Certificate No:
TAA0000398

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
LNGPac and EMS/PMS

Issued to
Wärtsilä Norway AS
Rubbestadneset, **Norway**

is found to comply with
DNV rules for classification – Ships Pt.6 Ch.5 Sec.21 Cyber security

Application :

This type approval covers security capabilities in accordance with DNV security profile 1 and IACS UR E27 (Apr. 2022), subject to conditions stated in this certificate.

Issued at **Høvik** on **2023-04-24**
This Certificate is valid until **2025-04-23**.
DNV local unit: **Bergen**

for **DNV**

Approval Engineer: **Simen Vike Lande**

Jarle Coll Blomhoff
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

The LNGPac and EMS/PMS control systems are built on the same automation platform. The LNGPac system is a complete fuel gas supply system for LNG fuelled vessels, and is designed for functionality such as control, monitoring and safety. The EMS/PMS system includes energy management for DC systems and power management for AC systems, with related control, monitoring and alarm functionality. The EMS and PMS function can be integrated in the same system or be implemented separately. This type approval covers cybersecurity capabilities and reference architecture for:

LNGPac and EMS/PMS version 1.0.0

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- Inventory list
- System block diagram (topology)
- A declaration demonstrating that required security capabilities have been correctly implemented and configured in accordance with relevant approved configuration documents and “SES Network and Security Checklist”.

Any modifications in the system to be delivered compared with the type approved system covered by this certificate shall be documented and submitted for approval in each case.

Major changes of the type approved system affecting future deliveries shall be informed to DNV. If the changes are considered to affect functionality for which rule requirements apply, a new functional type test may be required, and the certificate may have to be renewed to identify the new version. Minor changes are covered by this type approval.

Application/Limitation

All hardware devices and accessible interfaces in the LNGPac and EMS/PMS systems shall be installed in areas with means to prevent unauthorised access and/or with physical access restrictions.

External devices communicating by IP-network with the LNGPac and EMS/PMS as per the type approved architecture shall be allocated to a security zone in scope of the class notation Cyber secure.

Type Approval documentation

Tests carried out

Applicable tests according to DNV-RU-SHIP Pt.6 Ch.5 Sec.21 edition July 2022, security profile 1.
Relevant manuals and instructions of Wärtsilä’s management system have been verified for compliance with IACS UR E27 chapter 5.

Marking of product

The components in the type approved systems shall be marked/identified in accordance with name, model and version as listed in the document “SES_HybridAutomation_SBOM_DBOM”.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer’s product type marking and the type approval certificate.

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE