.C.2.d
    - MMS PR-009(2)
    - MISLE User Guide
  - Update activity narrative
    - MSM I/12.H.1
    - MMS PR-009(2)
    - MISLE User Guide
  - Update vessel details
    - MSM I/12.H.1
    - MISLE User Guide
    - MMS PR-009(2)
  - Amend Certificate of Inspection
    - MSM I/12.H.1
    - MISLE User Guide
    - MMS PR-009(2)
  - Print new or amended Certificate of Inspection and Deficiency Letter
    - MSM II/A.2.C.6
    - MISLE User Guide
    - MMS PR-009(2)
  - Change activity status to "Open - Submitted for Review"
    - MSM I/12.H.1
    - MISLE User Guide



- 62. Conduct deficiency check
  - 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  
MISLE User Guide  
MMS PR-001(2)
  - Remove control action(s) MISLE User Guide
  
- 63. Ensure completion of drydock examination
  - Verify completions of all repairs MSM II/A.2.C
    - Issue amended Certificate of Inspection MPS-PR-SEC-05

## **Subchapter "O" Addendum (BIO)**

### **Pre-Inspection**

- 64. Research vessel details in MISLE (Marine Information for Safety and Law Enforcement) database
  - Verify subchapter "D" or "I" parent applicability MISLE User Guide  
46 CFR 151.01-10
  - Review Cargo Authority Attachment (CAA) for subchapter "O" cargoes MISLE User Guide  
46 CFR 151.01-20
  
- 65. Determine compatibility of cargoes
  - Verify cargoes are compatible 46 CFR 150 fig 1
  - Verify if there are any exceptions 46 CFR 150.150  
46 CFR 150.160
  
- 66. Review specific cargo requirements
  - Verify minimum requirements for subchapter "O" cargoes 46 CFR 151.05
  - Verify minimum requirements for category D NLS cargoes 46 CFR 151.12-5

### **Certificates and Documents**

- 67. Review Certificate of Inspection (COI)
  - Verify hull exams date 46 CFR 31.10-21  
46 CFR 91.40-3
  - Verify Internal Structural Exam (ISE) date 46 CFR 31.10-21  
46 CFR 91.40-3
  - Verify Cargo Tank(s) Internal/External Exam dates 46 CFR 151.04-5(b) & (c)
  - Verify approved cargoes 46 CFR 151.01-20  
46 CFR 151.04-1(c)  
46 CFR 151.12-5, -10(a)
  - Verify maximum cargo and density 46 CFR 151.04-1(c)  
46 CFR 151.10-15(c)
  - Verify operating limitations and limiting drafts 46 CFR 151.04-1(c)  
46 CFR 151.10-15(c)
  - Verify hull type number(s) 46 CFR 151.10-1(b)  
46 CFR 151.10-15(c)

- 68. Review cargo information documentation
  - Verify names and location of all cargoes are posted 46 CFR 151.45-2(e)(2)
  - Verify cargo information cards are available 46 CFR 151.45-2(e)(3)(i)
  - Verify presence of shipping papers 46 CFR 151.45-7

### **Cargo Systems**

- 69. Inspect configuration of equipment for particular cargoes
  - Verify applicability 46 CFR 151.01.10  
46 CFR 153 Table 2
  - Verify cargo segregation/tanks requirements 46 CFR Table 151.05 & .05-1(e)  
46 CFR 151.13-5  
46 CFR 151.15-1
  - Verify type of venting requirements 46 CFR Table 151.05 & .05-1(g)  
46 CFR 151.15-5
  - Verify gauging device requirements 46 CFR Table 151.05 & .05-1(h)  
46 CFR 151.15-10
  - Verify piping classification requirements 46 CFR Table 151.05 & .05-1(i)  
46 CFR 151.20-1
  - Verify cargo transfer controls requirements 46 CFR Table 151.05 & .05-1(j)  
46 CFR 151.20-5, -10 & -15
  - Verify environmental control/cargo tank requirements 46 CFR Table 151.05 & .05-1(k)  
46 CFR 151.25-1
  - Verify environmental control/cargo handling space requirements 46 CFR Table 151.05 & .05-1(l)  
46 CFR 151.25-2
  - Verify fire protection requirements 46 CFR Table 151.05 & .05-1(m)  
46 CFR 151.30-1
  - Verify special requirements 46 CFR Table 151.05 & .05-1(n)  
46 CFR 151.40, .50 & .55  
46 CFR 151.56 & .58
  - Verify electrical hazard class and group requirements 46 CFR Table 151.05 & .05-1(o)
  - Verify temperature control requirements 46 CFR Table 151.05 & .05-1(p)  
46 CFR 151.40

- 70. Inspect liquid cargo transfer systems
  - Verify operation of quick closing valves 46 CFR 151.04-5(f)  
46 CFR 151.20-5(e) & (f)
  - Verify condition of excess flow valves 46 CFR 151.04-5(g)  
46 CFR 151.20-5(e) & (g)
  - Verify condition of pressure vacuum relief valves 46 CFR 151.04-5(h)
  - Verify testing of safety relief valves 46 CFR 151.04-5(i)
  - Verify testing and labeling of cargo hose 46 CFR 151.04-5(j)  
46 CFR 151.20-15
  - Examine condition of cargo piping 46 CFR 151.20-1
  - Verify testing of cargo piping 46 CFR 151.04-5(k)
  - Verify warning signals and signs 46 CFR 151.45-2(e)  
46 CFR 151.45-9
  - Verify operation of cargo pump remote shutdown devices 46 CFR 151.20-5(b)(3)
  
- 71. Inspect venting and VCS for cargoes having toxic properties
  - Verify size of pressure-vacuum on gravity cargo tanks 46 CFR 151.50-5(e)
  - Verify direction of safety relief or pressure vacuum relief valve discharge 46 CFR 151.50-5(f)
  - Verify arrangement to reclaim or safely vent vapors 46 CFR 151.50-5(g)
  
- 72. Inspect cargo tank venting arrangements
  - Verify condition operation of overpressure/vacuum protection 46 CFR 151.15-5  
46 CFR 162.017-4
  - Verify height of tank venting system 46 CFR 151.15-5(a)  
46 CFR 151.50-30(b)(2)
  
- 73. Witness cargo tank testing
  - Verify tank type 46 CFR 151.15-1
  - Verify if nondestructive test is require 46 CFR 151.04-5(d)  
46 CFR 151.04-7
  - Verify if hydrostatic test is require 46 CFR 151.04-5(e)  
ASME, Appx 3

## Follow Up

- 74. Issue/Endorse vessel's certificates
  - Verify CAA is changed from draft to valid 46 CFR 31.40-1

## **International Addendum (BII)**

### **Pre-Inspection**

- 75. Research vessel details in MISLE (Marine Information for Safety and Law Enforcement) database
  - Review for approval category D NLS cargoes MISLE User Guide 46 CFR 151.12-5

### **Certificates and Documents**

- 76. Review Load Line Certificate (International/Coastwise)
  - Parent cites 46 CFR 31.25-1  
LL Policy Notes
  - Verify presence and type 46 CFR 42.03-5 & 07-5  
46 CFR 44.01-15
  - Verify validity 46 CFR 42.07-45  
ICLL Article 15
  - Verify proper certificate form 46 CFR 42.07-45(e)  
ICLL Article 18
  - Review cargo and ballast form 46 CFR 31.10-32(b)  
46 CFR 42.15-1(a)
  - Confirm load line observed on hull matches certificate 46 CFR 42.07-5(b)  
ICLL I/9
  - Verify Record of Conditions of Assignment (Form LL.11-D) is present and validates issued Load Line 46 CFR 42.09-15
- 77. Review International Anti-Fouling System (IAFS) certificate & Record of Anti-Fouling System
  - Verify surveys and certificates AFS Annex 4 Reg 1

78. Review International Oil Pollution Prevention Certificate (IOPP) & Form A
- Verify vessel particulars MARPOL I/9  
MARPOL I/Appendix II
  - Verify vessel type is accurate MARPOL I/2  
MARPOL I/9
  - Verify annual, intermediate, extension renewal, or change in anniversary date 33 CFR 151.17  
MARPOL I/6
  - Verify record of construction and equipment 33 CFR 151.23  
MARPOL I/9
  - Verify control requirements for machinery bilge and fuel oil tanks identified MARPOL I/14  
MARPOL I/16
  - Verify retention and disposal requirements for oily bilge water holding tanks 33 CFR 151.25  
MARPOL I/12
  - Verify standard discharge connection requirement 33 CFR 155.420 & .430  
MARPOL I/13

79. Review International Oil Pollution Prevention Certificate (IOPP) & Form B
- Verify presence 33 CFR 151.19(a)  
MARPOL I/7
  - Verify validity MARPOL I/10  
MARPOL I/6.1
  - Verify form/contents MARPOL I/9  
MARPOL I/Appendix II

