

Date: _____

APPLICATION FOR APPROVAL OF USE OF
LITHIUM-ION BATTERY SYSTEM(New Change Renewal)

To: Messrs. NIPPON KAIJI KYOKAI

Name of Applicant:

Address:

(Signature) _____

We hereby request issuance of a certificate on the following automatic device/equipment in accordance with the Rules for the Survey and Construction of Steel Ships on satisfactory completion of tests and inspection.

| | |
|--|---|
| Name of Article | |
| Type (Those of similar type, if any, to be described separate) | |
| Drawings | Fill out "Attached sheet 1", "Attached sheet 2" and "Attached sheet 3". Attached sheet 1: A. Battery System Attached sheet 2: B. Automatic Device and Equipment (Environmental Test) Attached sheet 3: C. Computer System (Battery Management System) ⁵ |
| Other Documents | |
| Apply to "Approval of Use of Computer System for BMS (Battery Management System)" ⁴ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Date of Test | |
| Where to Contact | Address: |
| | Tel.: _____ E-mail: _____ |
| | Name of Sec. Dept : _____ Name of person in charge : _____ |
| Remarks | |

Note:

1. In case space is in short, use separate sheets.
2. Cross out with a straight line on unnecessary letter.
3. The applicant is to be identical to the section of the manufacturer in charge of the equipment concerned.
4. Refer to the Part 8, Chapter 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" regarding rules and required documents for "Approval of Use of Computer Based System". In case don't apply for "Approval of Use of Computer Based System", drawing submission and shop test are to be required for each delivery in compliance with Annex 18.1.1 of NK Rule part D.
5. In case apply to "Approval of Use of Computer Based System" for BMS simultaneously.

Form 7-9 (Attached sheet 1)

| A. Li-ion Battery System (9.2.1, Part 9, Chapter 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use”) | | |
|---|----------------|--------------|
| Documents need to be submitted | Document Title | Document No. |
| (1)(a) Specification for Li-ion battery system | | |
| (1)(b) System diagram for Li-ion battery system (inc. descriptions of cable sizes, types, materials, etc.) | | |
| (1)(c) Instruction manuals for the control functions of Li-ion battery systems | | |
| (1)(d) List of Items monitored and protected by BMS | | |
| (1)(e) Witness testing plans | | |
| (2)(a) Test reports for cells or modules ⁶ | | |
| (2)(b) Test reports for Li-ion battery system ⁶ | | |
| (2)(c) Environmental conditions for BMS (temperature, vibration, humidity, EMC and protection grade (IP Grade)) | | |
| (3)(a) Documents related to manufacturing and quality control standards for cells and modules | | |
| (3)(b) Past manufacturing and delivery records for cells and modules | | |
| (3)(c) Documents related to manufacturing and quality control standards for BMS | | |
| (3)(d) Past manufacturing and delivery records for BMS | | |

Note:

6. Describe the test report and certificate issued by third party deemed appropriate by the Society if any.

Form 7-9 (Attached sheet 2)

| B. Automatic Device and Equipment (Environmental Test) (9.4.1, Part 9, Chapter 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use") | | |
|---|----------------|--------------|
| Documents need to be submitted | Document Title | Document No. |
| (1) Specifications (description of the product name, type, principal particulars, use, construction, performance, etc.) | | |
| (2) List of equipment including the similar type | | |
| (3) System diagram (when systems are composed of plural units) | | |
| (4) Construction drawings (general dimensions and sectional assembly plan, etc.) | | |
| (5) Wiring diagram (electrical systems), piping diagram (pneumatic or hydraulic systems) | | |
| List of major parts (this may be included in the above (2) or (4)) (a) Product name, principal particulars, material, quantity, applicable rules and standards are to be specified. (b) Bought-in parts are to be included. | | |
| (7) Instruction manual (including operating procedure) | | |
| (8) Inspection and test specification for quality control (including test data) | | |
| (9) Past records of products | | |
| (10) Environmental test procedures prepared according to 1.3. | | |
| (11) Certificate and test result certificate issued by bodies recognized by the Society (if any) | | |
| (12) Quality control for software (a) Quality standards (b) A quality plan for software lifecycle (c) Quality assurance procedures in production | | |
| (13) Documentation of software modification Work procedures for modifying program contents and data including upgrades | | |

Form 7-9 (Attached sheet 3)

| C. Computer Based System (Battery Management System) ^{7, 8} | | |
|--|----------------|--------------|
| Documents need to be submitted | Document Title | Document No. |
| (1) Documents related to quality management: i) Documents showing satisfaction of a quality system ii) Quality plan iii) Documents related to security policies | | |
| (1)(b) Test programs and procedures for intra-system integration testing | | |
| (1)(c) Test reports of environmental tests according to Table 7.1-1 or a certificate issued in accordance with Chapter 1 | | |
| (1)(d) Other drawings and data deemed necessary by the Society | | |
| (2)(a) Risk assessment report | | |
| (2)(b) Documents related to software code creation and testing, etc.: i) Software module functional descriptions and associated hardware descriptions for programmable devices ii) Evidence of verification (detection and correction of software errors) for software modules in accordance with the selected software development standard iii) Evidence of functional tests for programmable devices at the software module, subsystem, and system levels (The functional testing is to be designed to test the provisions of features used by the software but provided by the operating system, function libraries, customized layer of software and any set of parameters.) | | |
| iv) Functional description of software | | |
| v) List and versions of software installed in system | | |
| (2)(c) Other drawings and data concerning systems such as the following: i) User manual including instructions for use during software maintenance ii) List of interfaces between system and other vessel systems iii) List of standards used for data links | | |
| (2)(d) Where approval has already been granted by other classification societies, documentation of such approval tests performed | | |
| (2)(e) Other drawings and data deemed necessary by the Society | | |

Note:

7. In case apply to “Approval of Use of Computer Based System” for BMS simultaneously.

8. Refer to the Part 8, Chapter 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use” regarding rules and required documents for “Approval of Use of Computer Based System”.