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INSTRUMENTATION

1. GENERAL

Accurate knowledge of conditions prevailing within operating machinery and systems is a prerequisite for the correct operation and control of the plant and for problem diagnosis.

Pressure gauges and thermometers in particular are vital to the watch keeping function. The importance of such instrumentation is often not recognised by operating staff.

All instrumentation currently fitted to the plant must be fully serviceable. Defective instruments must be repaired or replaced, as appropriate. Included in this context are not only pressure gauges and thermometers, but also ammeters, indicator lights, sight glasses, remote pressure, temperature and flow-sensors, hour meters, revolution counters and tachometers.

In view of their importance to the operation of the plant, the following minimum standards must be adopted in the application of pressure gauges and thermometers.

2. THERMOMETERS

To be installed (where facilities already exist) in the following applications:

- Heat exchangers' primary circuit, inlet and outlet.
- Heat exchangers' secondary circuit, inlet and outlet.
- Diesel engines - Cylinder cooling water inlet manifold.
- Lubricating oil inlet manifold.
- Fuel oil inlet manifold.
- Individual cylinder exhausts (except on machines running at 1 000 rpm and above).
- Exhaust before turbocharger.
- Exhaust after turbocharger.
- Individual cylinder cooling water outlets (except on machines running at 1 000 rpm and above).
- Cooling water outlet turbocharger gas inlet casing.
- Cooling water outlet turbocharger gas outlet casing.
- Scavenge air before intercooler.
- Scavenge air after intercooler.
- Centrifuge oil inlet.
- Air compressors' cooling water outlet.

- Ambient seawater temperature.
- Ambient Engine Room temperature.
- Fuel tanks temperature.

3. PRESSURE GUAGES

To be installed (where facilities already exist) in following applications:

- Suction and discharge sides of all pumps
- Inlet and outlet sides of all filters
- Diesel engines - Cylinder cooling water inlet manifold
- Lubricating oil inlet manifold
- Fuel oil inlet manifold
- Scavenge air before intercooler.
- Scavenge air after intercooler.
- Sea cooling water supply
- Air compressors cooling water inlet.
- Bunker Manifold.

Note: Pressure / suction gauges are particularly prone to vibration damage. Vibration may reach the gauge via the medium being measured, for example, pulsation of fuel oil in fuel inlet manifold or via the structure to which the gauge is secured. The former is a most common occurrence and is preventable by protecting the gauge with an isolating cock adjusted to dampen the pulsation. Structure-borne vibration may be alleviated by adjusting the stiffness of the mounting, or shifting the gauge elsewhere and connecting it remotely by means of copper or plastic tubing.