Upper Limits for Temperature Rise Tests of Semiconductor Converters for Power

Amended Rules and Guidance

Rules for the Survey and Construction of Steel Ships Part H
Rules for the Survey and Construction of Inland Waterway Ships
Guidance for the Survey and Construction of Steel Ships Part H
Guidance for the Survey and Construction of Inland Waterway Ships

Reason for Amendment

Since 1977, the ClassNK Rules had specified with respect to the upper limits of temperature increase tests for semiconductor converters and their accessories that reference is to be made to the provisions of limits of temperature rise for the controlgears of motors, except for semiconductor element connections.

In recent years, advances in semiconductor technology have been made on daily basis and various kinds of semiconductor converters are now used on ships and upper limits for temperature rise corresponding to each converter are selected. Furthermore, the international standard IEC 61800-5-1 specifies that it is to be confirmed that the upper limits of temperature rise do not exceed the values specified by manufacturers in consideration of acceptable temperature rise for each part used in semiconductor converters and their accessories. Therefore, the ClassNK Rules also needed to be reviewed.

Accordingly, relevant requirements were amended based upon IEC 61800-5-1.

Outline of Amendment

(1) Amended requirements so as to apply the upper limits of temperature rise for semiconductor converters and their accessories specified by manufacturers to temperature rise tests.
(2) Added IEC 61800 as a reference standard for semiconductor converters.

Amended Requirements

Rules for the Survey and Construction of Steel Ships
Part H: 2.12.5
Rules for the Survey and Construction of Inland Waterway Ships
Part 8: 2.12.5
Guidance for the Survey and Construction of Steel Ships
Part H: H2.12.1
Guidance for the Survey and Construction of Inland Waterway Ships
Part 8: 2.12.1