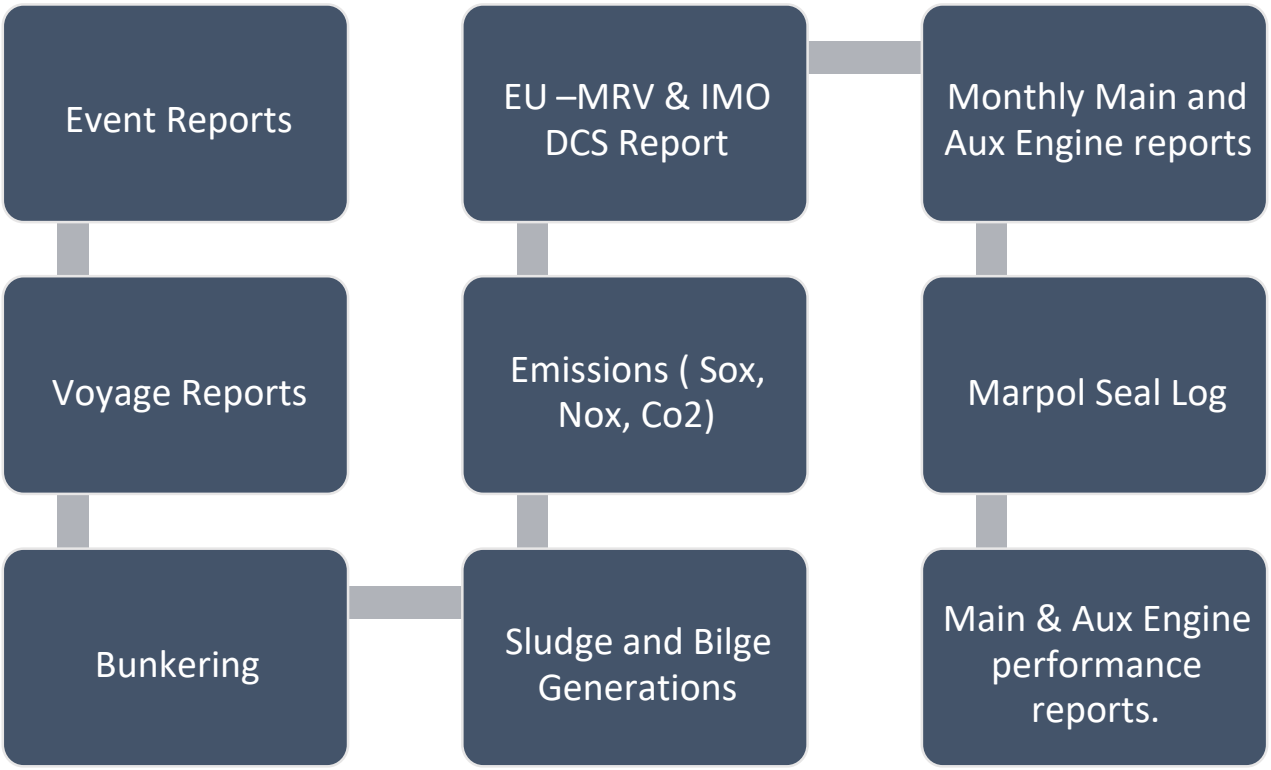
NAU LITE VER 2.1
VESSEL PERFORMANCE SYSTEM USER MANUAL

Contents

1. System Ideology & Reports

Optimum Balance between Fuel consumption, Power output and speed lead to attaining favourable results of the Propulsion Economy.

Operational efficiency and reliability which are the key factors to Commercials of the shipping trade, SEEMP and other compliance, are covered through the "*NAU Fleet performance monitoring system"* by gathering the ship reported data for commercial, operational, and technical analysis.

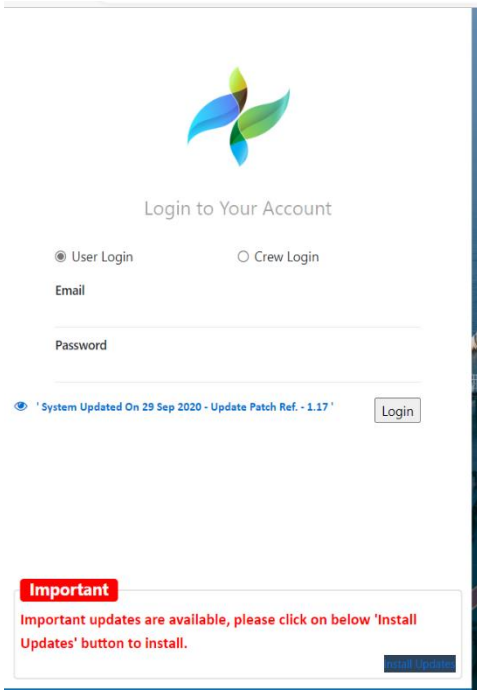


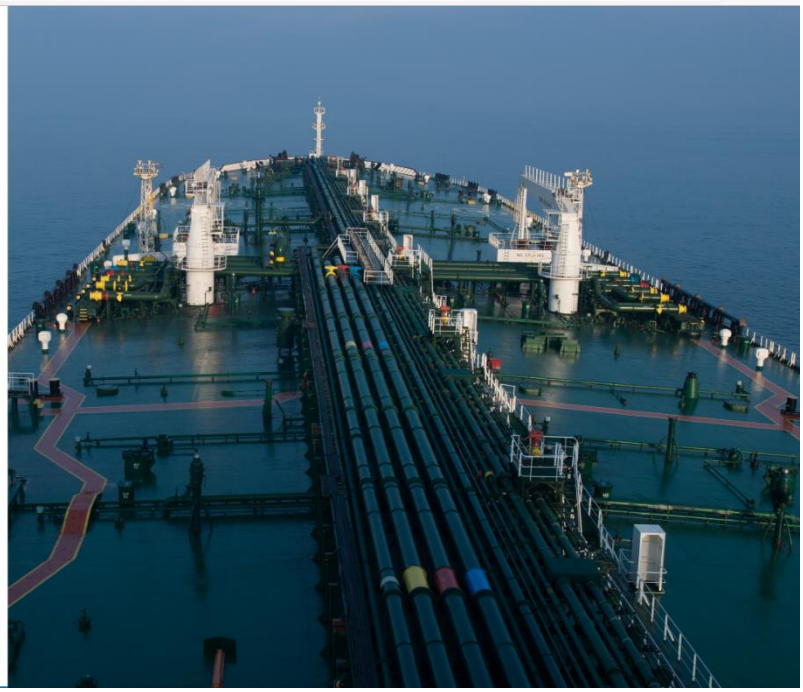
2. Logging Into the system

Please find below link and access details for NAU LITE (Vessel Performance Reporting System), available by clicking the shortcut on the desktop.

(This maybe different as is customized.)

1. Input username and password; master/master **OR** admin1/admin1
   For accessing from the Network Computers- ***please copy & paste the above shortcut icon on other Client Pc's to access NAU System.***





3. Report, Frequency & Exporting Reports

S. No.	Module Name	Reporting Frequency
1	Sea and Port Reports	Minimum every noon + each event
2	Waste Management – Oil, Bilge	Once a day
3	Garbage records	As and when Garbage is treated
4	Main and Auxiliary Engine reports	Minimum one every month
5	MARPOL Seal Log	Anytime MARPOL Related equipment is used, and company seals are broken and re-sealed.
6	Annex IV Log	Every time an effluent is discharged
7	Annex VI Log	Every time there's a gas leak or recharge for any equipment onboard

4. NAU (Vessel Performance Reporting & Monitoring System)

4.1 OPS. & TECH REPORTS

Briefly for your ref.

All the sections/reports work on either EDIT / Update / SAVE (like the vessel Particulars form & CP Norms) OR simply fill up the data and SUBMIT. All submits show message of RECORD SUBMITTED/UPDATED SUCCESSFULLY" on top, in case the message is not seen, it indicates, that some mandatory field is missed out; Mandatory fields are marked with; (*****) or (**Remarks in RED**)

- **Step 1: Vessel Particulars** – Please update the Vessel particulars section,
- **Step 2: Charter Party Norms** – Under Events & Other reporting -> Charter Party -> Please edit / save the CP norms (these do not need to be updated for each commencement of Sea Passage unless there is a change next time)
- **Step 3: Bunker information** – Under Events & Other reporting click on **Bunker Intake Reporting**; Complete and Submit the Bunker Information Report of every type of bunker for which ROB is available, once submitted proceed to the Full Away/ COSP Report under the Sea Reports Section.
- **Step 4: ME and AE Static Data-** Particulars and Static Data Tab -> Both M/E Static Data and A/E Static Data need to be filled. Detailed description for the same is give below under Engine Performance Reporting Guidance.
- **Step 5: Dry Docking, Hull & Propeller Cleaning, Crew On/Off Signers & Inspection/Surveys -** Fill in the details of last Hull cleaning, Propeller polishing, Drydocking, underwater inspection. Further activities can be recorded after filling departure reports as per the activity done at the last port call.
- **Step 6: COSP/ Noon/ EOSP/ Port report** – Please proceed to fill Sea and Port Reports, as per the frequency mentioned on the previous page.
- **Step 7: Exporting the reports** – Please proceed to ADMIN-> SEND AND RECEIVE and Click the Button SEND And RECEIVE button, ***(you may send one or many records simultaneously).***

5. Sea/ Port Reporting Guidance

5.1 Explaining the reporting cycle

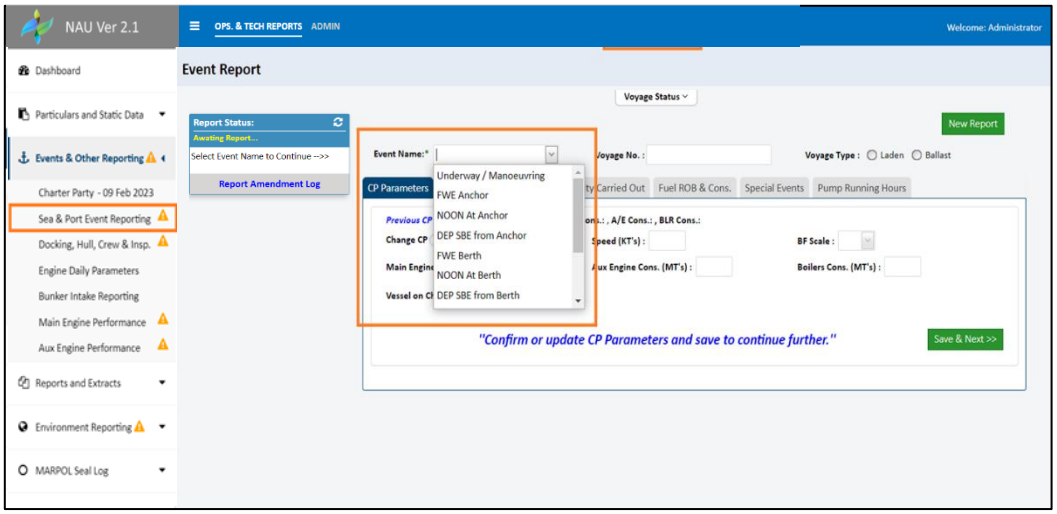
- The Sea and Port reports are meant to be from Port to Port.

5.2 Features

- For Filling Sea and Port Report: Under OPS. & TECH REPORTS -> Click on Events and Other Reporting. Under this one form by selecting the Event Name (COSP/ Noon/ EOSP/ Port), you can proceed to fill the required details for that report.
- Report that is being filled can be saved as a draft if needed and you may resume filling it when logging in again.
- Please know that while reporting all the tabs cannot be accessed in one go, all the details for one tab should be submitted to access next page.

