

# Survey: Generator

## 1 Synopsis

This survey is issued as part of a Request for Information (RFI) by the United States Coast Guard (USCG) as a means of market research for gaining knowledge of capabilities pertaining to Generators that may meet Polar Ice Breaker's specific design and operational requirements.

## 2 Purpose

The purpose of this survey is to perform market research to identify the capability of currently manufactured Generators that may meet Polar Ice Breaker's specific design and operational requirements as defined herein.

## 3 Requirements

The following design and operational requirements for Generators are sought:

- 1) Suitable for Marine (shipboard) installation.
- 2) Produce 4160 or 6600VAC, 3 phase, three wire, delta wound, 60Hz, ungrounded.
- 3) Continuous power rating of (a) between 2,000 eKW and 10,000 eKW for Auxiliary Generators and (b) between 8,000 eKW and 25,000 ekW for Main Generators.
- 4) Capable of meeting the following step load requirements:  
*Variation from rated voltage – transient.* Momentary voltage variations within the range of -15% to +20% of the rated voltage, and the capability to restore voltage to within  $\pm 3\%$  of the rated voltage in not more than 1.5 seconds when:
  - A load equal to the starting current of a motor or a group of motors, at least 60% of the rated current of the generator, and power factor of 0.4 lagging or less, is suddenly thrown on with the generator running at no load; and
  - A load equal to the above is suddenly thrown off with the generator running at 95% of rated load.
- 5) Capable of operating in an interior ambient air temperature range from 40°F to 122°F.
- 6) (a) An Auxiliary Generator capable of operating satisfactorily over an operating life of not less than 150,000 hours. The life predicated on 45,000 hours at 50 percent rated-load; 60,000 hours at 80 percent rated-load; and 45,000 hours at 90 percent rated-load. A generator capable of withstand not less than 100,000 start/stops during its operating life.  
  
(b) A Main Generator capable of operating satisfactorily over an operating life of not less than 30,000 hours. The life predicated on 15,000 hours at 50 percent rated-load; 15,000 hours at 90 percent rated-load. A generator capable of withstand not less than 20,000 start/stops during its operating life.

## 4 Response Instructions

Please provide Product Guides/Data Sheets for each Generator that meets the design and operational requirements listed above. Additionally, please complete the questions on Attachment (1). If the Generator does not meet an individual requirement stated above, please indicate the maximum capability for that requirement.

## **Survey: Generator**

### **Attachment (1)**

Please answer the following questions regarding each generator for which a Product Guides/Data Sheets are provided:

1. Generator Manufacturer
2. Generator Model No.
3. Continuous Power Rating (ekW)
4. Short Circuit Rating
5. Subtransient reactance
6. Output Voltage
7. 2 Hour Overload Rating
8. Efficiency
9. Dimensions (L x W x H)
10. Weight