- 80. Review International Air Pollution Prevention Certificate (IAPP) and Supplement Record of Construction and Equipment
- Verify vessel particulars MARPOL VI/8  
MARPOL VI/Appendix I
  - Verify annual, intermediate, renewal, repair and extension endorsements and/or change in anniversary date MARPOL VI/5
  - Verify ozone depleting substances identified MARPOL VI/12
  - Verify Nitrogen Oxide emission sources identified MARPOL VI/13
  - Verify Sulphur Oxide (fuel oil) requirements identified MARPOL VI/14  
CG-CVC Policy Ltr 12-04
  - Verify incinerator installation identified MARPOL VI/16
  - Verify validity of alternatives or equivalents MARPOL VI/4
  - Verify presence of Engine International Air Pollution Prevention (EIAPP) Certificate MARPOL VI/13.8  
NOx Code 2.1.1.1
  - Verify EIAPP details & review engine technical files CG-543 Policy Ltr 09-01 Encl. 1
  - Verify presence of engines identified MARPOL VI/13.1.1
  - Verify Statement of Compliance is accompanied by EPA issued EIAPP CG-543 Policy Ltr 09-01 Encl 1
- 81. Review International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances (IPPC-NLS)
- Verify presence 46 CFR 151.12-5  
46 CFR 153.8(b) & .12
  - Verify validity 46 CFR 153.8(b)(2)  
MARPOL II/10 & .12
  - Verify contents MARPOL II/9.4  
MARPOL II/Appendix III



- 82. Review International Energy Efficiency Certificate and Record of Construction
  - Verify presence MARPOL Reg VI/6
  - Verify validity MARPOL Reg VI/9
  - Verify proper form MARPOL Reg VI/8  
MARPOL VI/Appendix VIII
  - Verify vessel particulars MARPOL VI/Appendix VII
  - Verify Energy Efficiency Design Index requirement CG-CVC Policy Ltr 13-02 7.a  
IMO Res MEPC.203(62) 20.1
  - Verify Ship Energy Efficiency Management Plan is identified CG-CVC Policy Ltr 13-02 7.b  
IMO Res MEPC.203(62) 22
  - Verify Technical File requirements are met CG-543 Policy Ltr 09-01  
IMO Res MEPC.203(62) 20.1

### **Logs and Manuals**

- 83. Review Cargo Record Book and Procedures & Arrangements (P&A) Manual
  - Verify presence 46 CFR 151.12-5 & 153.490  
MARPOL II/14.1
  - Verify validity 46 CFR 153.490  
MARPOL II/14.1
  - Verify contents 46 CFR 153.490(b)  
MARPOL II/14.2
  
- 84. Review Shipboard Marine Pollution Emergency Plan (SMPEP)
  - Verify presence MARPOL II/17.1 & .3
  - Verify validity MARPOL II/17.1
  - Verify contents MARPOL II/17.2
  
- 85. Review Shipboard Oil Pollution Emergency Plan (SOPEP)
  - Verify contents 33 CFR 151.26(a) & (b)
  - Verify approval 33 CFR 151.27  
MARPOL I/37.1
  - Verify annual review 33 CFR 151.28(a) & (d)
  - Verify combination plan MARPOL I/37.3

## Pollution Prevention

- 86. Conduct an IOPP (MARPOL Annex I) survey
  - Verify oil record book entries 33 CFR 151.25, MSM II/E1-1 Checklist  
MARPOL I/17
  - Witness operational test of equipment 33 CFR 155.330 -.380  
MARPOL I/14
  - Verify piping and tank configuration 33 CFR 155.330 - .430  
MARPOL I/12
  - Confirm equipment installation matches international certificate IMO Res A.1120(30)  
IOPP Certificate Supplement

## **Liquefied Gas Addendum (BIG)**

### **Pre-Inspection**

- 87. Research vessel details in MISLE (Marine Information for Safety and Law Enforcement) database
  - Verify liquefied flammable gases authorized      MISLE User Guide  
46 CFR 38.01-5

### **Certificates and Documents**

- 88. Review Certificate of Inspection (COI)
  - Verify Cargo Tank(s) Internal/External Exam dates      46 CFR 38.25-1(a)(1) & (2)
  - Verify approved cargoes      46 CFR 38.01-5
  - Verify hull type number(s)      46 CFR 38.05-1(f)

### **Cargo Systems**

- 89. Inspect cargo tanks
  - Verify markings      46 CFR 38.05-5
  - Verify service life of cargo tank & secondary barrier insulation      46 CFR 38.05-20(a) - (d)
  - Examine condition of piping system insulation      46 CFR 38.05-20(e)
  - Verify means to refrigerate cargo      46 CFR 38.05-25

- 90. Inspect piping, valves, fittings and accessories
  - Verify types and pressure ratings 46 CFR 38.10-1(a) & (b)
  - Examine condition of connections 46 CFR 38.10-1(c)
  - Verify condition of valve seats, flanges and manhole gaskets 46 CFR 38.10-1(d)
  - Verify approval and types of expansion joints 46 CFR 38.10-1(e)
  - Examine condition of low temperature piping 46 CFR 38.10-1(f)
  - Examine condition of cargo tanks connections 46 CFR 38.10-1(g) & (i)  
46 CFR 38.10-5
  - Verify approval and piping connections below weather deck or liquid level 46 CFR 38.10-1(h)
  - Verify condition and testing of cargo hose(s) and fittings 46 CFR 38.15-5
  - Verify grounding of cargo tanks and barrier spaces 46 CFR 38.15-15(c)
  
- 91. Inspect quick-closing valves
  - Verify operation of remote shutdown 46 CFR 38.15-20
  - Verify fail safe closure type 46 CFR 38.10-1(j)
  - Verify location of remote shutoff valves 46 CFR 38.10-1(j)
  - Verify melting points of fusible links 46 CFR 38.10-1(j)
  - Verify location and operation of manual valve 46 CFR 38.10-1(j)
  
- 92. Inspect additional fittings on non-pressure type tanks
  - Verify operation of liquid level gaging device 46 CFR 38.10-1(q)(1)
  - Verify operation of high level alarm 46 CFR 38.10-1(q)(2)
  - Verify location and operation of temperature sensors 46 CFR 38.10-1(q)(3)
  - Verify location and operation of pressure and vacuum gages 46 CFR 38.10-1(q)(4)

- 93. Inspect safety relief valves
  - Verify approvals 46 CFR 38.15-10(a)
  - Verify relieving capacity and location 46 CFR 38.15-10(b)
  - Verify arrangements inspection requirements and witness test(s) 46 CFR 38.10-15(d)  
46 CFR 38.25-10(a) & (b)  
46 CFR 54.15-25
  - Examine means to protect non-pressure vessel tanks 46 CFR 38.10-15(e)
  - Examine relief valves for primary and secondary barrier of non-pressure vessel type tanks 46 CFR 38.10-15(f)
  
- 94. Inspect liquid gaging devices
  - Verify approval and type 46 CFR 38.10-20(a), (b) & (f)
  - Verify maximum cargo to be carried 46 CFR 38.10-20(c)
  - Verify location of shutoff device 46 CFR 38.10-20(e)
  - Verify arrangement of flat sight glasses 46 CFR 38.10-20(h)
  
- 95. Inspect leak detection system
  - Verify type and condition of safe electrical devices 46 CFR 38.15-15(a) & (b)
  - Verify segregation of electrical motors 46 CFR 38.15-15(b)
  - Verify approval of submerged motor pump 46 CFR 38.15-15(d)(1), (2), (4) & (7)
  - Verify operation of liquid sensing device shutdown and alarm location 46 CFR 38.15-15(d)(3)
  - Verify auxiliary means to empty tank 46 CFR 38.15-15(d)(5)
  - Verify means to disconnect power between power supply and switchboard 46 CFR 38.15-15(d)(6)
  - Verify local and operations of shutdowns 46 CFR 38.15-20(a)

- ☐ 96. Witness cargo tank testing
  - Verify tank type 46 CFR 38.05-3 & -4
  - Verify nondestructive test requirements 46 CFR 38.25-1(b)  
46 CFR 38.25-3
  - Verify hydrostatic test is requirements 46 CFR 38.25-1(c)
  - Verify non-pressure type tank test requirements 46 CFR 38.25-1(d)

## **Welding Repair**

- ☐ 97. Verify welding Procedure Qualification Records (PQR)
  - Parent cite 46 CFR 31.10-1  
46 CFR 31.30-1  
46 CFR 32.60-1
  - Confirm need for qualified welding procedure 46 CFR 2.75-70  
46 CFR 57.02-2(a)(1)
  - Verify variables on PQRs to the Welding Procedure Specification (WPS) ASME IX/QW-200.1(b)  
ASME IX/QW-483
  - Verify tests and results ASME IX/QW-200.2(b)
  
