
M26 Safety devices of steam turbines

(1976)
(Corr.1
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M26.1 Governors and speed control

M26.1.1 All main and auxiliary turbines are to be provided with overspeed protective devices to prevent the design speed from being exceeded by more than 15%.

Where two or more turbines are coupled to the same gear wheel set, the Classification Society may agree that only one overspeed protective device be provided for all the turbines.

M26.1.2 Arrangement is to be provided for shutting off the steam to the main turbines by suitable hand trip gear situated at the manoeuvring stand and at the turbine itself.

Hand tripping for auxiliary turbines is to be arranged in the vicinity of the turbine overspeed protective device.

M26.1.3 Where the main turbine installation incorporates a reverse gear, electric transmission, controllable pitch propeller or other free-coupling arrangement, a separate speed governor in addition to the overspeed protective device is to be fitted and is to be capable of controlling the speed of the unloaded turbine without bringing the overspeed protective device into action.

M26.1.4 Where exhaust steam from auxiliary systems is led to the main turbine it is to be cut off at activation of the overspeed protective device.

M26.1.5 Auxiliary turbines driving electric generators are to have both:

a speed governor which, with fixed setting, is to control the speed within the limit of 10% for momentary variation and 5% permanent variation when the full load is suddenly taken off, and an overspeed protective device which is to be independent of speed governor, and is to prevent the design speed from being exceeded by more than 15% when the full load is suddenly taken off (see M26.1.1).

M26.2 Miscellaneous safety arrangements

M26.2.1 Main ahead turbines are to be provided with a quick acting device which will automatically shut off the steam supply in the case of dangerous lowering of oil pressure in the bearing lubricating system. This device is to be so arranged as not to prevent the admission of steam to the astern turbine for braking purposes.

Where deemed necessary by the Classification Society appropriate means are to be provided to protect the turbines in case of:

abnormal axial rotor displacement,
excessive condenser pressure,
high condensate level.

M26.2.2 Auxiliary turbines having governors operated other than hydraulically in which the lubricating oil is inherent in the system, are to be provided with an alarm device and a means of shutting off the steam supply in the case of lowering of oil pressure in the bearing lubricating oil system.

M26.2.3 Main turbines are to be provided with a satisfactory emergency supply of lubricating oil which will come into use automatically when the pressure drops below a predetermined value.

The emergency supply may be obtained from a gravity tank containing sufficient oil to maintain adequate lubrication until the turbine is brought to rest or by equivalent means. If emergency pumps are used these are to be so arranged that their operation is not affected by failure of the power supply. Suitable arrangement for cooling the bearings after stopping may also be required.

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M26.2.4 To provide a warning to personnel in the vicinity of the exhaust end steam turbines of excessive pressure, a sentinel valve or equivalent is to be provided at the exhaust end of all turbines. The valve discharge outlets are to be visible and suitably guarded if necessary. When, for auxiliary turbines, the inlet steam pressure exceeds the pressure for which the exhaust casing and associated piping up to exhaust valve are designed, means to relieve the excess pressure are to be provided.

M26.2.5 Non-return valves, or other approved means which will prevent steam and water returning to the turbines, are to be fitted in bled steam connections.

M26.2.6 Efficient steam strainers are to be provided close to the inlets to ahead and astern high pressure turbines or alternatively at the inlets to manoeuvring valves.

NOTE

The hand trip gear is understood as any device which is operated manually irrespective of the way the action is performed, i.e. mechanically or by means of external power.

END

M27 Bilge level alarms for unattended machinery spaces
(1976)

M27.1 All vessels are to be fitted with means for detecting a rise of water in the machinery space bilges or bilge wells. Bilge wells are to be large enough to accommodate normal drainage during the unattended period. The number and location of wells and detectors is to be such that accumulation of liquids may be detected at all normal angles of heel and trim.

M27.2 Where the bilge pumps start automatically, means shall be provided to indicate if the influx of liquid is greater than the pump capacity or if the pump is operating more frequently than would normally be expected. In this case, smaller bilge wells to cover a reasonable period of time may be permitted. Where automatically controlled bilge pumps are provided special attention shall be given to oil pollution prevention requirements.

M27.3 Alarms are to be given at the main control station, engineers' accommodation area and at the bridge.

END

M28 Ambient reference conditions
(1978)

For the purpose of determining the power of main and auxiliary reciprocating internal combustion engines, the following ambient reference conditions apply for ships of unrestricted service:

Total barometric pressure	1000 mbar
Air temperature	+45°C
Relative humidity	60%
Sea water temperature	32°C
(charge air coolant-inlet)	

NOTE

The engine manufacturer shall not be expected to provide simulated ambient reference conditions at a test bed.

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