CP Parameter -> Event Details -> Timesheet/ Activities carried out -> Fuel ROB and Cons. -> Special Events -> Pump Running Hrs.

- There is a report amendment log provided that shows the status of report that is being filled. In case after finalizing a report there are any changes made and updated in Fuel ROB and cons. tab, Pump Running Hours & Special Events also need to be reviewed & updated.



6. Engine Performance Reporting Guidance

6.1 Purpose

The purpose of the Main engine and auxiliary engine performance reports is to achieve an efficient combustion and get the best out of marine engines by constantly monitoring their performances. This is important to control emissions as well as optimize the operating cost of the vessel.

The Vital parameters included in the report that enable the measurement of the performance.

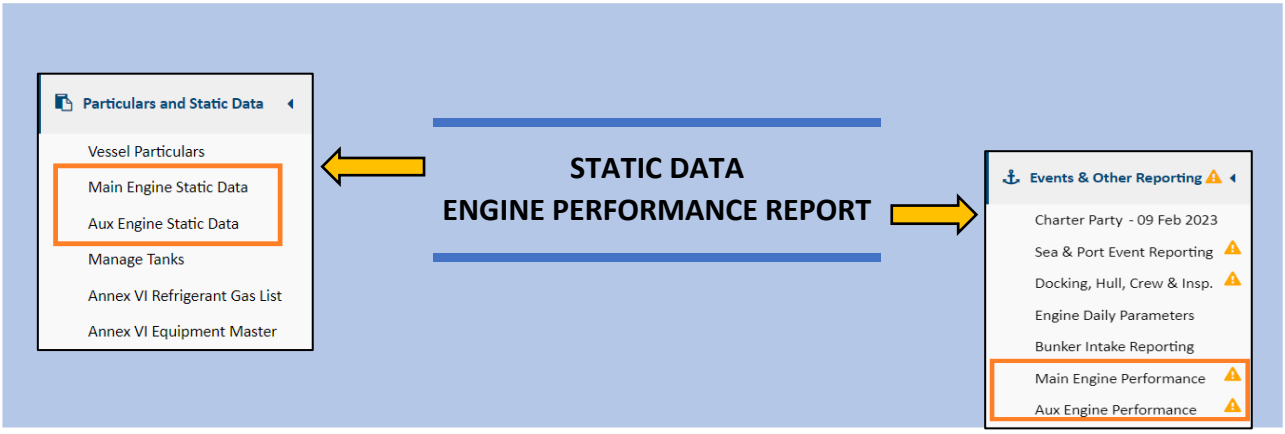
Main Engine performance report

- SFOC Vs Power
- Engine RPM vs. Power
- SCOC Vs Power
- Fuel Pump Index Vs Power
- T/C RPM Vs Power
- P-Max Vs Power

Auxiliary Engine performance report

- Pmax-Pcom Vs Power
- Exhaust Temperature Vs Mean Exhaust Temp
- Fuel Pump Index Vs Power
- Scavenge Air Pressure Vs Power
- T/C Exhaust Temp Vs Power

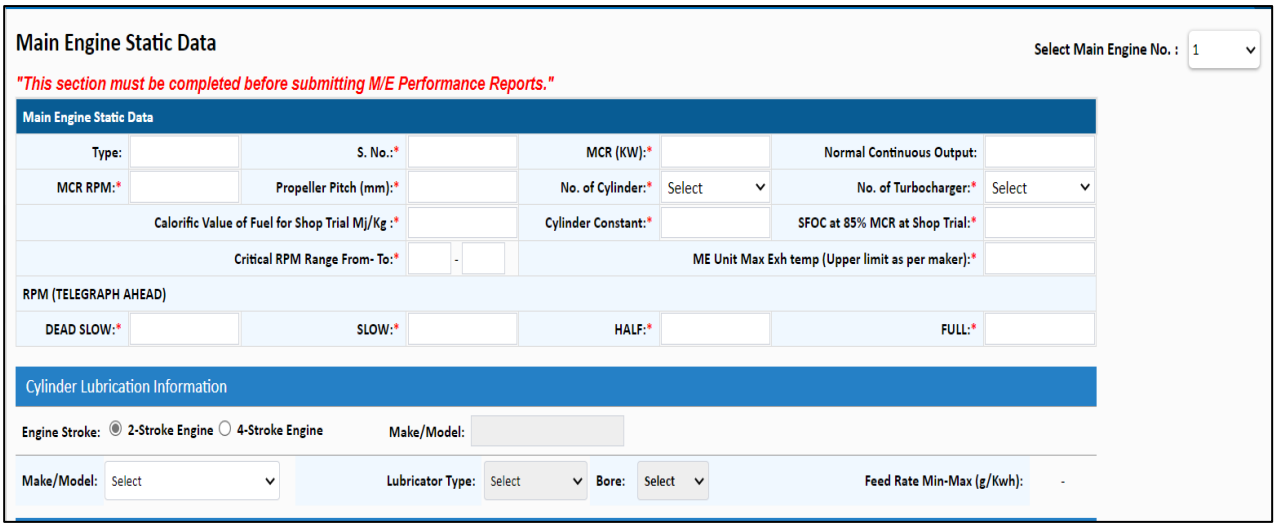
6.2 Accessing & Completing the Main and Auxiliary Engine reports



6.3 The static parameters for the main engine: M/E static data

This section has four parts:

a. Details for the vessel main engine and Cylinder Lubrication information, the number of cylinders selected here govern the Main Engine report template.



b. Shop Trial

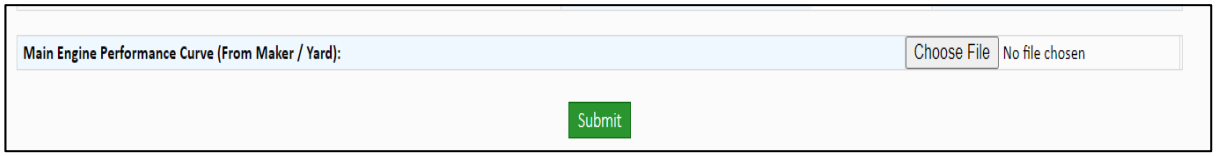
Shop Trial Data				
DATASET	1	2	3	4
KW *				
Load (%)				
Engine RPM *				
T/C RPM *				
T/C inlet Temp (Deg C) *				
T/C outlet Temp (Deg C) *				
Avg Exh Gas Temp (Deg C) *				
Pk Press (Bar) *				
Comp Press (Bar) *				
Scav Press (Bar) *				
Avg Fuel Pump Index *				
VIT Rack Index				
Air temp inlet to TC (E/R Temp) *				
CW inlet to air cooler Temp *				
Air Clr Press Drop (mm) *				
F.O. Cons MT/Day *				
Thermal Load (%)				
Propeller Margin (%)				
SFOC (g/Kwh) *				
MCR Power *				
MCR RPM *				

Note: At least four set of data must be entered at different engine loads; 100%, 85%, 75% & 50%, if values are unavailable at these loads the data must be input as available or interpolated from the engine performance reports (Sea Trial/ Shop Trial).

c. Sea Trial

Sea Trial Data *(Common for Main Engine-1 & Main Engine-2)*				
DATASET	1	2	3	4
M/E (kW) *				
Load (%)				
F.O. Cons MT/Day *				
GPS SPEED (KTS) *				
LOG SPEED (KTS) *				
M/E R.P.M *				
MID Ship Draft (MTR) If unavailable please Tick: N/A ☐				
Displacement (MT) If unavailable please Tick: N/A ☐				

Upload for the Performance curve; Upload the sea trial performance curve (in pdf format, max size – 400 KB).

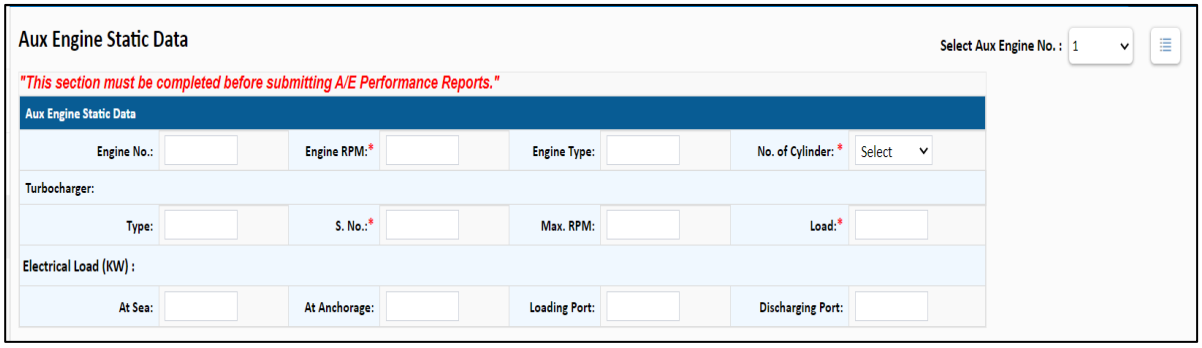


d. Once this section is completed, please press submit. Any changes thereafter will be recorded in the activity log at the bottom of the page.

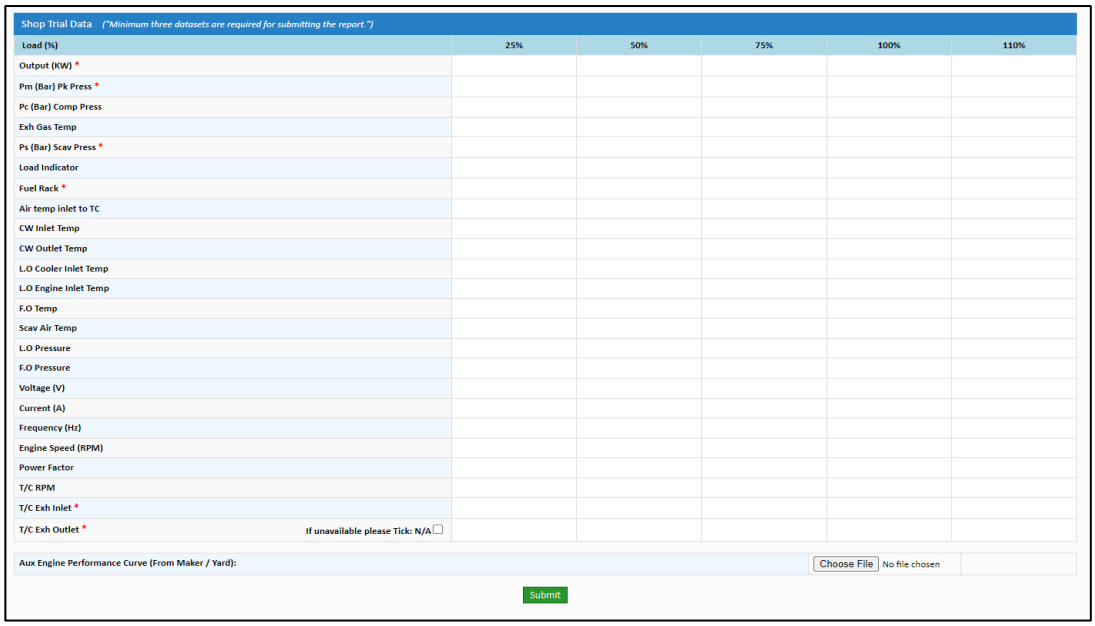
6.4 The static parameters for the Auxiliary engine: A/E Static Data

This section has two parts:

a. This report is to be completed for each Auxiliary engine onboard the vessel by selecting from the dropdown and the number of cylinders must be carefully entered for each auxiliary engine.



b. Shop Trial Data and maker's auxiliary engine performance report upload; Upload the shop trial performance curve (in pdf format, max size – 400 KB).