- ☐ 98. Verify welder is qualified to perform repair work
  - Parent cite 46 CFR 31.10-1  
46 CFR 31.30-1  
46 CFR 32.60-1
  - Confirm need for qualified welding procedure 46 CFR 2.75-70  
46 CFR 57.02-2(a)(1)
  - Verify Welder Performance Qualification (WPQ) is valid 46 CFR 57.02-3  
ASME IX/QW-322.1
  - Verify variables on WPQ(s) ASME IX/QW-301.2  
ASME IX/QW-301.4  
ASME IX/QW-484(a)
  - Verify tests are satisfactory ASME IX/QW-302.1  
ASME IX/QW-484(a)

## **Manned Barge Addendum (BIM)**

### **Certificates and Documents**

- 99. Review Certificate of Inspection (COI)
  - Validate fire fighting and lifesaving equipment 46 CFR 31.10-15(b)
  - Verify manning criteria Policy Ltr 16-04  
MSM III/Vol III/Ch-3 Pt B  
NVIC 02-81
  - Review manning amendment(s) Policy Ltr 16-04
  
- 100. Review Merchant Mariner Credentials (MMCs), medical certificates & TWIC
  - Verify presence of original credentials 46 CFR 10.203(c)
  - Verify validity of credentials 46 CFR 10.205
  - Ensure credentials, including endorsements, meet COI manning levels 46 CFR 13.107,109, .603, .605 & .609  
46 CFR 15.515 & .860 & 31.05-1(b)  
STCW I/2.6, A-V/1-1.1 & .2
  - Verify Vessel Security Officer (VSO) endorsement 33 CFR 104.215(c)  
STCW VI/5
  - Examine medical certificates 46 CFR 10.301  
STCW I/9
  - Verify Transportation Worker Identification Credential (TWIC) 46 CFR 10.203(b) & (d)
  
- 101. Examine muster list and emergency instructions
  - Parent cite MSM II/B4.E.2.e  
46 CFR 35.10-1
  - Verify muster lists and emergency instructions are posted 46 CFR 199.80
  - Verify information on muster lists and emergency instructions 46 CFR 199.80

- 102. Review Statement of Voluntary Compliance, MARPOL Annex IV (Sewage)
  - Verify vessel particulars NVIC 01-09 Ch-1
  - Verify compliance type 33 CFR 159.51-131  
NVIC 01-09 Ch-1  
IMO Res MEPC.227(64)
  - Verify discharge rate (draft & speed chart) identified 33 CFR 159.57  
NVIC 01-09 Ch-1
  - Verify endorsements NVIC 01-09 Ch-1
  
- 103. Examine maintenance and service records (lifesaving)
  - Parent cite 46 CFR 31.36-1
  - Review service record(s) 46 CFR 199.190
  
- 104. Review drug and alcohol program compliance
  - Verify compliance with required Employee Assistance Program (EAP), including education and training 46 CFR 16.401
  - Verify presence and currency of drug and alcohol testing equipment 46 CFR 4.06-15
  - Verify training of designated testing equipment crewmen 46 CFR 4.06-20(a)(3)
  - Verify crew are enrolled in a drug testing program 46 CFR 16.210 & .230
  
- 105. Review Tonnage Certificate (International (ITC)/Domestic)
  - Verify presence 46 CFR 69.3  
46 CFR 69.11 & .69  
46 CFR 69.179
  - Verify validity 46 CFR 69.15
  - Verify correct measurement system 46 CFR 69.11  
NVIC 11-93
  - Verify vessel particulars remain valid 46 CFR 69.55  
46 CFR 69.105  
ICTM Article 3



□ 106. Review International Anti-Fouling System (IAFS) certificate & Record of Anti-Fouling System

- Verify vessel particulars IMO Res MEPC.208(62)2011
- Verify COI has Anti-Fouling endorsement or, if not required, IAFS Certificates MSM II/B.3.J
- Verify records from manufacturer & shipyard(s) where coatings were applied AFS Annex 4 Reg 5(1)
- Verify vessel particulars on Record of Anti-Fouling System IMO Res MEPC.208(62)2011 MSM II/B.3.J
- Verify Anti-Fouling System details provided IMO Res MEPC.208(62)2011
- Verify that no change in Anti-Fouling System has occurred since issuance of IAFS Certificates IMO Res MEPC.195(61) 5.2 MSM II/B.3.J

□ 107. Review Drydock Inspection Report for compliance with Vessel General Permit (VGP) requirements

- Verify presence VGP 2013 4.1.1  
VGP 2013 4.2.1  
Policy Ltr 11-01
- Verify chain locker cleaned and/or flushed VGP 2013 4.1.4  
VGP 2013 2.2.8
- Verify inspection and removal of living organisms VGP 2013 4.1.4  
VGP 2013 2.2.8
- Verify anti-fouling hull coatings are applied, maintained, and removed consistent with FIFRA label VGP 2013 4.1.4  
VGP 2013 2.2.4
- Verify cathodic protection, anodes, or dialectic have been cleaned and/or replaced VGP 2013 4.1.4  
VGP 2013 2.2.7
- Verify all pollution control equipment is functioning VGP 2013 4.1.4  
VGP 2013 2.2.9

- 108. Verify compliance with Vessel General Permit (VGP)
  - Verify Notice of Intent (NOI) has been submitted
 

|  |                         |
|--|-------------------------|
|  | VGP 1.5.1.1 & 10        |
|  | VGP Table 1             |
|  | CG-543 Policy Ltr 11-01 |
  - Verify compliance with ballast water record keeping requirements
 

|  |                         |
|--|-------------------------|
|  | 33 CFR 151.2070         |
|  | VGP 4.3                 |
|  | CG-543 Policy Ltr 11-01 |
  - Verify noncompliance & reportable quantity reports have been submitted
 

|  |                         |
|--|-------------------------|
|  | VGP 4.4.1               |
|  | VGP 4.4.2               |
|  | CG-543 Policy Ltr 11-01 |
  - Verify inspections, monitoring & record keeping
 

|  |                         |
|--|-------------------------|
|  | VGP 4.1, 4.2 & 4.3      |
|  | CG-543 Policy Ltr 11-01 |

### **Logs and Manuals**

- 109. Verify compliance with STCW watchkeeping standards
  - Review watchstanding schedules
 

|  |                   |
|--|-------------------|
|  | 46 CFR 15.1111    |
|  | STCW A-VIII/1 & 2 |
  - Verify compliance with standing orders and other special instructions
 

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|  | STCW A-VIII/2 |
|--|---------------|
  
- 110. Review abandon ship and fire fighting training manual
  - Parent cites
 

|  |                 |
|--|-----------------|
|  | 46 CFR 35.10-1  |
|  | MSM II/B4.E.2.e |
  - Verify location
 

|  |                      |
|--|----------------------|
|  | 46 CFR 199.180(a)(1) |
|--|----------------------|
  - Verify contents
 

|  |                      |
|--|----------------------|
|  | 46 CFR 199.180(a)(2) |
|--|----------------------|
  
- 111. Review lifesaving equipment maintenance records
  - Parent cite
 

|  |                       |
|--|-----------------------|
|  | 46 CFR 35.07-10(b)(1) |
|--|-----------------------|
  - Review lifeboat servicing records
 

|  |                         |
|--|-------------------------|
|  | 46 CFR 199.190(e) & (f) |
|--|-------------------------|
  - Review rescue boat servicing records
 

|  |                         |
|--|-------------------------|
|  | 46 CFR 199.190(e) & (f) |
|--|-------------------------|
  - Review records for launching appliances
 

|  |                         |
|--|-------------------------|
|  | 46 CFR 199.190(i) & (j) |
|--|-------------------------|
  - Review weekly inspections & tests
 

|  |                   |
|--|-------------------|
|  | 46 CFR 199.190(d) |
|--|-------------------|

- 112. Review Waste/Garbage Management Plan
  - Verify validity 33 CFR 151.57  
MARPOL V/10
  - Verify contents 33 CFR 151.55  
MARPOL V/10  
IMO Guidelines - Appendix 3
  
- 113. Review Garbage Record Book
  - Verify validity 33 CFR 151.55  
MARPOL V/10
  - Verify contents 33 CFR 151.55  
MARPOL V/10
  
- 114. Review logbook entries
  - Parent cite 46 CFR 35.07-1
  - Verify training, musters & drills 46 CFR 35.10-1  
46 CFR 199.180(h)
  - Verify testing of emergency lighting/power operations 46 CFR 32.40-60  
46 CFR 35.10-15(d)
  - Verify sanitary inspections are logged 46 CFR 31.10-45
  
