



PLC Replacement and MGO Modification

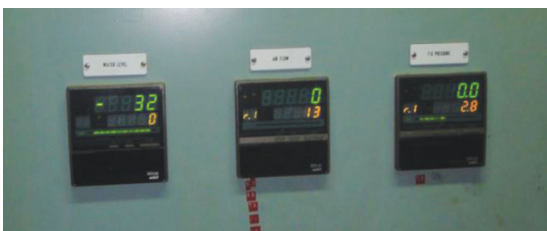
Replacement of PLC Boiler

The Original Maker of PLC Boiler would generally recommend vessel to renew PLC used in vessel for a period between 7 to 10 years, even though PLC Boiler has been appropriately used and maintained by vessel. Due to continuous development and production of new PLC, this has also caused old PLC to be discontinued in around 10 years. As a result, acquiring discontinued spares for old PLC would be difficult, causing the normal maintenance or safety operation of vessel to be undermined.

Over the years, Modern have incorporated a pool of experienced and highly-trained boiler engineer from Japan and Singapore, dealing with PLC and wide variety of boilers, capable to replace PLC and modify MGO at the same time. With our accumulated experience and expertise, it has allowed vessels to efficiently save money and time.

Modern also offers great solution for troubleshooting such as unplanned shutdown. Our comprehensive services to ensure boilers of your vessels continue to operate safely and efficiently which will deliver maximum performance and low operating cost.

Old PLC



New PLC





Procedure of PLC Replacement and MGO Modification

On-site Inspection (1 day by 1 engineer)

Check and inspect existing condition, such as space of panel, program for PLC.



Planning (from 1 week to 1 month)

Analyze extracted program of PLC to create new PLC.



Application for Certification

Submission of Application for Class Approval with Modification Drawing.



Dispatch of Engineers

- General check within Dry Dock
 - ✓ General check 6 days
 - ✓ Modification 3 days
- On-board attendance
 - ✓ Modification 4 days



Combustion Trial and Adjustment (1 day)

After modification is completed, we perform examination of combustion test with witness of superintendent/ chief engineer.



Reporting

Final Completion Report provided, inclusive of revised drawing, if needed.



Modification Sample

Control System **Before** Modification



Engine control room

Various meters (Example)

- Drum Pressure Gauge
- FO Pressure Gauge
- Drum Water Level



Control apparatus

- Many control buttons make control difficult and may cause serious operation failure.



PLC

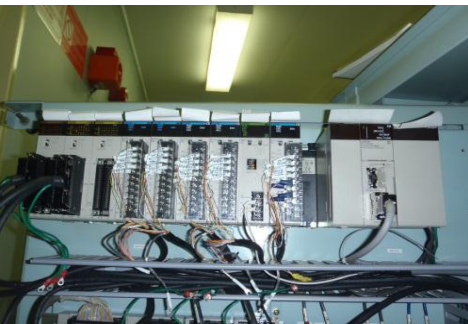
Maker : Panasonic

- This system has 7 units of PLC set.
- Once any of the PLC set breaks down, the boiler cannot be controlled.

Control System **After** Modification



- ✓ The existing meters remain unchanged.
- ✓ Only control apparatus is changed to a touch panel.
- ✓ This replacement will simplify and assist ship crews with operating procedure displayed.
- ✓ Easier operation means a fewer mistakes.



PLC

- ✓ Maker : OMRON
- ✓ New system uses only 2 units of PLC.



Modern Automation & Engineering Pte Ltd

Marine Boiler Control and Instrumentation

List of Parts used for Modification and Replacement

MGO Modification

- The pump corresponding to low viscosity.
- The flame eye corresponding to MGO.
- FO cut-off valves (2 valves)
- FO temp sensor and indicator

PLC Replacement

- New PLC assembly

Our Recent Track Records

Till date, we have carried out more than 10 vessels for PLC Replacement and MGO Modification.

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