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| Departemen_Perhubungan.wmf | FORM SKENARIO LABORATORIUM/SIMULATOR/ WORKSHOP | Nomor Dokumen : FM.USW.01.02a |
| Tgl. Ditetapkan : 02 November 2015 |
| Revisi No : 02 |
| Tgl. Diberlakukan : 09 Januari 2017 |
| Made By : | Reviewer : |
| PIP SEMARANG | SUMARNO PS, MM | KRIS WANTO, A.Md | SUWONDO, M.Mar.E |
|  | Mengetahui |
|  | Kepala Unit Laboratorium, Simulator dan Workshop | Kepala Bagian Adminitrasi Akademik dan Ketarunaan |
|  |  |  |
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| Type Facilities :* Laboratorium
* Simulator
* Other
 | Name Laboratorium/ Simulator/ Other :**METI** |

|  |  |
| --- | --- |
| **Criteria on STCW Code** | Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations and avoid pollution of the marine environment  |
| **Function & Level** | Marine Engineering at The Operational Level (ATT : III)\* |
| **Program** | **Preparation, operation Aux Boiler, fault detection and necessary measures to prevent damage for the following machinery items and control systems** |
| **Referensi STCW** |  STCW code table AIII/1 page 89 |
| **aim of Exercise** | To provide adequate steam supply to FO tanks operation upon request of Chief Engineer |
| **Objective** | Upon completion of this training the student should be able to:1. Respond to answer a call from Chief Engineer
2. Open the guidance book “instruction manual book”
3. Identify appropriate list
4. Prepare Auxiliary Boiler prior to starting
5. Start Auxiliary Boiler properly
6. Provide supply steam for heating FO Purifier.
 |
| **Initial Condition** | 1. Ship is in port before boiler run
2. DG no 1 is running
3. Steam pressure low alarm
4. Water level drum low-low level
5. Steam line to cargo oil tanks shut-off position
 |

|  |  |
| --- | --- |
| **Briefing** | 5 minutes |
| **Exercise Duration** | 30 minutes |
| **Debriefing** | 5 minutes |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Measurable Criteria (Student action to be measured | : |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **Time frame (minutes)** | **Student action** | **Check** | **Remark** | **Actual time** | **Mark** | **No** |
| Y | N |
| 1 | 1 | Respond to answer a call from Chief Engineer |  |  |  |  |  |  |
| 2 | 1 | Open the operating manuals |  |  |  |  |  |  |
| 3 | 1 | Identify appropriate list |  |  |  |  |  |  |
| 4 | 12 | * 1. Go to Auxiliary Boiler
 |  |  |  |  |  |  |
|  |  | * 1. Check tank& opened valve Atmos drain tank from distillated tank
 |  |  |  |  |  |  |
|  |  | * 1. Check & Boiler Control Source electric power “On”
 |  |  |  |  |  |  |
|  |  | * 1. Steam Drum Low Pressure “Alarm” push bottom to ECC alarm
 |  |  |  |  |  |  |
|  |  | * 1. Steam Drum Low Level “Alarm” push bottom to ECC alarm
 |  |  |  |  |  |  |
|  |  | * 1. Boiler mode selector on ECC to Harbor.
 |  |  |  |  |  |  |
|  |  | * 1. Boiler Control Mode Selector “Manual” (Manual or Auto)
 |  |  |  |  |  |  |
|  |  | * 1. FO Flow Control “Manual” (Manual or Auto)
 |  |  |  |  |  |  |
|  |  | * 1. F.O Flow Control Manual  “DEC” (DEC or INC)
 |  |  |  |  |  |  |
|  |  | * 1. Air ventilation valve “open”
 |  |  |  |  |  |  |
|  |  | * 1. Check, & open valve fresh water system feed water and pump “on”
 |  |  |  |  |  |  |
|  |  | * 1. Check condition drum water level (- 50 mm)
 |  |  |  |  |  |  |
|  |  | * 1. Boiler trip reset bottom: press;
 |  |  |  |  |  |  |
|  |  | * 1. Check & opened valve DO supply system to Aux boiler from DO service tank;
 |  |  |  |  |  |  |
| 5 | 5 | Starting of auxiliary boiler |  |  |  |  |  |  |
|  |  | 1. Push button Forced Draft Fan Source ON and start fan
 |  |  |  |  |  |  |
|  |  | 1. Push button Primary Air Fan Source ON, and start fan
 |  |  |  |  |  |  |
|  |  | 1. Push button F.O Burning Pump Source (no: 1 & no 2)”
 |  |  |  |  |  |  |
|  |  | 1. Push bottom F.O Burning Pump no: 1) start; (no: 2 st – by)
 |  |  |  |  |  |  |
|  |  | 1. Pilot Burner Pump Source ON or “start “
 |  |  |  |  |  |  |
|  |  | 1. After 20 second from pilot burner pump start, Manual Burner Control “ON” ( OFF or ON)
 |  |  |  |  |  |  |
|  |  | 1. Pilot burner pump “Stop” after confirming burner firing
 |  |  |  |  |  |  |
|  |  | 1. Air vent valve “Close”
 |  |  |  |  |  |  |
|  |  | 1. Stop fresh water Feed water pump
 |  |  |  |  |  |  |
|  |  | 1. Change F.O Flow Control Manual  “DEC” to INC
 |  |  |  |  |  |  |
| 6 | 9 | Operation Manual switch to Auto:\* |  |  |  |  |  |  |
|  |  | 1. Check pressure steam drum of Auxiliary Boiler
 |  |  |  |  |  |  |
|  |  | 1. Auxiliary boiler drum pressure increase, and more than 0,5 MPa
 |  |  |  |  |  |  |
|  |  | 1. F.O flow control “Auto”
 |  |  |  |  |  |  |
|  |  | 1. Boiler Control Mode Selection to “ Auto”
 |  |  |  |  |  |  |
|  |  | 1. Auxiliary Boiler outlet valve (main steam valve) “Opened”
 |  |  |  |  |  |  |
|  |  | 1. Open steam valve to FO tanks, Heater etc
 |  |  |  |  |  |  |
|  |  | 1. Check pressure and open steam valve system, and ready supply to FO tanks;

Note: Auxiliary Boiler auto “on” steam pressure 0,5 MPa (5 bar) and “off” steam pressure 0,9 MPa (9 bar); |  |  |  |  |  |  |
| 7 | 1 | Report to Chief Engineer that the steam ready used for heating FO tanks |  |  |  |  |  |  |
|  | **30** | **Total** |  |  |  |  |  |  |

\*Critical performance below must get record **“Yes”** mark will lead the final result to mark **FAIL**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Critical Performance** | **Y** | **N** |
| 1 | Check condition drum water level (- 50 mm) \* |  |  |
| 2 | Check water level indicator, water leakage or steam pressure leakage |  |  |
| 3 | Prepare filling water boiler manual used feed water pump no: 1 and no: 2 “On” |  |  |
| 4 | Taking a care at times schedule operation manual because auxiliary boiler could explode |  |  |
| 5 | Successfully running of auxiliary boiler  \* |  |  |
| 6 | Total actual time duration to complete mission is **30** minutes or below |  |  |

**NB: colling condition**

**Time factor**

|  |  |  |  |
| --- | --- | --- | --- |
| <30 minutes = 1 | 31 – 40 minutes = 0.9 | 41 – 50 minutes = 0.8 | >50 minutes = 0.5 |

**Total Time : ………………minutes Time Factor : …………….**

**Total Score : Total Mark X Total Factor = …………… x ……………. = …………….**

**Final Result : PASS / FAIL ( Passing Grade = 70 )**