- 115. Review Oil Record Book Part I (ORB)
  - Verify presence of pollution placard 33 CFR 151.25(a),(j) & (k)
  - Verify edition of ORB 33 CFR 151.25(b)  
IMO MEPC.187(59)  
CG-CVC Letter
  - Verify signatures entries, Master and qualified engineer 33 CFR 151.25(h) & (j)
  - Verify entries 33 CFR 151.25(d), (e) & (f)  
33 CFR 151.25(h)  
MARPOL I/17 Appendix III
  - Compare overboard discharge rate entries with filtering equipment data plate or supplement to IOPP certificate 33 CFR 151.25 (d) & (e)  
MARPOL I/17 & 36  
MARPOL I/Appendix III

- 116. Review Oil Record Book Part II (Cargo/Ballast Operations)
  - Verify presence 33 CFR 151.25  
MARPOL I/36.1
  - Verify validity and contents 33 CFR 151.25(d)  
MARPOL I/36.1-36.6  
MARPOL I/Appendix III
  - Verify presence of completed books 33 CFR 151.25(k)  
MARPOL I/36.7
  
- 117. Review cargo and ballast system instructional manual
  - Verify presence 33 CFR 157.23(a)
  - Verify format and contents 33 CFR 157.23(b)
  
- 118. Review ballast water management documents
  - Verify USCG-approved 33 CFR 151.2025(a)(1)
  - Verify approved alternate management system 33 CFR 151.2026
  - Verify management plan 33 CFR 151.2050(g)  
NVIC 07-04 Ch-1
  - Verify reporting requirements are met 33 CFR 151.2060
  - Verify discharge standard 33 CFR 151.2030
  
- 119. Examine cargo gear records
  - Verify presence 46 CFR 31.10-16(a)
  - Verify tests & examinations 46 CFR 31.10-16(d)

- 120. Review Tank Vessel Response Plan (TVRP)
  - Verify presence
    - 33 CFR 155.1015
    - 33 CFR 155.1025
    - 33 CFR 155.1030(i)
  - Verify validity
    - 33 CFR 155.1065(c)
  - Verify contents
    - 33 CFR 155.1030
    - 33 CFR 155.1035
    - 33 CFR 155.1045
  - Verify training
    - 33 CFR 155.1055
  - Verify exercises
    - 33 CFR 155.1060
  - Verify inspection & maintenance of response resources
    - 33 CFR 155.1062
  - Verify annual review
    - 33 CFR 155.1070
  
- 121. Review logbook entries
  - Parent cite
    - 46 CFR 35.07-1
  - Verify log entries & signatures
    - 46 USC 11302(4) & (5)
    - 46 CFR 35.07-5
  - Verify training, musters & drills
    - 46 CFR 35.10-1
    - 46 CFR 199.180(h)
  - Verify drafts, load line markings
    - 46 CFR 35.07-10(c)(2)
  - Verify compliance with applicable stability requirements
    - 46 CFR 35.20-7(c) & (d)
  - Verify cargo gear inspection
    - 46 CFR 35.07-10(c)(3)
  - Verify marine casualties documented
    - 46 CFR 35.15-1
    - 46 CFR 4.05-15

## Security

122. Evaluate crew's knowledge of security plan
- Identify Company Security Officer (CSO) 33 CFR 104.200(b)(2)
  - Identify Vessel/Ship Security Officer (VSO/SSO) 33 CFR 104.200(b)(2)
  - Evaluate VSO's knowledge regarding his/her responsibilities 33 CFR 104.215(e)  
NVIC 04-03 Encl. 3 Section 9
  - Evaluate crew's level of knowledge regarding his/her security responsibilities 33 CFR 104.220  
NVIC 04-03 Encl. 3 Section 10
  - Verify compliance with current Maritime Security (MARSEC) level 33 CFR 104.215(e)(9)  
33 CFR 104.240
123. Verify security training & records
- Verify all access points are monitored 33 CFR 104.265(a)(3) & (b)(1)  
ISPS A/7.2.2
  - Observe gangway watch control of embarkation of persons and effects 33 CFR 104.265(a) & b(1)
  - Verify security communications 33 CFR 104.245
  - Verify security level 33 CFR 104.240
  - Verify signage 33 CFR 104.265(f)(3)
  - Verify training for all other vessel personnel 33 CFR 104.225 & 104.235

## General Health & Safety

124. Inspect means of escape from accommodation, machinery and other spaces
- Parent cites 46 CFR 31.35-1  
46 CFR 32.40-60
  - Verify means of escape marked 46 CFR 32.02-1
  - Verify routes are accessible 46 CFR 32.02-10  
CG-CVC Policy Ltr 16-04
  - Verify location and operation of emergency lighting 46 CFR 32.40-45  
46 CFR 111.75-15(c)(2)
  - Verify emergency lighting markings 46 CFR 35.40-6
  - Verify location of exit signs 46 CFR 35.40-6  
46 CFR 111.75-15  
46 CFR 112.15-1(d)

- ☐ 125. Inspect general emergency alarm system
  - Verify location and operation of contact makers 46 CFR 32.25-1  
46 CFR 113.25-5 & -11
  - Verify location and operation of audible signals 46 CFR 32.25-1  
46 CFR 113.25-9
  - Verify location and operation of emergency red-flashing lights (if required) 46 CFR 32.25-1  
46 CFR 113.25-10
  - Verify markings 46 CFR 35.40-1 & -5  
46 CFR 113.25-20
  - Verify location and operation of public address system 46 CFR 32.25-1  
46 CFR 113.50-5 & -10
  - Verify operation of loud speakers 46 CFR 32.25-1  
46 CFR 113.50-15
  - Verify operations with emergency power source 46 CFR 32.25-1  
46 CFR 113.25-6

- ☐ 126. Inspect accommodation spaces
  - Parent cite for manned tank barges 46 CFR 32.40-60
  - Verify location 46 CFR 32.40-10
  - Verify number of berths 46 CFR 32.40-20
  - Verify appropriate size 46 CFR 32.40-20
  - Verify accessibility to escape routes 46 CFR 32.02-10
  - Verify heating/cooling/ventilation 46 CFR 32.40-50
  - Verify sanitary conditions 46 CFR 32.40-15
  - Verify washrooms & toilets are suitable 46 CFR 32.40-25
  - Verify lighting 46 CFR 32.40-45
  - Verify insect screens 46 CFR 32.40-45
  - Verify adequate exit (egress) lighting/markings 46 CFR 199.110(d)

- 127. Inspect galley spaces and messrooms
  - Verify sanitary conditions 46 CFR 31.10-45, 32.40-15
  - Verify operation of electric stove & deep fryer disconnect 46 CFR 110.10-1(f)(5)  
IEEE 45/42.1.6
  - Examine fire fighting equipment 46 CFR 34.50-10
  - Verify installation of grab rails on electric ranges 46 CFR 110.10-1(j)(5)  
IEEE 45/19.1.1
  - Verify ventilation 46 CFR 32.55-1(a)
  - Examine condition of vents and ducts MSM II/B.1.N.9
  - Verify required sanitary inspections 46 CFR 31.10-45
  - Verify installation of all electrical appliances 46 CFR 111.77-3

- 128. Inspect other crew spaces
  - Parent cite 46 CFR 32.40-60
  - Examine laundry facilities 46 CFR 32.40-40(a)
  - Examine recreation space(s) 46 CFR 32.40-40(b) & (c)

## Firefighting Systems

- 129. Inspect areas for compliance with Structural Fire Protection (SFP) requirements
  - Verify installation in accordance with approved Fire Safety Plan 46 CFR 35.10-3(a)  
NVIC 09-97 Ch-1
  - Verify equivalencies and design assumptions 46 CFR 30.15  
NVIC 09-97 Para 1.2
  - Verify type approval categories NVIC 09-97 Para 1.3
  - Verify approvals of structural fire protection materials NVIC 09-97 Chap 2
  - Verify bulkhead and deck classifications 46 CFR 32.57-10  
NVIC 09-97 Chap 3
  - Verify condition of draft stops 46 CFR 32.56-45
  - Verify boundaries are maintained 46 CFR 32.56 & .57
  - Verify no unapproved modifications 46 CFR 32.56 & .57  
MSM II/7(2)(c)(2)



- 130. Review approved Safety Plan (Fire-Control Plan)
  - Parent cite 46 CFR 35.10-3
  - Verify location and approval 46 CFR 31.10-5(a)
  - Verify equipment installation to approved plan 46 CFR 31.10-5(c)
  - Verify use of international symbols 46 CFR 31.10-5(a)  
IMO Res A.952(23)
  - Verify structural fire protection is identified IMO Res A.952(23)
  