Shop Trial Data *("Minimum three datasets are required for submitting the report.")*

Load (%)	25%	50%	75%	100%	110%
Output (KW) *					
Pm (Bar) Pk Press *					
Pc (Bar) Comp Press					
Exh Gas Temp					
Ps (Bar) Scav Press *					
Load Indicator					
Fuel Rack *					
Air temp inlet to TC					
CW Inlet Temp					
CW Outlet Temp					
L.O Cooler Inlet Temp					
L.O Engine Inlet Temp					
F.O Temp					
Scav Air Temp					
L.O Pressure					
F.O Pressure					
Voltage (V)					
Current (A)					
Frequency (Hz)					
Engine Speed (RPM)					
Power Factor					
T/C RPM					
T/C Exh Inlet *					
T/C Exh Outlet * If unavailable please Tick: N/A ☐					

Aux Engine Performance Curve (From Maker / Yard): Choose File No file chosen

Submit

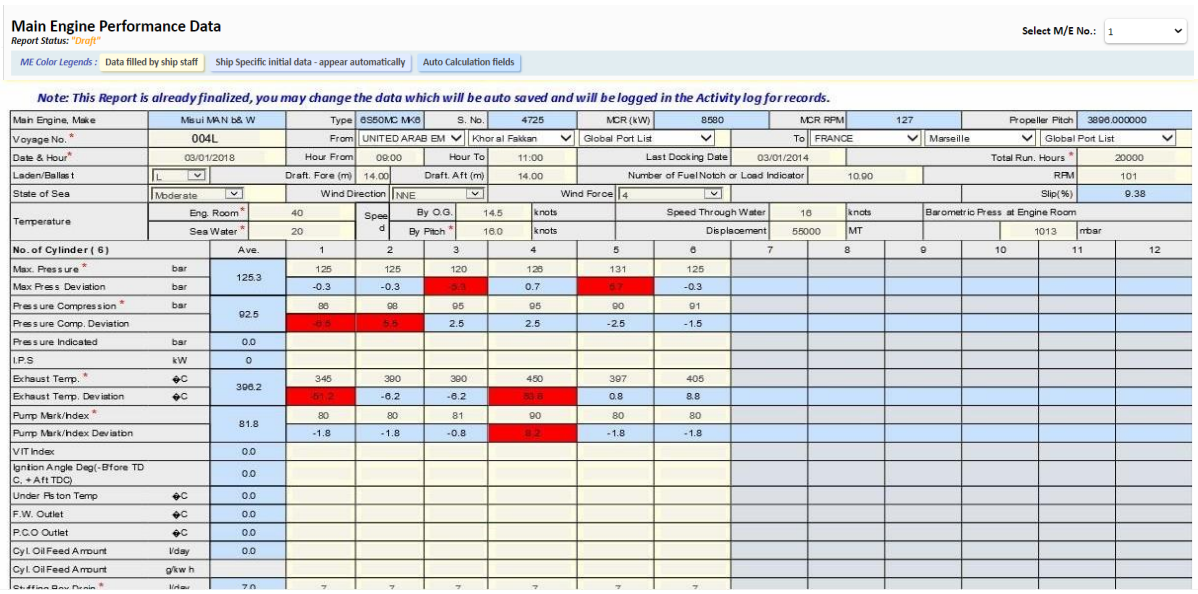
Note: At least four set of data must be entered at different engine loads; 100%, 85%, 75% & 50%, if values are unavailable at these loads the data must be input as available or interpolated from the engine performance reports (Shop Trial)

Once the section is completed, please press submit. Any changes thereafter will be recorded in the activity log at the bottom of the page.

6.5 The main engine performance reports

Clicking on "+" button on Manage ME Performance page, opens a new blank report, the data can be entered, and the report can be saved as draft and finalized once all the data is entered.

Only one report is allowed to be kept as a draft.



The entry area has checks and validations to ensure correct data is being entered with mandatory fields are marked with red Asterix "*".

The report is analysed for any deviations as per the pre-set validations on the reports, for e.g., the cell turns red in colour if the "MAX PRESS DEVIATION" exceeds 5% or less than -5%.

Only finalized reports are transmitted ashore. You may amend an existing report at any time, the record of changes will be maintained in the activity log section.

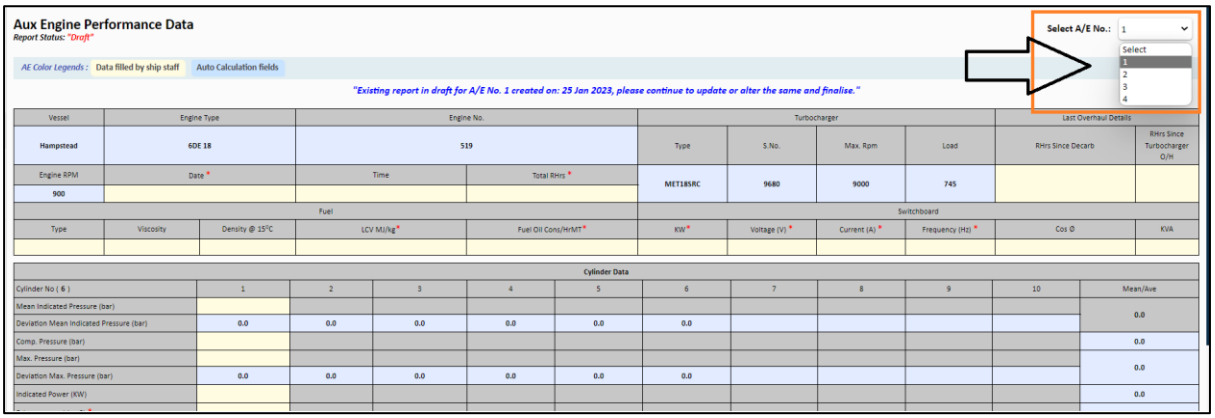
You may include remarks with each report and the shore office can add remarks for shore – ship communication.

6.6 The auxiliary engine performance reports

Clicking on "+" icon on Manage A/E Performance, opens a new blank report, the data can be entered, and the report can be saved as draft and finalized once all the data is entered.

Only one report is allowed in draft state for each auxiliary engine.

Select the auxiliary engine for which the report is being completed and proceed to enter the data.



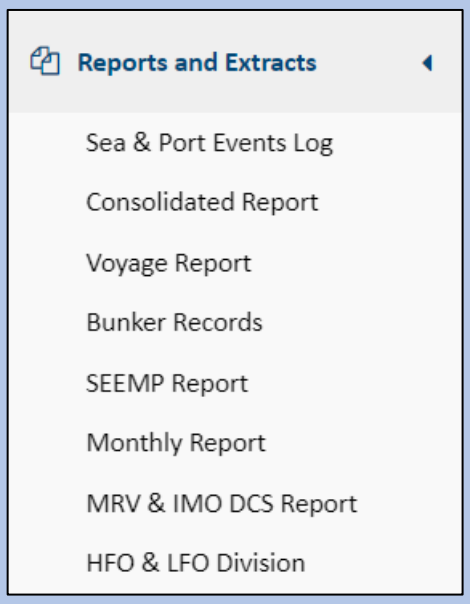
The entry area has checks and validations to ensure correct data being entered with mandatory fields are marked with red Asterisks "*".

The report is analysed for any deviations as per the pre-set validations on the reports.

Only finalized reports are transmitted ashore. You may amend an existing report at any time, the record of changes will be maintained in the activity log section.

You may include remarks with each report and the shore office can add remarks for shore – ship communication.

7. Reports and Extracts



As the name suggests **Reports and Extracts** tab allows to view and extract reports of all kinds as per the date and other required filters that are applied.

In case of Monthly Report section, it allows a consolidated record of ME and AE performance reports on monthly basis.

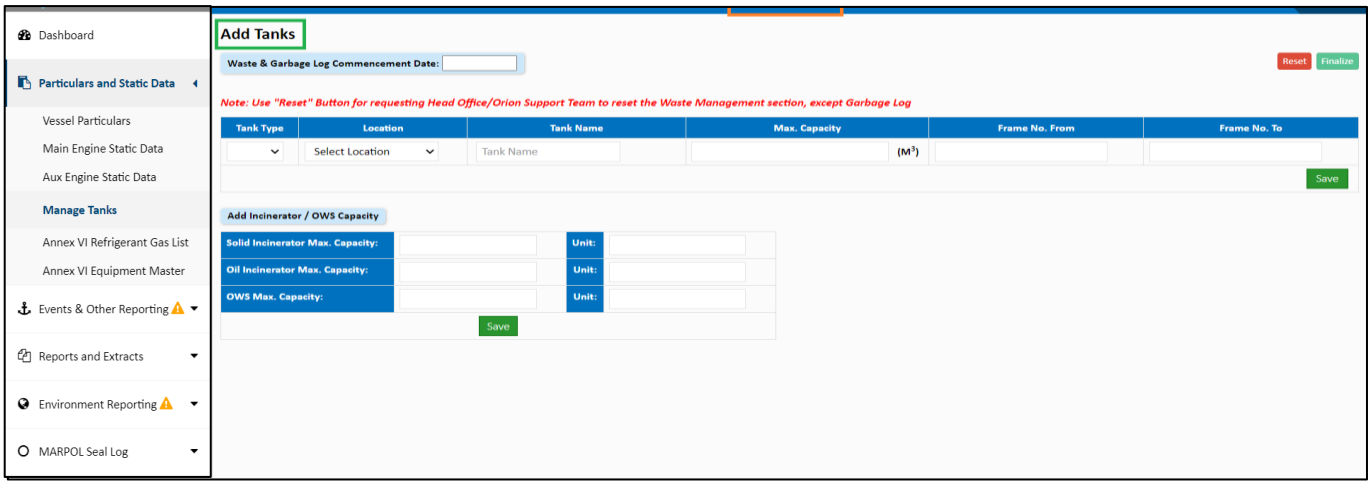
8. Environment

8.1 Waste Management Reporting Guidance

8.1.1 Add Tanks- Proceed to add the Sludge and Bilge tanks as per the IOPP certificate section 3.1 and 3.3

"Very Important while entering the tank details / data, please note this is ONE TIME only.
This must be filled from IOPP 3.1 and 3.3 as it is and finalized."

REITERATING this is "one time only.



8.1.2 Finalize the tanks to start the daily reporting of Sludge & Bilge tank activities.

"Very Important while entering the tank details / data, this is ONE TIME only"

a. These tanks must be entered at one go (not in stages)
(Suggest, first complete all the Sludge tanks and then the Bilge water tanks.)

