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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 21066-2007

**Electrical installations of ships and mobile and fixed offshore
units -- Procedures for calculating short-circuit currents in
three-phase a.c.**

船舶和移动式及固定式近海设施的电气装置 三相交流短路电流计算方法
(English Translation)

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3.1 Terms and definitions

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Foreword

This standard is identical with IEC 61363-1:1998 Part 1 Electrical equipment "of ships and mobile and fixed offshore installations. Three-phase AC short circuit current calculation method "(in English).

This standard is equivalent translation IEC 61363-1:1998.

For ease of use, this standard made the following editorial changes.

- a) "this International Standard" be replaced by "this standard";
- b) with a decimal point ' . 'Instead of a comma as the decimal point,' ';
- c) Remove the preface to the international standards;
- d) the original Figure 3 add notes;
- e) of the original equation (65), (66), (67), (72), (75) and (78) editorial changes.

The standard proposed by China State Shipbuilding Corporation.

The standard by the China Shipbuilding Technology and Economy Research Institute.

This standard was drafted. China Shipbuilding Technology and Economy Research Institute, Zhanjiang Ocean University.

1 Scope

This standard specifies the method for the calculation of short circuit current may occur in marine or offshore facility AC power devices.

This calculation method is applicable to non-mesh-shaped three-phase AC system with the following characteristics.

- a) the operating frequency of 50Hz or 60Hz;
- b) having at GB/T 7358-1998 Table 2 prescribed system voltage;
- c) having one or more different voltage levels;
- d) include generators, motors (asynchronous and synchronous), transformers, reactance coils, cables and converter unit;
- e) having a) the system neutral point is connected to the hull by an impedance (used to limit the flow of short-circuit current in the hull;
- f) has a neutral point of the hull insulation.

The calculation method for three-phase symmetrical short-circuit state, namely three phase conductors shorted together, or short-circuit at the same time the three-phase short circuit causing the hull.

For an asymmetric short-circuit condition caused by short-circuit current calculation will come to higher short-circuit current non-periodic (DC) component of this standard will not be considered.

Formulas and methods described in this standard, and can sufficiently accurate calculation of 100ms before the short-circuit current fault condition. When calculating a when a generator directly connected to the bus system, you can also use these formulas and methods to calculate the short circuit is greater than 100ms time period flow. When the time period exceeds 100ms, the role of the control system voltage regulator may be the primary. This standard does not consider the calculation of the voltage regulator the section affected.

The standard goal is to give the formula an active element in power system short-circuit current, and indicate different locations in computing power system when the short-circuit current, how to simplify these formulas. Taking into account the maximum impact generated by the system active element is calculated given the expected short-circuit Current estimates.

The formula is the element associated with the system on the basis of electrical engineering theory is derived from. To simplify the calculation method, but at the same time maintaining Acceptable accuracy of the results, a list of appropriate assumptions and the impact of these assumptions on the calculation results.

This standard provides a calculation method. When the result of using the corresponding selector switch equipment, the standard interpretation and application of the simplified formula and the corresponding results provide guidance. In addition to calculating the network short-circuit current, the present standard does not provide any additional information.

To understand the calculation method and results, assuming that a person committed to the

short-circuit current calculation thoroughly familiar with the principles of electrical engineering.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 7358-1998 Marine Electrical Equipment Design General (idt IEC 60092-201:1994)
IEC 60034-4. 1985 rotating electrical machines - Part 4. Methods of measurement to determine the parameters of the synchronous motor IEC 60038. 1983 IEC standard voltages IEC 60050 (151). 1978 International Electrotechnical Vocabulary (IEV) Chapter 151. electromagnetic device IEC 60050 (411).1996 International Electrotechnical Vocabulary (IEV) Chapter 411. rotating machines IEC 60050 (441). 1984 International Electrotechnical Vocabulary (IEV) Chapter 441. Switchgear, control devices and fuses IEC 60092-202:1994 Electrical installations in ships - Part 2. System Design Protection GB/T 21066-2007/IEC 61363-1:1998