- 131. Inspect fire boundary closures
  - Parent cites 46 CFR 31.30-1  
46 CFR 31.35.01-1
  - Verify display of general arrangement plans 46 CFR 35.10-3(a)
  - Witness operation of local and remote controls of fire doors as listed on the approved Fire Safety Plan 46 CFR 111.99-5  
46 CFR 61.40-6 & -10
  - Witness operation of local and remote controls of fire damper as listed on the approved Fire Safety Plan 46 CFR 61.40-6 & -10
  - Verify dampers and fire doors close during power ventilation shutdowns as listed on the approved Fire Safety Plan 46 CFR 111.99-5, 103-1 & -3
  - Verify remote controls and fire dampers are marked 46 CFR 111.103-1(b)(2), -7

- 132. Inspect semi-portable fire extinguishers
  - Confirm locations with approved safety plan (Fire Control Plan) 46 CFR 35.10-3(a)
  - Verify inspection/maintenance compliance 46 CFR 31.10-18(a)  
NFPA 10 Chap 7 & 8
  - Examine stowage, condition of cylinders and hoses 46 CFR 31.10-18(a)  
46 CFR 34.50-20  
NFPA 10, Chap 7
  - Verify type, quantity and locations 46 CFR 34.50-10  
MSM II/C.2.1.4
  - Verify markings 46 CFR 34.05-10(a)  
46 CFR 35.40-25 & -40  
Firefighting Systems Inspection (FF)
  
- 133. Inspect fireman's outfits and equipment
  - Verify type approval and quantity 46 CFR 35.30-20(b)
  - Verify stowage and markings 46 CFR 35.40-20
  - Verify locations are marked on safety plan (Fire Control Plan) 46 CFR 35.10-3(a)
  - Verify condition of emergency equipment 46 CFR 35.30-20(c)
  - Verify number of spare bottles 46 CFR 35.30-20(c)(1)  
Firefighting Systems Inspection (FF)
  
- 134. Inspect fire and smoke detecting systems
  - Parent cites 46 CFR 34.01-5(b)(2) & -10
  - Witness system servicing and testing 46 CFR 31.10-15(b)  
46 CFR 61.40-6 & -10
  - Verify two sources of power 46 CFR 31.35-5,  
46 CFR 113.10-9
  - Verify operation of control unit's visual and audible alarms 46 CFR 161.002-8
  - Verify markings 46 CFR 161.002-4(b)  
FSS Code 9.2.5.1.3 & 4
  - Verify alarms sounds in required locations 46 CFR 161.002-10(b)

- 135. Inspect portable fire extinguishers
  - Confirm locations with approved safety plan (Fire Control Plan)
 46 CFR 35.10-3(a)
  
- 136. Inspect high pressure CO2 system
  - Determine applicability
 46 CFR 34.01-5(a)  
46 CFR 34.01-10
  - Ensure safety precautions implemented prior to servicing system
 MSM II/C.2.1.5
  - Verify servicing
 46 CFR 31.10-17(a), .10-18(d) &-19  
NVIC 06-72 Encl.1/II.D.2
  - Verify cylinder stowage/condition
 46 CFR 34.15-20  
46 CFR 147.60(b) &.65(b)
  - Examine material condition of system components
 46 CFR 34.15-15 & -20
  - Verify piping & nozzles clear
 46 CFR 34.15-15 & -25  
NVIC 06-72 Encl.1/II.D.2
  - Witness operational test of time delays & alarms
 46 CFR 31.10-19
  - Verify markings/warning signs posted
 46 CFR 35.40-7, -8 & -10
  - Verify operating instructions posted
 46 CFR 34.15-10(h)  
NVIC 06-72 Encl.1/II.D.2.4
  - Verify access to locked supply valves/controls
 46 CFR 34.15-10(i)
  - Verify ventilation enclosure operation
 46 CFR 34.15-35  
46 CFR 61.40-6 & -10  
NVIC 06-72 Encl.1/II.D.2
  - Verify lockout valve
 46 CFR 34.15-50
  - Verify presence of odorizing unit
 46 CFR 34.15-60

## Lifesaving Equipment

- ☐ 137. Inspect work vests
  - Verify type approval 46 CFR 35.03-5
  - Verify stowage 46 CFR 35.03-15
  - Examine condition and serviceability 46 CFR 35.03-20
  - Examine hybrid work vests 46 CFR 35.03-25
  
- ☐ 138. Inspect life jackets
  - Parent cites 46 CFR 31.36-1
  - Verify type approval 46 CFR 199.70(b), .620a  
NVIC 08-04 Ch-1
  - Verify quantity 46 CFR 199.70(b)(1), .212(a)  
Table 199.610 (a) & (b)
  - Verify stowage 46 CFR 199.03(b)(2), .70(b)(2)  
46 CFR 199.212(b)
  - Verify stowage markings 46 CFR 199.70(b)(2)(iii)
  - Verify operation of lights and whistles 46 CFR 199.70(b)(4)  
Tables 199.610a, 620a
  - Verify location and information for donning instructions 46 CFR 199.80(c)
  - Examine condition and suitability 46 CFR 199.45(b)(3)  
46 CFR 199.190(a)(b)& (g)(2)  
46 CFR 160.006-2
  
- ☐ 139. Inspect line throwing equipment
  - Parent cites 46 CFR 31.36-1  
46 CFR 30.15-1(b)  
G-MSE Policy Ltr 04-01
  - Verify stowage, quantity and type approval 46 CFR 199.170  
46 CFR 160.031 & .040
  - Verify inventory list and equipment 46 CFR 199.170
  - Verify markings on primer cartridges 46 CFR 160.031-6  
46 CFR 160.040-6
  - Verify presence of service and maintenance instructions 46 CFR 160.031-4  
46 CFR 160.040-4

- ☐ 140. Inspect immersion suits
  - Parent cite 46 CFR 31.36-1
  - Verify type approval 46 CFR 199.273(a)  
NVIC 08-04 Ch-1
  - Verify quantity and size 46 CFR 199.03(b)(13), .70(c),  
.214  
46 CFR 199.273(a)(b), Table  
.610(b)(c)
  - Verify stowage 46 CFR 199.03(b)(2), .70(c)(2)  
46 CFR 199.273(b)
  - Verify stowage location markings 46 CFR 199.70(c) & (d)
  - Examine lights 46 CFR 199.70(c)(4)(i), Table  
610(a)
  - Examine whistle 46 CFR 199.70(c)(4)(ii), Table  
.610(a)
  - Examine condition and suitability 46 CFR 199.45(b)(3)  
46 CFR 199.180(a)(2)  
NVIC 01-08
  - Verify location and information for  
donning instructions 46 CFR 199.180(a)(1) & (2)

- ☐ 141. Inspect distress signals
  - Parent cite 46 CFR 31.36-1
  - Verify stowage and markings 46 CFR 199.60  
46 CFR 160.036
  - Verify quantity 46 CFR 199.60
  - Verify expiration date 46 CFR 160.036  
LSA Code 1.2.3
  - Verify type approval 46 CFR 199.60  
46 CFR 160.036

- ☐ 142. Inspect lifebuoys
  - Parent cite 46 CFR 31.36-1
  - Verify type approval 46 CFR 199.70(a)
  - Verify quantity 46 CFR 199.271
  - Verify stowage 46 CFR 199.70(a)(1)
  - Verify markings 46 CFR 199.70(a)(2)
  - Examine attachments and fittings 46 CFR 199.70(a)(3)
  - Verify size/weight 46 CFR 160.050-4(e)
  - Verify condition and suitability 46 CFR 199.70

- 143. Inspect inflatable liferaft installations
  - Parent cites 46 CFR 31.36-1  
46 CFR 30.15-1(b)  
G-MSE Policy Ltr 04-01
  - Verify type approval 46 CFR 199.261(a)(3)
  - Verify quantity 46 CFR 199.261(d)
  - Verify stowage & installation 46 CFR 199.130(a) & (c)
  - Verify markings 46 CFR 199.178  
IMO Res A.654(16)
  - Verify service dates 46 CFR 199.190(g)
  - Verify emergency instructions are posted 46 CFR 199.90
  - Examine embarkation ladder 46 CFR 199.110(f)

- 144. Inspect rescue boat
  - Parent cites 46 CFR 31.36-1  
46 CFR 30.15-1(b)  
G-MSE Policy Ltr 04-01
  - Verify type approval 46 CFR 199.262
  - Verify stowage 46 CFR 199.140
  - Verify markings 46 CFR 199.176(a)
  - Examine equipment 46 CFR 199.175
  - Verify condition 46 CFR 199.190
  - Verify operation MSM II/B.1.P