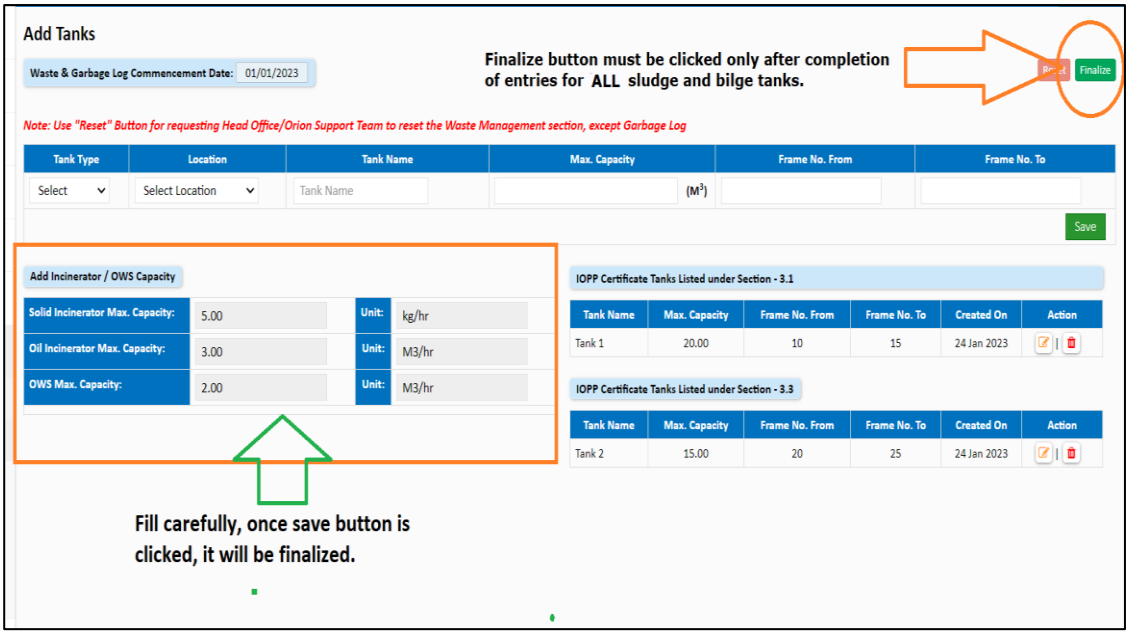
b. All required data including the Initial ROB in MT's and sounding in meters must be entered for the date of entry of the tank.

c. After each tank entry SAVE button must be pressed to collate the lower table.

d. The finalize button must be pressed only upon completion of the both the SLUDGE and BILGE tanks entries, re-iterating the "FINALIZE" Button must only be pressed once after the SLUDGE and BILGE tank entry.

e. The page will be locked once the finalize button is pressed.

Finalize button must be clicked only after completion of entries for both sludge and bilge tanks.



8.1.3 Commence reporting Sludge & Bilge Log

a. Post finalizing the tanks for Sludge and Bilge, proceed to commence reporting on the “Wastage Log” tab.

b. This section will show all the tanks under the Sludge and Bilge by clicking on the names.

c. Both the Sludge and Bilge tank records must be updated **each day**.

d. There is an option to record “NO ACTIVITY”, therefore each tank detail must be filled recording the details in front or else No activity.

e. After each tank entry at the end of the row a SAVE button is provided.

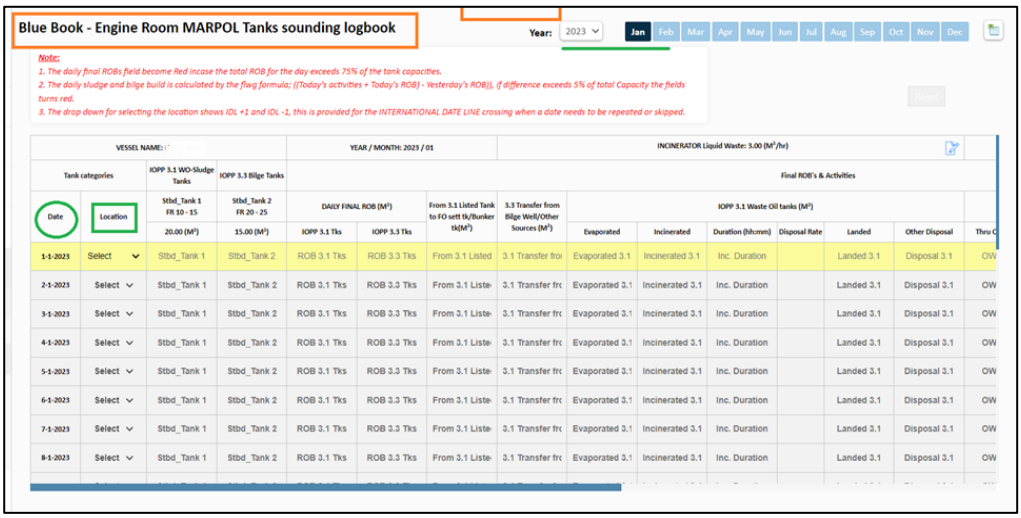
f. Individual sections have the Button called “End of the DAY”, which should be clicked once the entries are completed.

g. This locks and submits the day’s work and provides the next day’s rows for entry.

h. You can record more than once activity on a tank as long as the already entered activity is complete, for instance if you record ongoing transfer, then you can't add more activities till this one activity is completed.

i. An activity for a tank may fall into a second date, in which case, "ONGOING" must be selected on the tank's row.

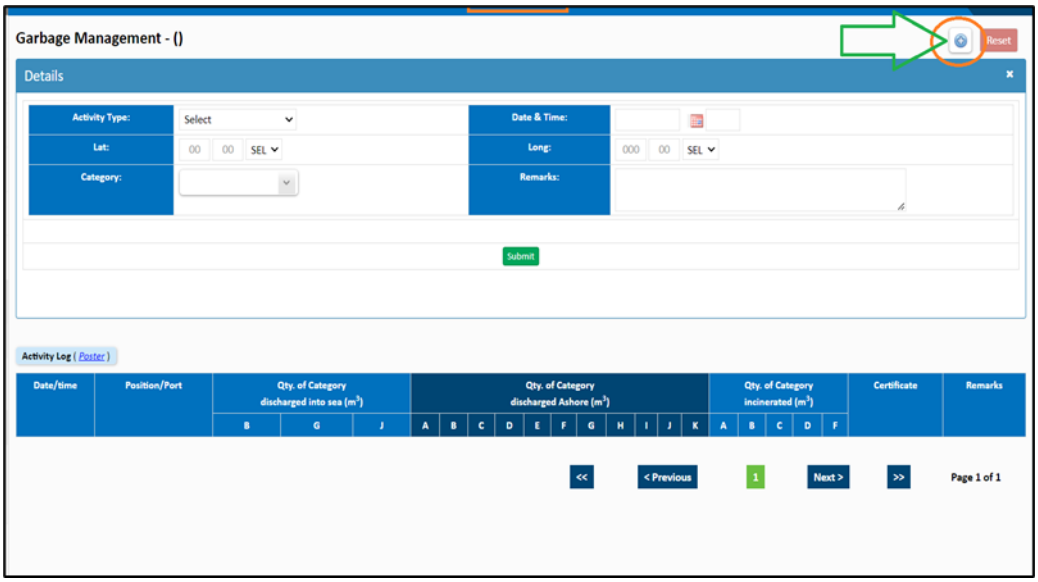
j. In case of shore disposal, the certificate must be uploaded on the row.



8.2 Garbage Management Guidance

The Garbage reporting section has been provided, wherein you can simply select the Activity type, select one or categories (in case multiple effected on the date/time), enter the quantities and the rest of the data as per the row and click SUBMIT.
In case of shore disposals, the certificate must be uploaded.

The data shall keep populating on the below table.



Exporting the data ashore.

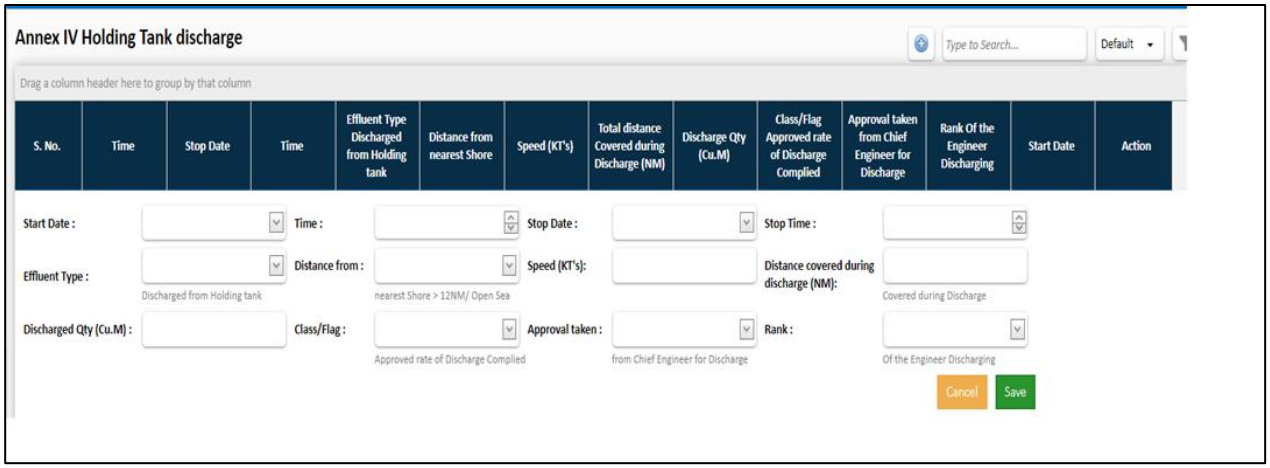
As per usual, click on the Send and Receive button on NAU under ADMIN-> SEND AND RECEIVE section to export the data to the shore server.

8.3 Annex IV Log

This module is designed to keep record of various effluent types (grey water, raw sewage, treated sewage) that are being discharged from the vessels.

The report requires details like start and stop date time, effluent type that was discharged, distance covered during discharge, speed of the vessel, quantity discharged, Class/Flag approved discharge rate (applicable for raw sewage discharges only but certificate to be available onboard), when permitted by Chief Engineer or not.

Note: Permission from CE is Mandatory for this report and Class/Flag discharge rate certificate is needed for relevant data to input when & if discharging raw sewage.



8.4 Annex VI Log

PURPOSE:

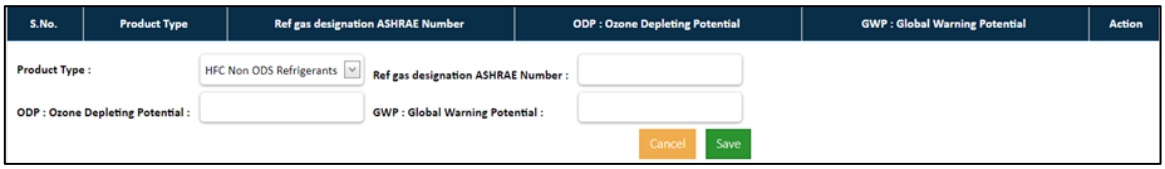
This module is designed to keep record of equipment used for refrigeration and various other portable equipment on the vessel along with the global warming potential of the gas used in them.

Main Functional basis would be monitoring any refrigerant leaks/ discharges/ monthly ROB. Also, if any of vessels have any ODS, then this is to raise alert when data for Ozone-depleting substances (ODS) is entered. This is to also record GWP of gases and to compute final CO2 e-Tonnes as released to atmosphere due to leaks etc of any refrigerant gas.

DIVIDED IN 3 SECTIONS:

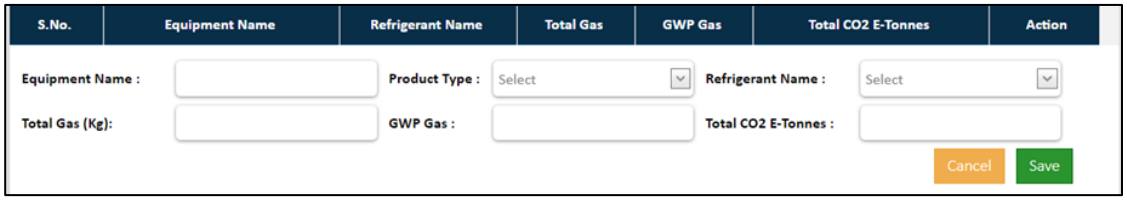
8.4.1 Gases Master *(Under Particulars and Static Data tab)*

- Annex VI Green Book entry point will start with registering the product type as a Parent in Gases Master section.
- Once the product is registered, enter the record for refrigerant by clicking on plus icon on right side of the page under Gases Master.
- Fill in Ref gas designation ASHRAE Number, Ozone Depleting Potential and Global Warning Potential of the product.



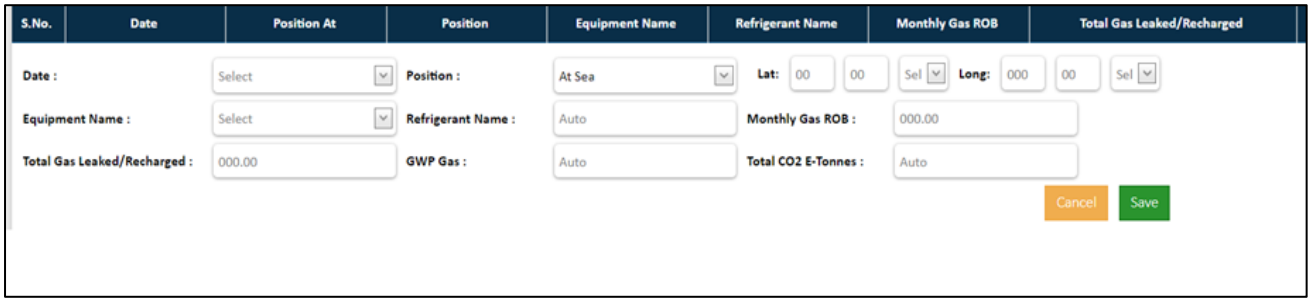
8.4.2 Equipment Master *(Under Particulars and Static Data tab)*

- Post the above is done, go to **Equipment Master** Section and enter the equipment name along with total gas, GWP, total CO2 E Tonnes and select the relevant product type & refrigerant name from the list shown.
- After saving records for the equipment, you can proceed to fill **Annex VI log**.



8.4.3 Annex VI log

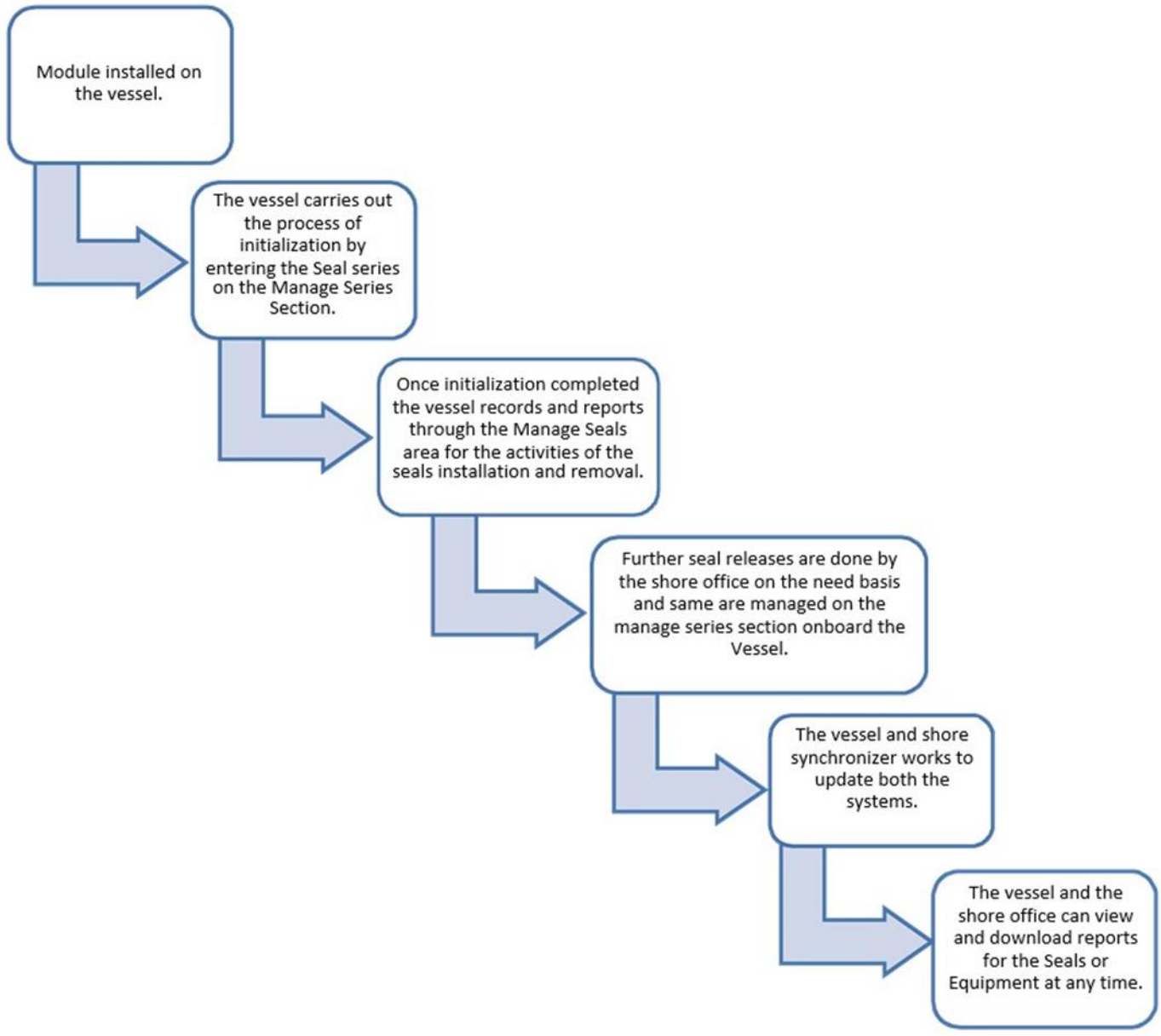
- While entering the log you will have to select the date, position of the vessel, location, enter monthly gas ROB, total gas leaked/ recharged.
- Entering the equipment while filling the log will automatically select the refrigerant name along with GWP linked with that equipment. Total CO2 E-Tonnes will be calculated automatically as per total Gas Leaked/Recharged and GWP filled.



NOTES:

- User can enter multiple records for the same date, but the records cannot be duplicate.
- All required fields must be filled in order to save the record.
- Equipment registered once cannot be registered again.
- In order to fill a log, the concerned equipment must be recorded in the equipment master section first, and before that the concerned product type and refrigerant name for the equipment must be registered in gases master section.
- Records can be edited if required but Log once entered cannot be deleted.
- In case of any mistake user can amend records, but track will be kept for every amendment.

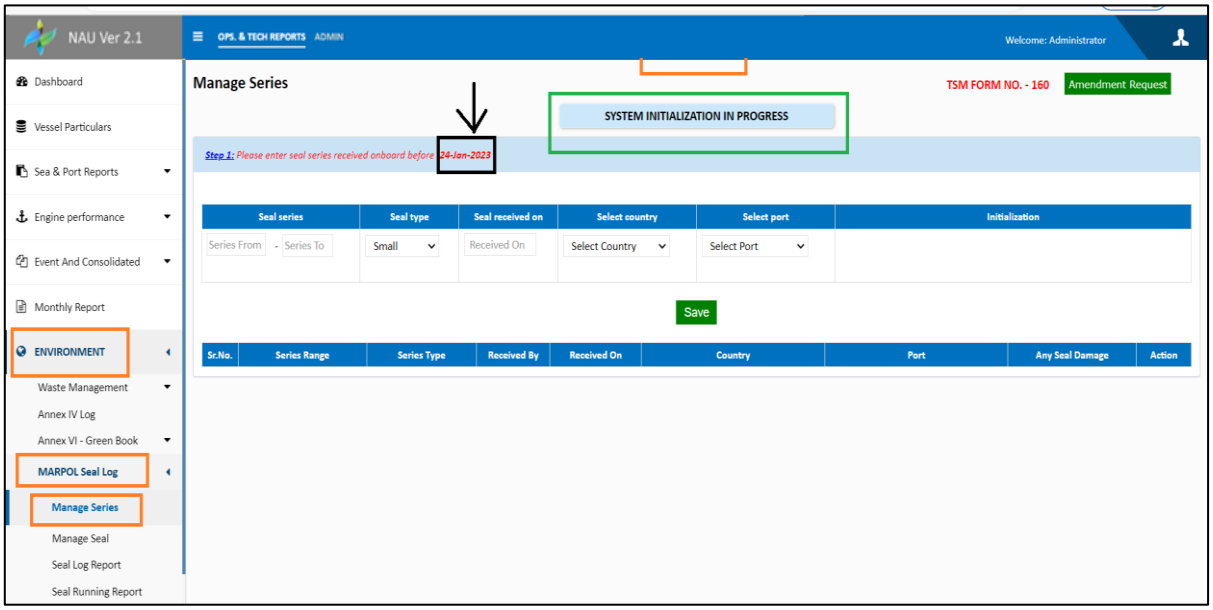
9. MARPOL Seal Log Guidance

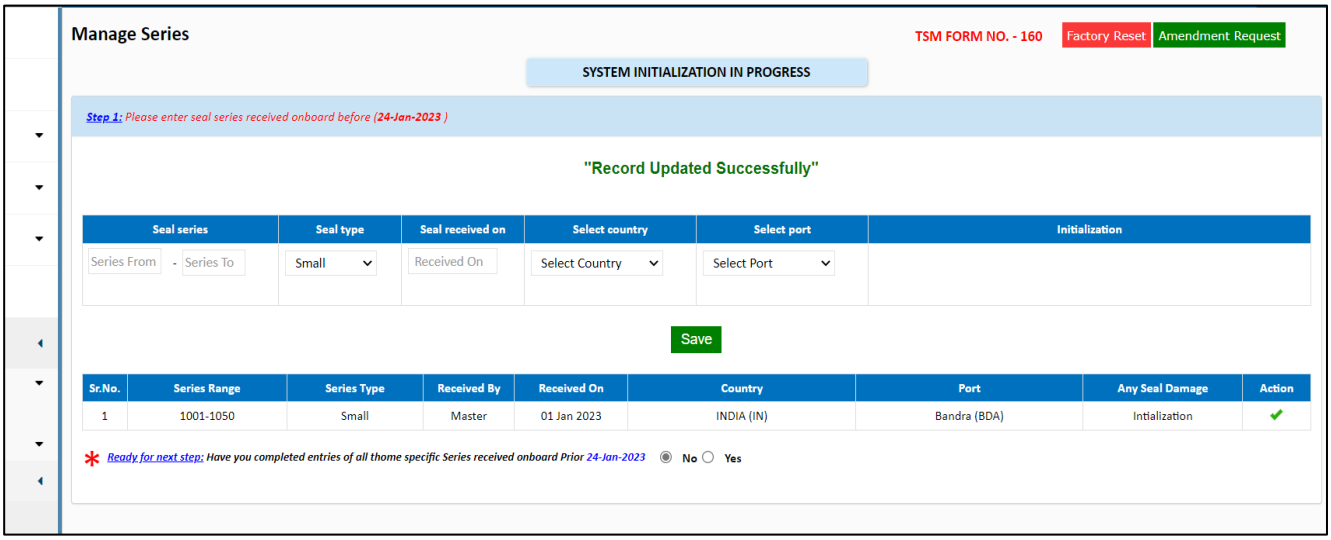


9.1 Start-up / Initialisation

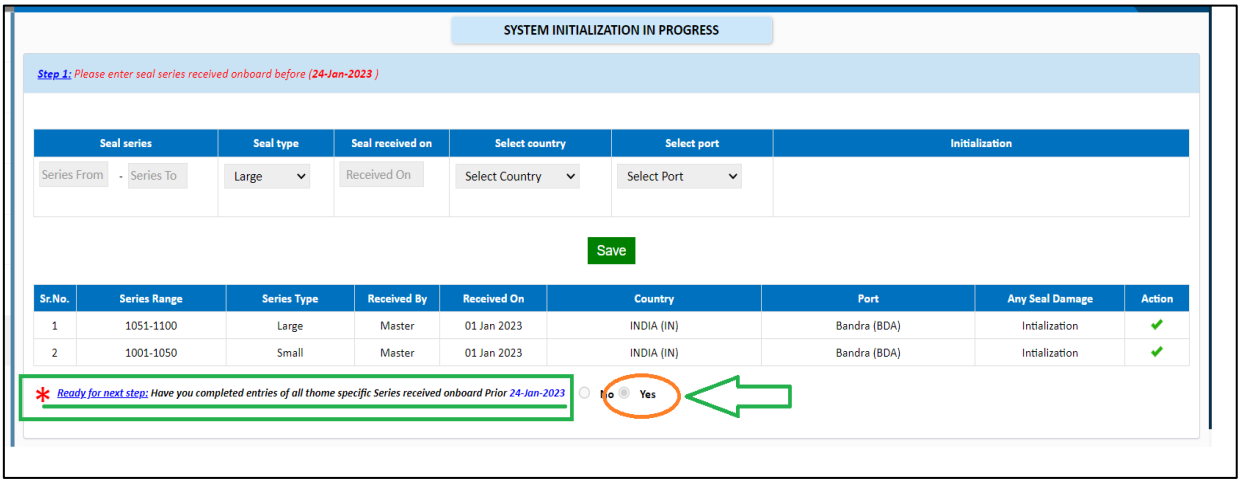
9.1.1 STEP 1; **Entering received seal series details**.

