KEMENTERIAN PERHUBUNGAN REPUBLIK INDONESIA
DIREKTORAT JENDERAL PERHUBUNGAN LAUT

MINISTRY OF TRANSPORTATION OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF SEA TRANSPORTATION

SERTIFIKAT KETERAMPILAN
CERTIFICATE OF PROFICIENCY

Nomor Seri / *Serial No.*
CP4282329

Nomor Sertifikat / *Certificate No.*
6200117433370321

Dengan ini dinyatakan bahwa
This is to certify that

Nama / *Name* : **ZAENAL ARIFIN**

Tempat dan tanggal lahir / *Place and date of birth* : TULIS, BATANG , 19 December 1979

telah menyelesaikan pelatihan dan lulus evaluasi :
has completed approved training and passed the assessment of

BASIC TRAINING FOR LIQUEFIED GAS TANKER CARGO OPERATIONS Revalidation

yang dilaksanakan oleh : PIP Semarang
which has held by

di : Semarang
at 16 December 2015 to 22 December 2015

Sesuai ketentuan STCW 1978 beserta dengan amandemennya, Peraturan : Chapter V, Section A-V/1-2-1 STCW 2010
in accordance with the provisions of STCW 1978 as amanded, Regulation *Chapter V, Section A-V/1-2-1 STCW 2010*
yang telah mendapat pengesahan dari Direktorat Jenderal Perhubungan Laut selaku Administrasi.
which has been approved by the Directorate General of Sea Transportation as Administration.

PIP Semarang

Semarang , 25 March 2021

An. Direktur Jenderal Perhubungan Laut
O.b. Director General of Sea Transportation
Ketua/Direktur/Kepala
Principal/Director/Head

POLITEKNIK ILMU PELAYARAN SEMARANG

Dr. Capt. MASHUDI ROFIK, M.Sc

Tandatangan Pemilik
Signature of the Holder

Sertifikat ini berlaku untuk 5 (lima) tahun sejak tanggal diterbitkan
This Certificate is valid for 5 (five) years commenced from the date of issuance

BASIC TRAINING FOR LIQUEFIED GAS TANKER CARGO OPERATIONS
Subject Area
Based on Reg. V/1-2 and STCW 2010 Code Section A-V/1-2-1

1. **Contribute to the Safe Operation of a Liquefied Gas Tanker**
   - 1.1 Basic knowledge of liquefied gas tankers
     - 1.1.1 Types of liquefied gas tankers
     - 1.1.2 General arrangement and constribution
   - 1.2 Basic knowledge of cargo operation
     - 1.2.1 Piping systems and values
     - 1.2.2 Cargo handling equipment
     - 1.2.3 Loading, unloading and care in transit
     - 1.2.4 Emergency shutdown (ESD) system
     - 1.2.5 Tank cleaning, parging, gas-freeing and inerting
   - 1.3 Basic knowledge of the physical properties of liquefied gases
     - 1.3.1 Properties and characteristics
     - 1.3.2 Pressure and temperature, including vapour pressure/temperature relantionship
     - 1.3.3 Types of elestroctatic charge eneration
     - 1.3.4 Chemical symbols
   - 1.4 Knowladge and understanding of tanker safety culture and safety management
2. **Take Precaution to Prevent Hazard**
   - 2.1 Basic knowledge of the hazards associated with tanker operation
     - 2.1.1 Health hazard
     - 2.1.2 Environmental hazards
     - 2.1.3 Reactivity hazards
     - 2.1.4 Corrosion hazards
     - 2.1.5 Explosion and flammability hazards
     - 2.1.6 Sources of ognition
     - 2.1.7 Electrostatic hazards
     - 2.1.8 Toxycity hazards
     - 2.1.9 Vapour leaks and clouds
     - 2.1.10 Extremely low temperaturs
     - 2.1.11 Pressure hazards
   - 2.2 Basic knowledge of hazards controls
     - 2.2.1 Inerting, drying and monitoring techniques
     - 2.2.2 Anti-static measures
     - 2.2.3 Ventilation
     - 2.2.4 Sugregation
     - 2.2.5 Cargo inhibition
     - 2.2.6 Importance of cargo compatibility
     - 2.2.7 Athmosperic control
     - 2.2.8 Gas testing
   - 2.3 Understanding of information on a Material Safety Data Sheet (MSDS)
3. **Apply Occupation health and Safety Precautions and measures**
   - 3.1 Fuction and proper use of gas-measuring instruments and similar equipment
   - 3.2 Proper use of safety equipment and protective devices
   - 3.3 Basic knowledge of safe working practices and prosedures in accordance with legislation and industry guidelines and personal shipboard safety relevant to liquefied gas tamkers
   - 3.4 Basic knowledge of first aid with reference to Material Safety Data Sheet (MSDS)
4. **Carry out Fire-Fighting Operation**
   - 4.1 Tanker fire organization and action to be taken
   - 4.2 Special hazards associated with cargo handling and transportation of liquefied gases in bulk
   - 4.3 Fire-fighting agents used to extinguish gas fires
   - 4.4 Fixed fire-fighting foam system operation
   - 4.5 Portable fire-fighting foam operations
   - 4.6 Fixed dry chemical system operations
   - 4.7 Basic knowledge of spili containment in relation to fire-fighting operations
5. **Respond to Emergencies**
   - 5.1 Basic knowledge of emergrncy procedures
6. **Take Precaution to Prevent pollution of the environment from the release of Liquefied Gases**
   - 6.1 Basic knowledge of the effects of pollution on human and marine life
   - 6.2 Basic knowledge of shipboard procedures to prevent pollution
   - 6.3 Basic knowledge of measures to be taken in the event of spillage
7. **Assessment and Evaluation**