- 145. Inspect lifeboats
  - Parent cites 46 CFR 31.36-1  
46 CFR 30.15-1(b)  
G-MSE Policy Ltr 04-01
  - Verify type approval 46 CFR 199.261(a)(1)
  - Verify stowage 46 CFR 199.130(a) & (b)
  - Verify markings 46 CFR 199.176(a)  
46 CFR 199.178  
IMO Res A.654(16)
  - Examine equipment 46 CFR 199.175  
LSA Code 4.4.8
  - Examine condition 46 CFR 199.190  
MSM II/C.2.H
  - Verify operating instructions are posted 46 CFR 199.90
  - Examine embarkation ladder 46 CFR 199.110(f)
  - Verify operation MSM II/B.1.P
  - Verify equipped with fire protection system 46 CFR 199.261(g)  
46 CFR 199.290(b)  
LSA Code 4.9
  - Verify self-contained air support system 46 CFR 199.261(f)  
LSA Code 4.8 & 4.9

- 146. Inspect Emergency Position Indicating Radio Beacon (EPIRB)
  - Parent cites 46 CFR 31.36-1
  - Verify registration 47 CFR 80.1061(e) & (f)
  - Verify stowage 46 CFR 199.510(b)
  - Verify hydro-static release expiration date 46 CFR 199.510
  - Verify battery date 46 CFR 199.190
  - Verify marking 46 CFR 199.60(b)
  - Validate testing 46 CFR 199.190

## Electrical Systems

- ☐ 147. Inspect emergency lighting
  - Parent cite 46 CFR 31.35-1
  - Verify source 46 CFR 112.05-5  
46 CFR 112.15-1 & .43
  - Verify location 46 CFR 111.75-15(c)(2)
  - Verify operation 46 CFR 111.75-15(c)(2)
  - Verify operation of embarkation station lighting 46 CFR 111.75-16
  - Verify markings 46 CFR 35.40-6
  
- ☐ 148. Inspect emergency generator(s) and prime mover(s)
  - Parent cites 46 CFR 31.35-1  
46 CFR 112.05(a)
  - Verify power source requirement 46 CFR 112.05-05
  - Verify prime mover requirement 46 CFR 58.10-10 & 01-5  
46 CFR 111.12-1  
46 CFR 112.50-1
  - Verify starting requirements 46 CFR 112.50-1(d)
  - Examine starting systems 46 CFR 112.50-1(e) & (k)
  - Verify operation of auto-start function 46 CFR 112.50-1(d)  
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) & (i)
  - Verify gauges ABS 4-2-1/7.17
  - Verify marking and operation of remote fuel shutoff valves 46 CFR 56.50-60(c) & (d)
  - Verify set point and operation of over speed shut-down 46 CFR 111.12-1(b)  
46 CFR 111.50-1(g)  
ABS 4-2-1/7.5.3
  
- ☐ 149. Inspect emergency generator(s) and prime mover(s) (continued)
  - Verify set point and operation of lube oil shut-down 46 CFR 111.12-1(c)  
46 CFR 112.50-1(g)
  - Verify generator nameplates attached 46 CFR 111.12-5  
ABS 4-2-1/1.1



- 150. Inspect battery installation
  - Parent cite 46 CFR 31.35-1
  - Determine categories 46 CFR 111.15-3
  - Verify installation 46 CFR 111.15-5(a)-(d)
  - Verify nameplates 46 CFR 111.15-5(e)
  - Verify liner spacing 46 CFR 111.15-5-(f) & (g)
  - Verify ventilation 46 CFR 111.15-10
  - Verify operation of power ventilation interlock with charger 46 CFR 111.15-10(b)(4)
  - Verify connections 46 CFR 111.15-20
  - Verify presence of overload and reverse current protective device 46 CFR 111.15-25
  - Verify means of charging 46 CFR 111.15-30
  
- 151. Inspect motor controllers
  - Parent cite 46 CFR 31.35-1
  - Verify installation 46 CFR 111.70-3(a)
  - Verify marking(s) 46 CFR 111.70-3(d)(1)
  - Verify wiring diagram in enclosure 46 CFR 111.70-3(d)(2)
  - Verify interlocks 46 CFR 111.70.7(d)
  - Verify drip-proof/watertight 46 CFR 111.01-3(a) & 9(a)
  - Verify low voltage release motor controller for vital systems 46 CFR 111.70-3(b)
  
- 152. Inspect lighting systems/fixtures
  - Parent cite 46 CFR 31.35-1
  - Verify lighting 46 CFR 111.75-15
  - Examine condition and installation of fixtures 46 CFR 111.75-20
  - Verify lighting branch circuits 46 CFR 111.75-5

- ☐ 153. Inspect panelboards (distribution panels)
  - Parent cite 46 CFR 31.35-1
  - Verify presence of dead front (blanks), panel construction and rating 46 CFR 111.40-1, -5 & -13
  - Verify accessibility 46 CFR 111.40-7
  - Verify operation of locking device 46 CFR 111.40-9
  - Review breaker numbering and information on directory card 46 CFR 111.40-11

- ☐ 154. Inspect switchboard(s)
  - Parent cite 46 CFR 31.35-1
  - Verify presence of dead front (blanks), accessibility and construction 46 CFR 111.30-1 thru -5  
IEEE 45-2002 8.3
  - Verify and non-conductive handrail(s), matting or deck grating 46 CFR 111.30-1  
46 CFR 111.30-11
  - Review information on nameplates 46 CFR 111.30-15
  - Verify operation of alternating current service switchboard components 46 CFR 111.30-25
  - Verify operation of direct current service switchboard components 46 CFR 111.30-27
  - Verify operation of emergency switchboard components 46 CFR 111.30-29

## **Topside Equipment**

- ☐ 155. Inspect ground tackle and related equipment
  - Examine condition of anchor 46 CFR 32.15-15(a)  
ABS 3-5-1 & 7-3-2/1.1.7
  - Examine anchor chains 46 CFR 32.15-15(a)
  - Examine ground tackle connection points and condition (windlass, capstan, cats paw, etc.) 46 CFR 32.15-15(a)  
ABS 7-3-2/1.1.7
  - Examine towing/mooring equipment and lines ABS 3-5-1.15  
ABS 3-5-1/Table 2

- ☐ 156. Inspect guards, ladders, rails, and gangways
  - Verify rail heights and courses 46 CFR 32.02-10(a)  
46 CFR 42.15-75  
ICLL I/25 & Policy Ltr 16-04
  - Verify condition of storm rails 46 CFR 32.02-10(d)  
46 CFR 42.15-75  
ICLL I/25
  - Verify guards in dangerous places 46 CFR 32.02-15  
Policy Ltr 16-04

- ☐ 157. Inspect air ports, covers and natural vent openings
  - Parent cite 46 CFR 31.25-1
  - Verify covers are readily available and operational 46 CFR 42.15-45 & 65
  - Examine condition 46 CFR 42.15
  - Examine covers for fit and seal 46 CFR 42.15  
ICLL I/23  
MSM II/B.1.E.5

### **Emergency Drills**

- ☐ 158. Evaluate fire drill
  - Parent cite 46 CFR 31.36-1
  - Witness drill 46 CFR 199.250  
MSM II/B.1.P.3.v
  - Verify crew's ability to organize 46 CFR 199.180(f)
  - Verify crew's familiarity with their duties and use of equipment 46 CFR 199.180(f)
  - Verify firefighting gear is compatible and complete 46 CFR 199.180(f)(3)
  - Verify operation of alarms 46 CFR 199.180(f)(3)
  - Verify effective communication equipment 46 CFR 199.180(f)(2)(iv)

- 159. Evaluate abandon ship drill
  - Parent cite 46 CFR 35.10-1
  - Witness drill 46 CFR 199.180(d)
  - Verify general alarm and public address announcements 46 CFR 199.180(d)
  - Verify crew's familiarity with assigned duties 46 CFR 199.180(b)  
STCW A-VI/1-1
  - Evaluate crew are suitably dressed and proficient in donning lifejackets and/or immersion suits 46 CFR 199.180(d)  
STCW A-VI/1-1
  - Witness operation of davit launching lifeboat or rescue boat 46 CFR 199.180(d)
  - Witness operation of lifeboat or rescue boat engine 46 CFR 199.180(d)
  - Witness operation of davit launching liferafts 46 CFR 199.180(d)
  
- 160. Evaluate security drill
  - Review procedures contained in security plan 33 CFR 104.230(b)(2)  
ISPS Code A/9.4.4  
NVIC 04-03 Encl. 3/12.B
  - Witness drill 33 CFR 104.230(a)  
ISPS Code A/13.4
  - Evaluate crew's response 33 CFR 104.220  
ISPS Code A/13.3  
STCW A-VI/6
  - Verify control and communication 33 CFR 104.245  
ISPS Code A/7.2.7
  - Verify implementation of plan procedures 33 CFR 104.230(a)  
ISPS Code A/9.4