1. Click on the New top menu tab named; “MARPOL SEAL” and click on the “MANAGE SERIES”
2. Enter the seals received on board prior to the date SHOWN as initialization date.

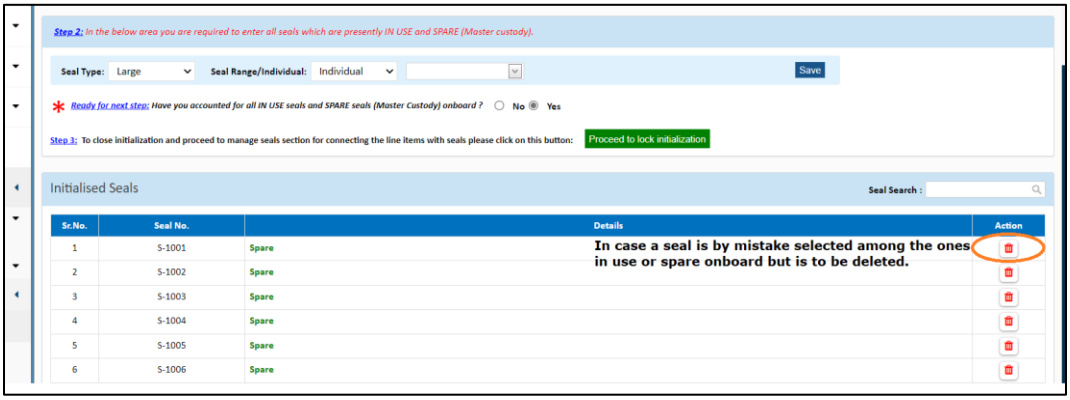




3. Once all the Seal series have been recorded, Click YES on the READY FOR NEXT STEP



NOTE: From the table asking for **seal range/ individual**, please **select all the seal which you want to keep in the NAU system**. The seals among the series that you have recorded and have not selected under this step, will be removed from the record, and cannot be used.



FAQ:

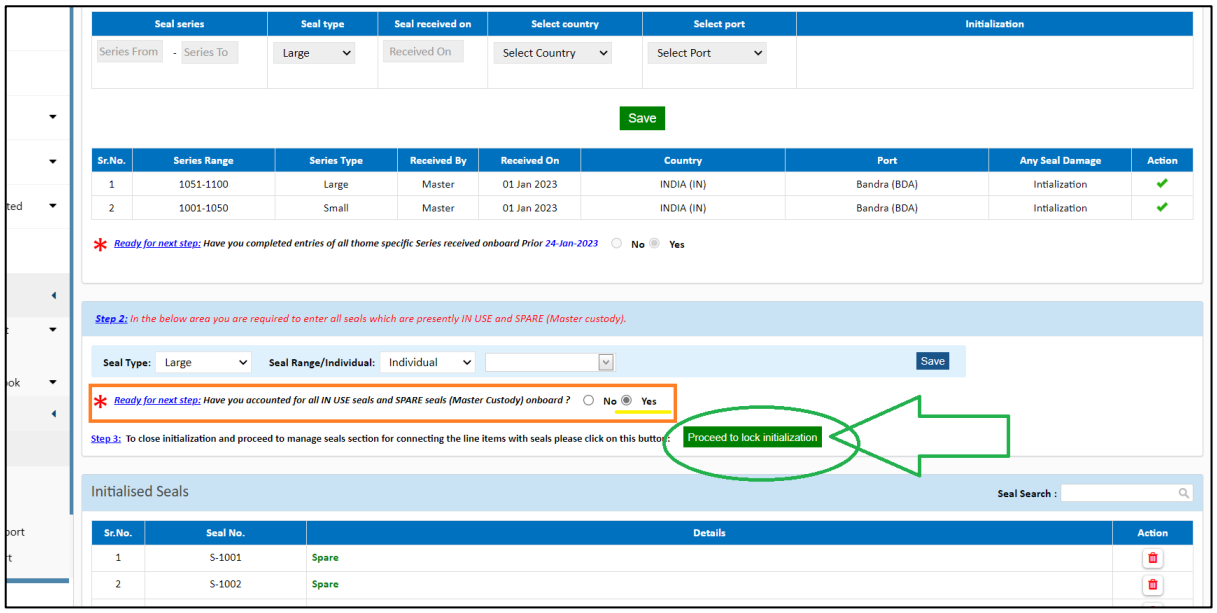
Ques1: What do I do with my old used seals?
Ans: Nothing, you need to only select the IN USE and IN SPARE Seals here, rest old records are not required on the system.

Ques2: I made a mistake in a seal marking as spare it was an old seal not required here.
Ans: Find in the table below and delete the entry.

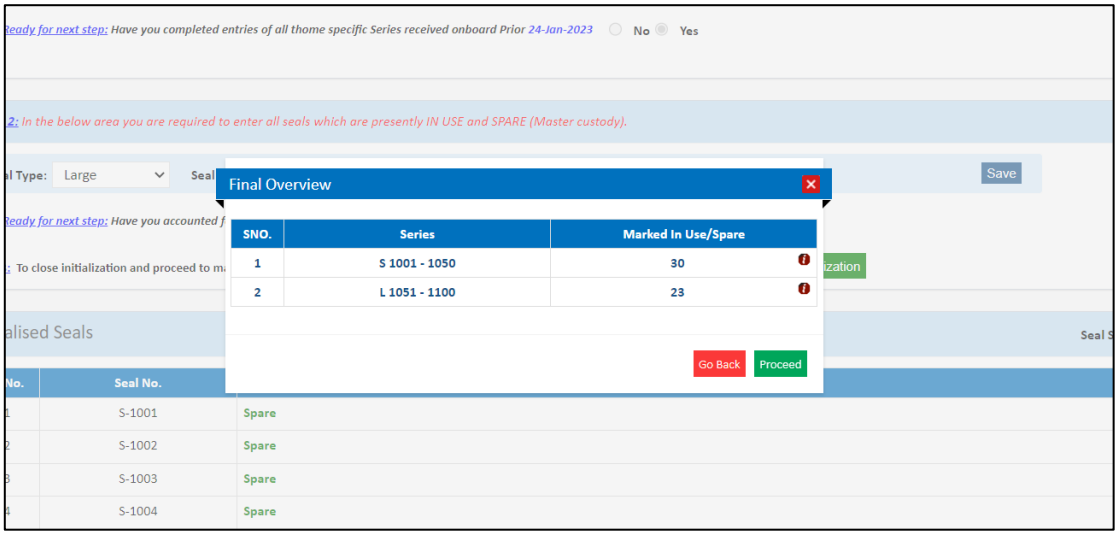
Ques3: I Forgot to enter a Seal Series?
Ans: Re-select “NO” as the answer under step 1, this would open the entry area for forgotten seal series.

9.1.2 STEP 2; **Locking Initialization**

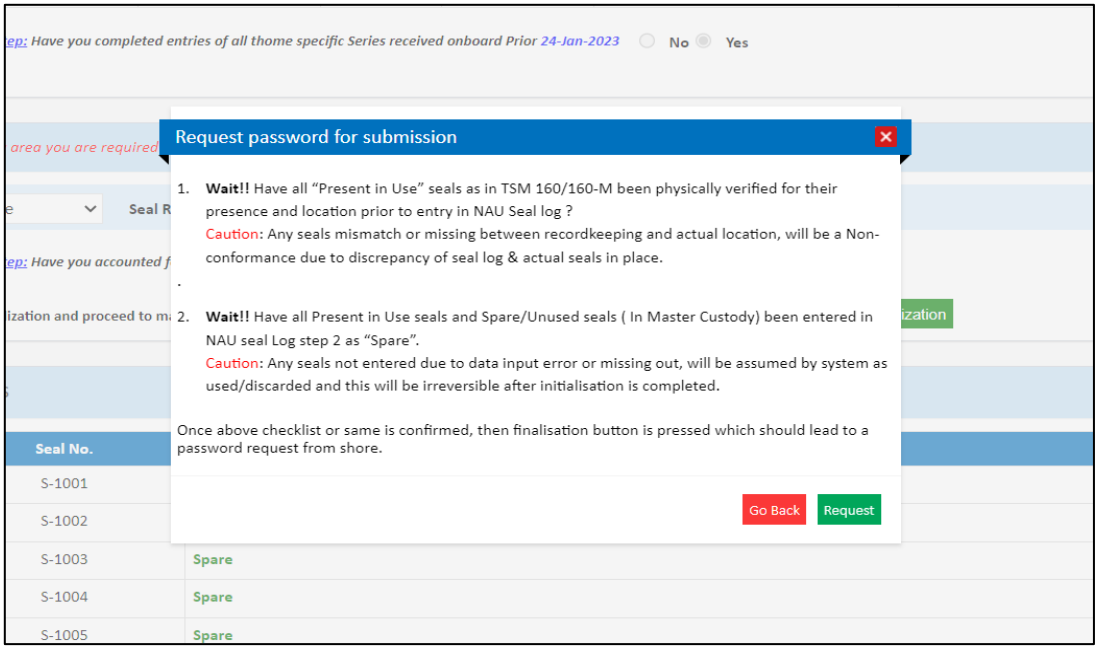
1. Once you have accounted for all the Seals in use and in spare, select YES and click on the green button. **"Proceed to Lock Initialization".**



2. This will open a Pop up for ref and verifying the seals marked as spare.



3. Once confirmed, next will be a box for requesting Password from shore. **Read the Caution carefully!! Once sure, please click on REQUEST.**



FAQ.

Ques: I made a mistake in a seal marking as spare it was an old seal not required here?
Ans: You can mark as discarded / damaged seals on the subsequent section when attaching line items.

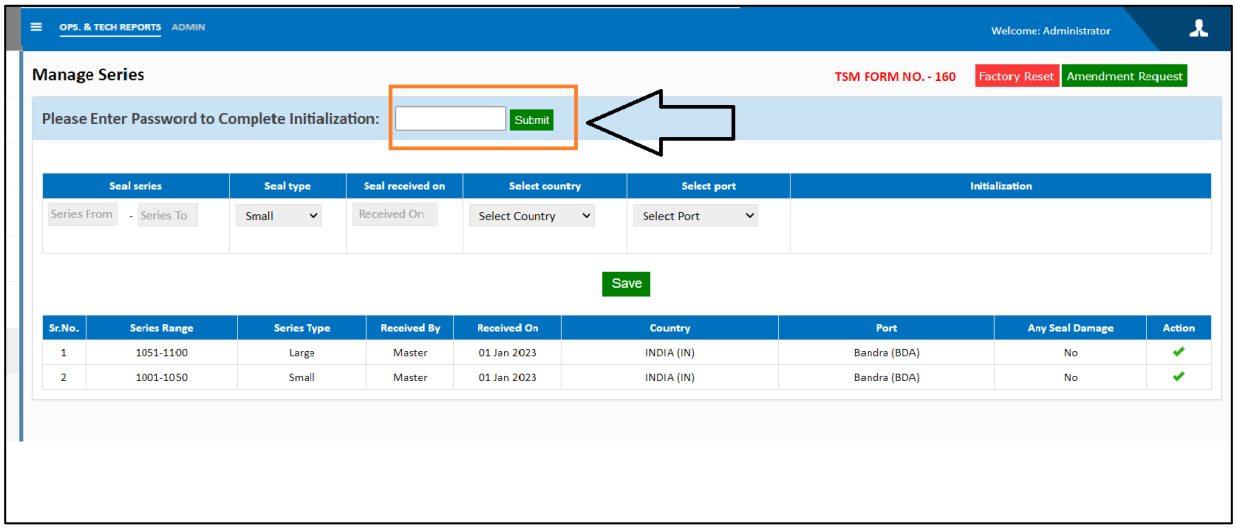
Ques: I Forgot to enter a Seal Series?
Ans: You can enter this after the initialization process is completed.

Ques: In advertently marked a Spare seal as Discarded?
Ans: You can always revert the same when trying to connect the same to a line item.

Ques: In advertently click request for password?
Ans: Ask shore office to share the cancellation password.

9.1.3 STEP 3; **Entering the approval/cancellation password**.

Once you receive the password from shore, please enter in the box and proceed for reporting under the **MANAGE SERIES Section.**



FAQ

Ques: Where do I enter the subsequent seal series received onboard?

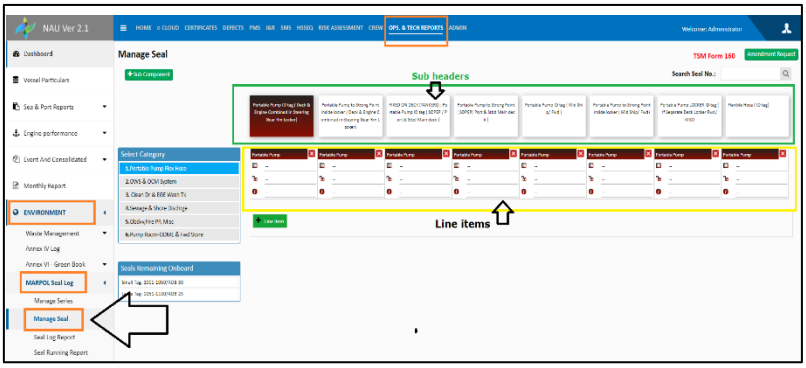
Ans: Once initialization is complete, the entry cells open allowing entering further seals received onboard.

9.2 Reporting on the System from "Manage Seal" section.

Once initialization is done, we can proceed with the regular reporting from the "MANAGE SEALS" Section.

The "MANAGE SEAL" section allows the user to:

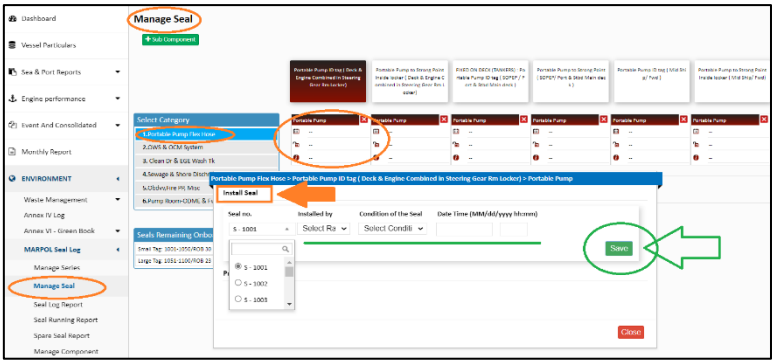
1. Initialize seal on line items,
2. Removing/Replacing the seals from the line items,
3. Add new line items under each of the Sub header,
4. Request for new addition for a relevant and new section for the Left menu,
5. Sub headers (i.e., top headers), a maximum of two can be added.



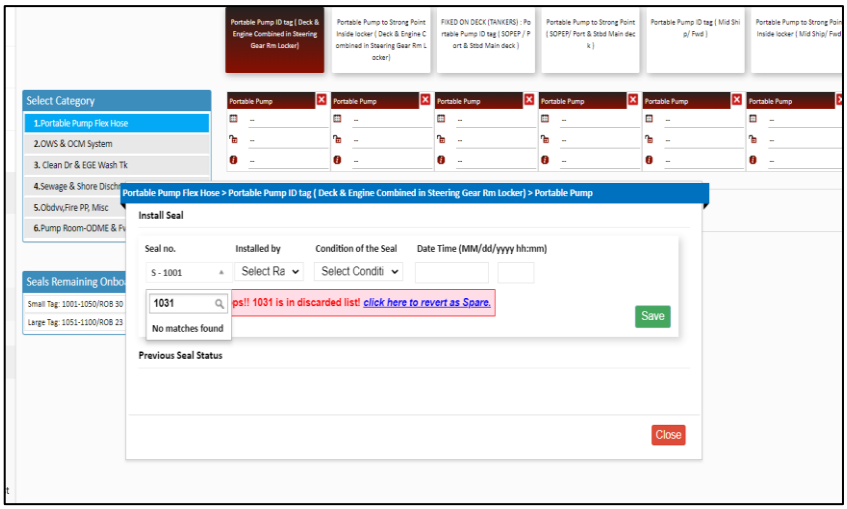
9.2.1 Installing & Removing the Seals for a line item

Step 1. Installing a Seal.

1. Click on the desired Line Item.
2. Select the desired Seal from the drop down.
3. Enter details and click Save,

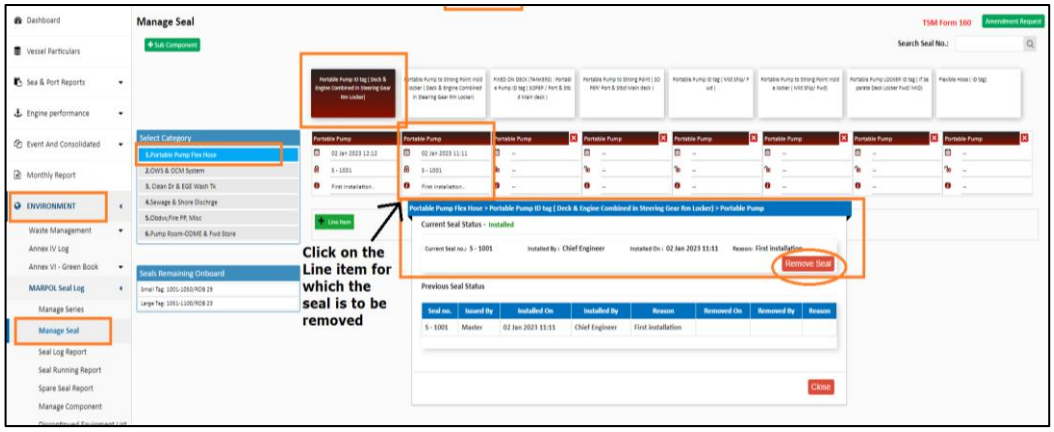


4. In case the Seal number to be attached was by mistake added to the Discarded list, you can change the same as shown. This can only be the case when installing seals for the first time.

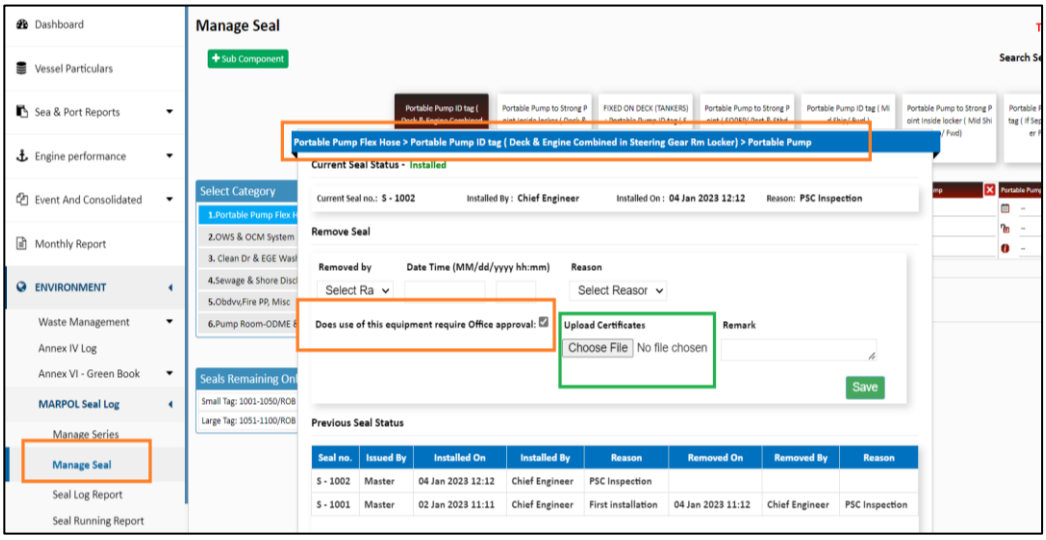


9.2.2 Removing a Seal.

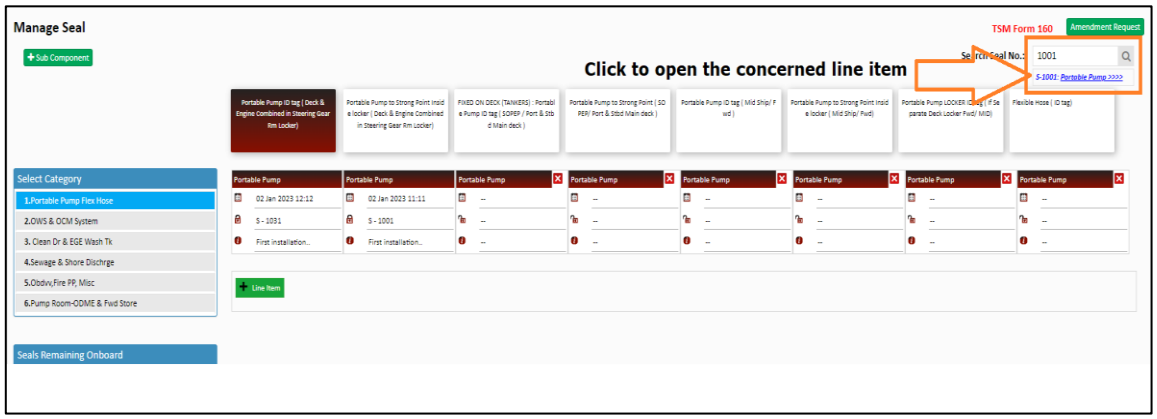
Case 1; I Know the line item where the seal is installed, then Click on the Line Item to view the existing seal in place and click on "Remove Seal" for removing the seal.



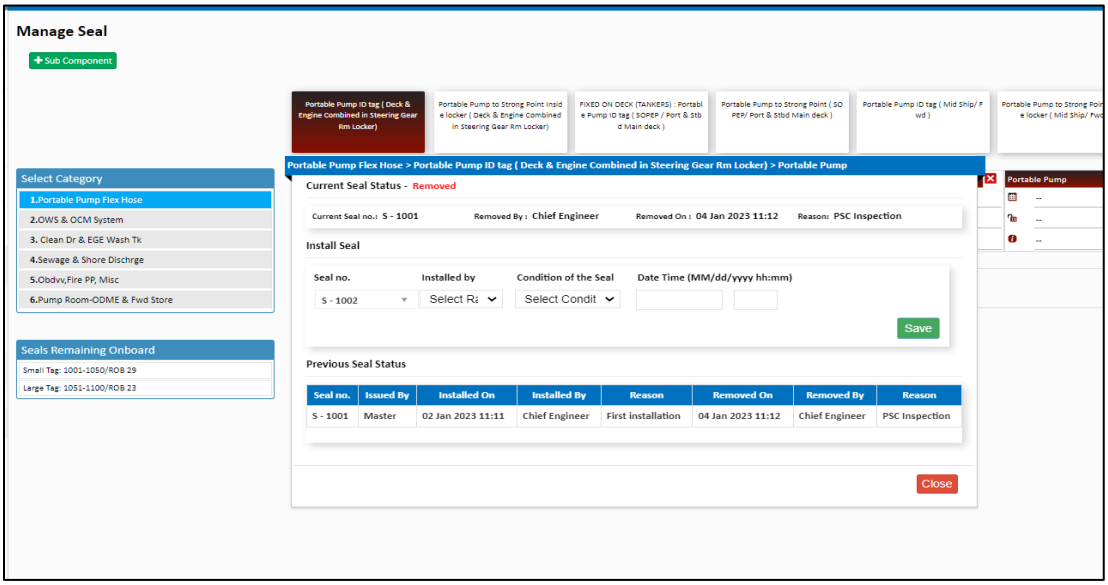
NOTE: In case a seal is being removed from a Portable Pump, there is an additional field that asks if you have permission from shore office, and file confirming the same needs to be uploaded along with appropriate remarks.



Case 2; Not sure of the line item where the seal is installed, Search by the seal number to find the line item it is attached to.

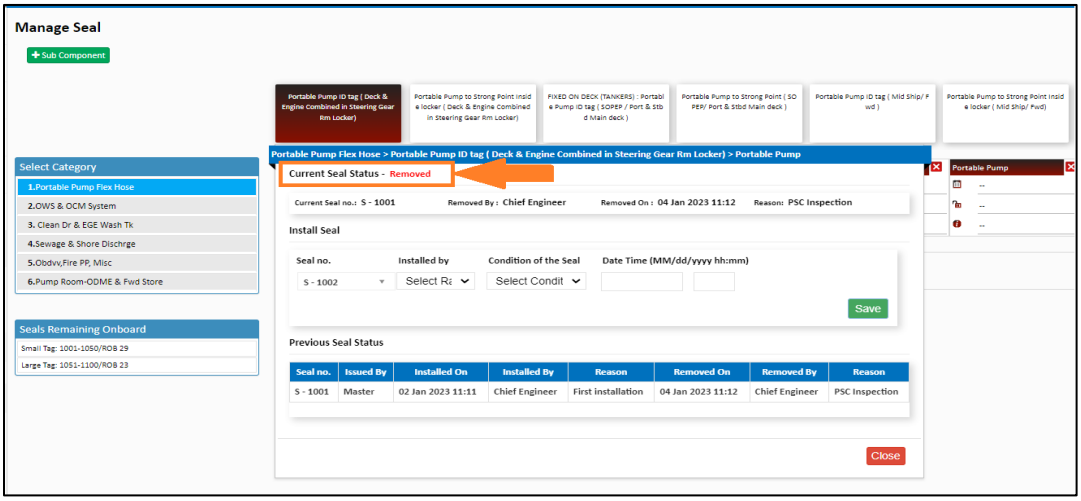


9.2.3 Select / Enter the Required fields and click SAVE.



9.2.4 Seal status changes to Removed.

This changes the Current Seal Status to – "REMOVED", this will remove the seal and the details get updated on the lower table with the complete data. You may simply close the window or install a new seal.



In case no seal attached, can be installed in the same manner.

9.2.5 Adding sub headers (item on the top menu)

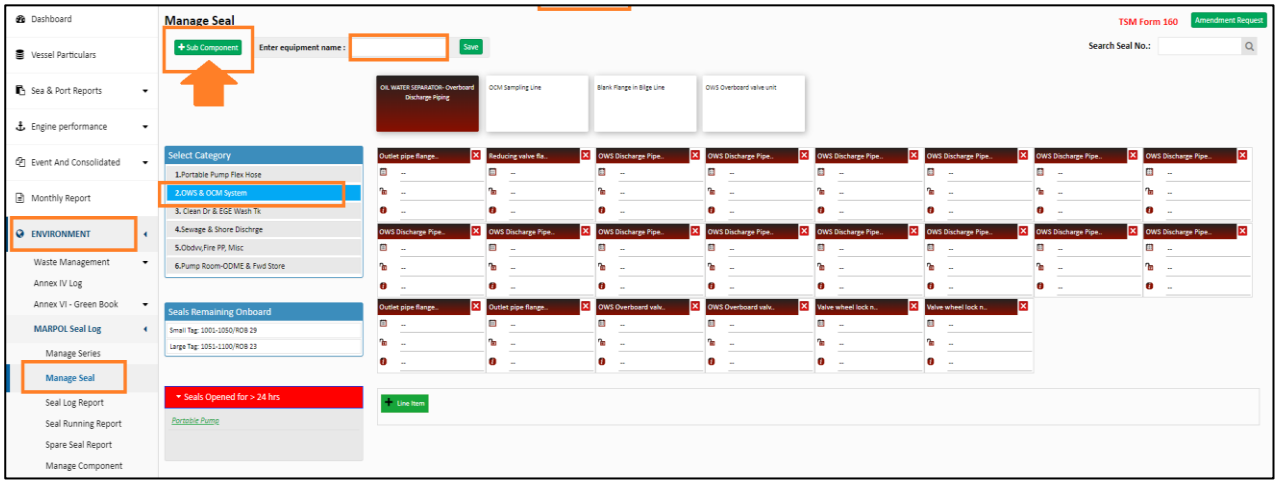
This may be necessary in case the vessel has some items which are not mentioned in the boxes and need to add the line item under a desired header.

It is very important that you are on the location where the Sub Headers must be added.

For the same please:

a. Click on the correct Main Header on the left side,
b. Click + Sub Component, enter the name and press save to add the line item.

c. Once the above steps are followed and request submitted, the shore office shall provide the approval / rejection through email with the relevant password which can be entered at the "COMPONENT REQUEST" section.

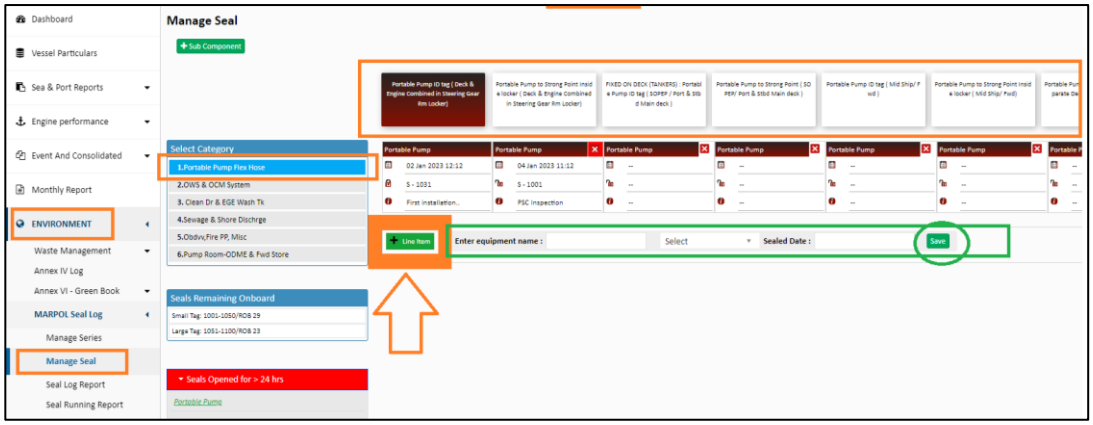


9.2.6 Adding line items:

This may be necessary in case vessel has some items which are not mentioned in the boxes and line item needs to be added under a desired header.

It is very important that you are on the location where the Item has to be added.

a. Click to **select the Main Header** on the left side,
b. then Click to **select the Sub Header** under which you wish to add the line item.
c. Click **+ Line item**, enter the desired name for the line item, select the current seal details (number & date) and click Save icon to submit / add the line item.
d. In case the line item is attached to an incorrect main or sub header, this can be changed only “ONE TIME” from the COMPONENT Request Tab.

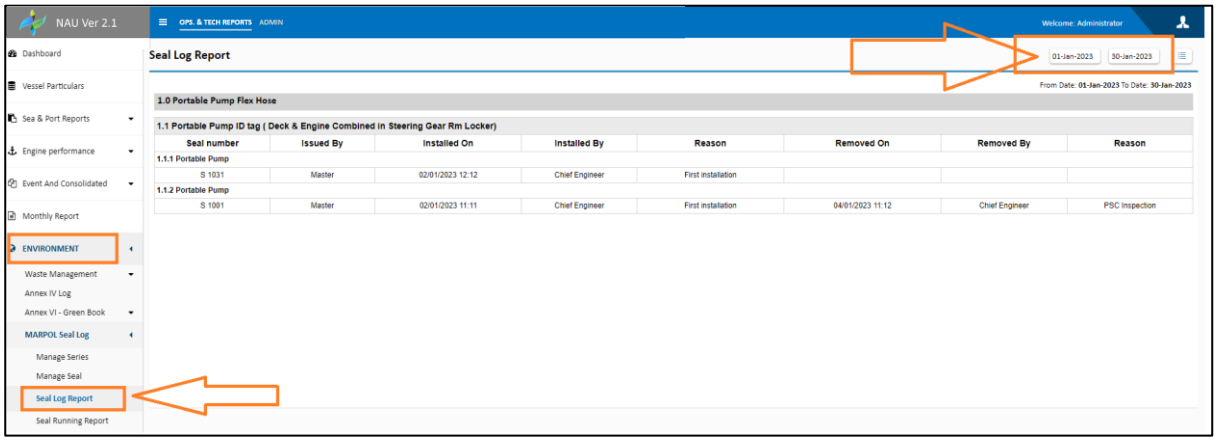


9.2.7 Adding Main headers or item on the left menu:

This is a function reserved with the Head Office, in case of any amendments/additions, please send the same through email to the ECP department for doing the needful if deemed necessary.

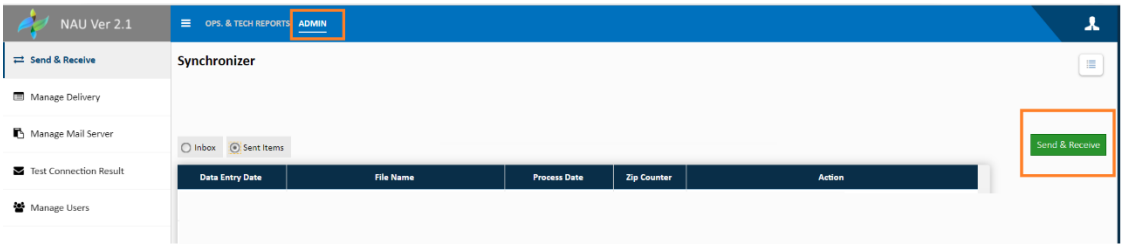
9.2.8 Viewing / extracting reports:

Detailed reports can be extracted by going to the menu named; “SEAL LOG REPORTS”



9.2.9 Exporting the data ashore

As per usual, click on the Send and Receive button on the Send and Receive section to export the data to the shore server.



9.3 Factory Reset

In case for some reason, you wish to delete the entire entries right from the Seal series, logging of the seals and have the system rolled back to start, you can click this button, this will open a Pop which needs your name and reason, etc.

Once entered and submitted, the Shore shall approve the same with a password, until then the system will be on hold.