## Machinery Equipment

- 161. Inspect electric hotwater heater(s)
  - Verify pressure and temperature relief valve standards for heater with 120 gallons or less capacity 46 CFR 63.25-3(a)
  - Examine heating element regulating device 46 CFR 63.25-3(f)
  - Verify independent temperature limiting device 46 CFR 63.25-3(g)
  - Verify pressure and temperature relief valve settings 46 CFR 63.25-3(h)
  - Examine markings on boiler 46 CFR 63.25-3(i)
  - Witness testing of relief valves 46 CFR 63.25-3(j)
  - Witness testing of other boiler components if necessary 46 CFR 63.25-3(j)
  
- 162. Inspect fuel oil service systems
  - Parent cite 46 CFR 32.35-1
  - Examine piping arrangements 46 CFR 56.50-60(a)
  - Exam piping heating coil arrangement 46 CFR 56.50-60(b)
  - Examine filling piping arrangements 46 CFR 56.50-60(c)
  - Verify valve arrangement inside and outside fuel oil tank 46 CFR 56.50-60(d)(1) & (2)
  - Verify power operated valves configurations, instructions & operations 46 CFR 56.50-60(d)(3), (4)
  - Verify tanks/piping/valves not located in prohibited locations 46 CFR 56.50-60(e)-(h)
  - Verify flange or mechanical joints fitted with suitable shield 46 CFR 56.50-60(j)
  - Verify drip pan installation 46 CFR 56.50-60(k)
  - Verify storage, distribution and use of oil in systems 46 CFR 56.50-60(m) & (n)
  - Examine nonmetallic flexible hoses and fittings 46 CFR 56.50-60(n)(2)
  - Verify locations, markings and operation of transfer/service pump shutdowns 46 CFR 58.01-25  
46 CFR 61.20-3(a) & (b)

☐ 163. Inspect diesel fuel oil systems

- Parent cite 46 CFR 31.30-1
- Examine piping arrangements 46 CFR 56.50-75(a)(1)
- Examine piping heating coil arrangement 46 CFR 56.50-75(a)(1)
- Examine fill piping arrangements 46 CFR 56.50-75(a), (b)(6)
- Verify manual control valves arrangements 46 CFR 56.50-60(b)(1)  
46 CFR 56.50-75(a)(2) & (4)
- Verify power operated valve configurations, instructions and operations 46 CFR 56.50-75(a)(1)
- Verify tanks/piping/valves not located in prohibited locations 46 CFR 56.50-60(c)  
46 CFR 56.50-75(a)
- Verify flange/mechanical joints fitted with suitable shield 46 CFR 56.50-60(j)  
46 CFR 56.50-75(a)(1)
- Verify drip pan installation 46 CFR 56.50-60(k)  
46 CFR 56.50-75(a)(1)
- Verify oil storage, distribution and use in systems 46 CFR 56.50-60(m)  
46 CFR 56.50-75(a)(1)
- Examine nonmetallic flexible hoses and fittings 46 CFR 56.50-70(b)  
46 CFR 56.50-75(a)(2)  
46 CFR 56.60-25(b)
- Verify locations, markings and operation of transfer/service pump shutdowns 46 CFR 56.50-75(a)(1)  
46 CFR 56.50-60(a)

☐ 164. Inspect ballast water system

- Parent cite 46 CFR 31.30-1
- Verify system approval 46 CFR 162.060
- Verify ballast piping, valve and pumping arrangements 46 CFR 56.50-50(h)-(k)
- Verify remote valve controls are fitted with nameplates 46 CFR 56.50-1(g)(2)(iii)
- Verify compliance for Ballast Water Management 33 CFR 151.1500 - .1518  
33 CFR 151.2000 - .2075

- 165. Inspect Unfired Pressure Vessels (UPVs)
  - Parent cite 46 CFR 31.30-1
  - Verify if exempt from inspection 46 CFR 54.01-15
  - Verify data plate(s) are legible 46 CFR 54.10-20
  - Verify external and/or an internal exam and/or hydrostatic test needs 46 CFR 61.10-5(b), (d) & (e)
  - Examine externally for signs of excessive wear, fatigue, deterioration, physical damage, misalignment, improper flange-to-flange spacing, & leakage 46 CFR 61.10-5(b)(1)
  - Examine internally (when accessible) 46 CFR 54.01-35  
46 CFR 61.10-5(b)(2)  
MSM II/B.1.O
  - Witness hydrostatic test (if applicable) 46 CFR 61.10-5(d)  
46 CFR 61.10-5 (e)(4)  
MSM II/B.1.O
  - 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 54.15-10(a) & (g)  
46 CFR 61.10-5(i)

### **Structural/Watertight Integrity**

- 166. Inspect hatches and Class-1 watertight doors
  - Parent cite 46 CFR 31.10-30
  - Verify condition of knife edges MSM II/B.1.E.5
  - Verify condition of gasket material MSM II/B.1.E.5
  - Verify watertight integrity between gasket and knife edge 46 CFR 170.270(a) & (b)  
MSM II/B.1.E.5
  - Verify location, condition and operation of hinges and dogging devices 46 CFR 170.255(a)  
MSM II/B.1.E.5
  - Verify design ,operation, installation and testing of quick-acting closing-device 46 CFR 170.270  
46 CFR 170.255(d)
  - Verify operation of indicator lights at the control station 46 CFR 170.255(e)  
46 CFR 170.270(e)
  - Verify doors are installed in permissible locations 46 CFR 170.255

## Pollution Prevention

- 167. Inspect sewage system
  - Verify presence of manufacturer's instructions 33 CFR 159.57
  - Verify Operation Manual on Board 33 CFR 159.57  
Operations Manual
  - Verify Marine Sanitation Device (MSD) approval 33 CFR 159.2,.7 & .12  
MSM II/B.6.F.4
  - Verify capacity 33 CFR 159.57(b)(8)
  - Verify piping and wiring 33 CFR 159.97
  - Verify instructions and warning placard posted 33 CFR 159.59
  
- 168. Conduct an international air pollution prevention (MARPOL Annex VI) survey
  - Verify equipment/systems containing chlorofluorocarbons (CFCs), hydro CFCs and volatile organic compounds (VOCs) are on certificate MARPOL VI/12
  - Verify presence of equipment on certificate, approvals and equivalencies MARPOL VI/4  
IMO Res A.1120(30)
  - Verify compliance with Emission Control Area (ECA) MARPOL VI/13 & 14  
Appendix VII  
CG-543 Policy Ltr 09-01
  - Review exhaust cleaning systems equivalency documentation MARPOL VI/4
  - Review delivery notes MARPOL VI/18.5  
Appendix V
  - Verify samples MARPOL VI/18.8.1
  - Verify compliance with NOx and SOx MARPOL VI/13 & 14  
40 CFR 1043.30  
CG-543 Policy Ltr 09-01
  - Review notification(s) of fuel oil availability and quality MARPOL VI/18.2.4



## Cargo Systems

- 169. Inspect fixed/portable vapor detection instruments
  - Verify presence 46 CFR 35.30-15(b)
  - Verify operation of combustible gas indicator Manufacturer's Ops Manual
  
- 170. Inspect cargo pump room
  - Verify Marine Chemist Certificate prior to entry MSM I/10 App. A
  - Verify operation of ventilation
    - 46 CFR 32.60-20
    - 46 CFR 32.55-1
    - 46 CFR 151.25-2(a)
  - Verify access arrangements 46 CFR 32.60-20(d)
  - Verify bilge piping and pump operation 46 CFR 32.52-35
  - Verify type condition of electrical equipment
    - 46 CFR 32.65-20
    - 46 CFR 151.05-1(o)
    - 46 CFR 111.105
  - Examine spool piece MARPOL I/1.18 UI 3.1
  - Verify bulkhead between pump room and engine room is gas tight
    - 46 CFR 32.50-1
    - 46 CFR 111.105
  - Verify termination of pump room exhaust ventilation 46 CFR 151.50-5(h)
  
- 171. Inspect designated observation area
  - Verify location 33 CFR 157.13
  - Verify means to stop discharge of effluent 33 CFR 157.13(b)(1)
  - Verify communications
    - 33 CFR 155.785(d)
    - 33 CFR 157.13(b)(2)

- 172. Inspect portable tank(s)
  - Verify tank(s) approved 46 CFR 64 & 98.30-4 & .30-5  
49 CFR 172.101 Table  
IMDG Code Vol. I & II
  - Verify stowage and segregation 46 CFR 98.30-7 & -12  
49 CFR 172.326  
49 CFR 176.83
  - Verify additional fire fighting equipment 46 CFR 98.30-37
  - Verify fill and discharge requirement(s) complied with 46 CFR 98.30-23, -25 & -27  
46 CFR 98.30-29  
46 CFR 98.30-31
  - Verify secured in accordance with vessel's cargo securing manual 46 CFR 97.12-10
  - Verify warning signals and sign 46 CFR 98.30-33  
46 CFR 98.30-35
  - Verify material condition 46 CFR 98.30-3 & .30-4  
49 CFR 173.32 & .241(c)  
49 CFR 176.340

### **Hull Inspection**

- 173. Inspect hull appendages
  - Examine condition and structural integrity of bilge keel 46 CFR 32.35-1  
46 CFR 58.01-5, ABS 7-4-1/1
  - Examine condition of coolers (keel or grid) 46 CFR 58.05-1  
ABS 4-6 5/7.9
  - Examine condition of transducers and other similar appendages ABS 7-4-1/1

174. Inspect anchor chain(s) and chain locker
- Examine condition of anchor 46 CFR 32.15-15  
ABS 3-5-1
  - Examine condition of anchor chain 46 CFR 31.10-1  
ABS 7-3-2/1.1.7
  - Examine connection points of anchor handling equipment (base of windless, capstan, cats paw, etc.) 46 CFR 31.10-1  
ABS 7-3-2/1.1.7
  - Examine condition of ground tackle connection points 46 CFR 31.10-1  
ABS 7-3-2/1.1.7
  - Verify chain is marked 46 CFR 31.10-1  
ABS 2-2-2/21
  - Examine condition of chain locker 46 CFR 31.10-1  
ABS 7-A-4/27  
NVIC 07-68 III(c)
  - Examine condition of chain's pad eye (holdfast) 46 CFR 31.10-1  
ABS 7-3-2/5.1.4
  - Examine condition of hawse pipe 46 CFR 31.10-1  
ABS 7-3-2/5.1.4
175. Inspect sea valve(s)
- Determine which are due for examination 46 CFR 32.35-1  
46 CFR 61.20-5(b)
  - Verify quantity and type 46 CFR 32.35-1  
46 CFR 42.15–60(e)  
46 CFR 56.50–95(f)
  - Verify that all sea valves are identified and are opened for examination 46 CFR 42.15–60(c)  
46 CFR 56.50–95
  - Examine external/internal components 46 CFR 61.20-5(b)  
46 CFR 42.09-25(b)(4)  
46 CFR 42.09-25(b)(5)

- 176. Inspect bilge and ballast components in voids and ballast tanks
  - Verify structural integrity of piping 46 CFR 31.10-20  
46 CFR 56.50-50(h)-(k)
  - Verify valve operation and labeling 46 CFR 56.50-1(g)  
46 CFR 61.20-5(b)
  - Verify bilge suction pipe(s) are fitted with strainers 46 CFR 56.50-50(g)
  - Verify compliance for Ballast Water Management 33 CFR 151.2000 -.2075

**Recommended U.S. Vessel Deficiency Procedures:**

| Step   | Action  |                |                     |   |   |  |  |  |   |
|--|---|----------------|---------------------|---|---|--|--|--|---|
| 1  | Identify deficiency   |                |                     |   |   |  |  |  |   |
| 2  | Inform vessel representative  |                |                     |   |   |  |  |  |   |
| 3  | Record on the Deficiency Summary Worksheet (next page)  |                |                     |   |   |  |  |  |   |
| 4  | If deficiency is corrected prior to end of inspection, go to step 6   |                |                     |   |   |  |  |  |   |
| 5  | <p>If deficiency is unable to be corrected prior to end of inspection, issue CG-835V in accordance with the table below:</p> <table border="1" data-bbox="187 475 950 1341"> <thead> <tr> <th data-bbox="187 475 578 524">IF deficiency:</th> <th data-bbox="578 475 950 524">THEN issue CG-835V:</th> </tr> </thead> <tbody> <tr> <td data-bbox="187 524 578 760"> <p>Does NOT immediately impact crew/offshore worker safety, hull seaworthiness or the environment, e.g.,</p> <ul style="list-style-type: none"> <li>• Missing placards</li> <li>• Non-metallic expansion joints if more than 10 years in service</li> </ul> </td> <td data-bbox="578 524 950 760"> <p>That provides a specific time for correcting deficiency, e.g.,</p> <ul style="list-style-type: none"> <li>• "X" number of days</li> <li>• At next drydock</li> </ul> </td> </tr> <tr> <td data-bbox="187 760 578 1019"> <p>Allows Vessel operations to be MODIFIED to meet less stringent requirements, e.g.,</p> <ul style="list-style-type: none"> <li>• Expired international certificates</li> <li>• Automation defect</li> <li>• Insufficient lifesaving equipment</li> </ul> </td> <td data-bbox="578 760 950 1019"> <p>That restricts operation of vessel to meet current vessel conditions, e.g.,</p> <ul style="list-style-type: none"> <li>• Reduced route</li> <li>• Increased crew</li> <li>• Fewer offshore workers</li> </ul> </td> </tr> <tr> <td data-bbox="187 1019 578 1341"> <p>DOES immediately impact crew/offshore worker safety, hull seaworthiness, or the environment and <u>cannot</u> be modified to meet less stringent requirements, e.g.,</p> <ul style="list-style-type: none"> <li>• Missing or defective firefighting equipment</li> <li>• Structural defect or damage</li> </ul> </td> <td data-bbox="578 1019 950 1341"> <p>That requires the deficiency to be corrected prior to operating vessel ("NO SAIL" item), e.g.,</p> <ul style="list-style-type: none"> <li>• Prior to carrying offshore workers</li> <li>• Prior to carrying cargo</li> </ul> </td> </tr> </tbody> </table> | IF deficiency: | THEN issue CG-835V: | <p>Does NOT immediately impact crew/offshore worker safety, hull seaworthiness or the environment, e.g.,</p> <ul style="list-style-type: none"> <li>• Missing placards</li> <li>• Non-metallic expansion joints if more than 10 years in service</li> </ul> | <p>That provides a specific time for correcting deficiency, e.g.,</p> <ul style="list-style-type: none"> <li>• "X" number of days</li> <li>• At next drydock</li> </ul> | <p>Allows Vessel operations to be MODIFIED to meet less stringent requirements, e.g.,</p> <ul style="list-style-type: none"> <li>• Expired international certificates</li> <li>• Automation defect</li> <li>• Insufficient lifesaving equipment</li> </ul> | <p>That restricts operation of vessel to meet current vessel conditions, e.g.,</p> <ul style="list-style-type: none"> <li>• Reduced route</li> <li>• Increased crew</li> <li>• Fewer offshore workers</li> </ul> | <p>DOES immediately impact crew/offshore worker safety, hull seaworthiness, or the environment and <u>cannot</u> be modified to meet less stringent requirements, e.g.,</p> <ul style="list-style-type: none"> <li>• Missing or defective firefighting equipment</li> <li>• Structural defect or damage</li> </ul> | <p>That requires the deficiency to be corrected prior to operating vessel ("NO SAIL" item), e.g.,</p> <ul style="list-style-type: none"> <li>• Prior to carrying offshore workers</li> <li>• Prior to carrying cargo</li> </ul> |
| IF deficiency:   | THEN issue CG-835V:   |                |                     |   |   |  |  |  |   |
| <p>Does NOT immediately impact crew/offshore worker safety, hull seaworthiness or the environment, e.g.,</p> <ul style="list-style-type: none"> <li>• Missing placards</li> <li>• Non-metallic expansion joints if more than 10 years in service</li> </ul>  | <p>That provides a specific time for correcting deficiency, e.g.,</p> <ul style="list-style-type: none"> <li>• "X" number of days</li> <li>• At next drydock</li> </ul>   |                |                     |   |   |  |  |  |   |
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| 6  | Enter CG-835V data in MISLE   |                |                     |   |   |  |  |  |   |









## Conversions:

| <b>Distance and Energy</b>  |         |   |                     |                                      |         |   |           |
|---|---------|---|---------------------|--------------------------------------|---------|---|-----------|
| Kilowatts (kW)  | X       | 1.341                                     | =                   | Horsepower (hp)                      |         |   |           |
| Feet (ft)   | X       | 3.281                                     | =                   | Meters (m)                           |         |   |           |
| Long Ton (LT)   | X       | .98421                                    | =                   | Metric Ton (t)                       |         |   |           |
| <b>Liquid</b> ( <i>NOTE: Values are approximate</i> )   |         |   |                     |                                      |         |   |           |
| Liquid  | bbbl/LT | m <sup>3</sup> /t                         | bbbl/m <sup>3</sup> | bbbl/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                                 |         |   |           |
| <b>Weight</b>   |         |   |                     |                                      |         |   |           |
| 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 =<br>6.29 m <sup>3</sup> | 1 psi               | = .06895 Bar = 2.3106 ft<br>of water |         |   |           |
| <b>Temperature: Fahrenheit = Celsius</b> ( $^{\circ}\text{F} = 9/5\ ^{\circ}\text{C} + 32$ 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     |
| <b>Pressure: Bars = Pounds per square inch</b>  |         |   |                     |                                      |         |   |           |
| 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                          |         |   |           |