LNG Competence Development – for ship, trucks and terminals

dr inż. Stefan Jankowski

BALTIC SEA REGION
LIQUEFIED NATURAL GAS
COMPETENCE CENTRE

Bergen, 10-12/04/2018
Members of BSR LNG Competence Centre

1. Klaipeda Science and Technology Park
2. NPPE Klaipeda Shipping Research Centre
3. Hochschule Wismar, University of Applied Sciences: Technology, Business and Design
4. World Maritime University
5. Blekinge Institute of Technology
6. Maritime University of Szczecin
7. Motus Fundation
8. Klaipeda University
9. Lithuanian Maritime Academy
10. Wroclaw University of Science and Technology
11. Tallinn University of Technology
12. Municipality of Samsø
13. Lithuanian Energy Institute
Why?
• All professional activities needs to be conducted at minimum acceptable risk level
• LNG is not so easy going fuel like the traditional ones
• LNG has additional danger - extremely low temperature
• LNG has an expiration date - needs to be used in specific time, if no possibilities to re-liquify
How to achieve the minimum acceptable risk level

• By giving competence required on specific position

• Identified target groups:
  • Business management level
  • Port authority
  • Maritime administrations
  • Policy makers
  • Crews of tugs and other port auxiliary vessels
  • Port personnel
  • Business operational level
  • Masters, engineer officers and all personnel with immediate responsibility for the care and use of fuels and fuel systems on ships subject to the IGF Code
  • LNG bunker /refueling stations operators, LNG cisterns drivers, etc.
Target groups

- Bunker barge / bunker vessels
- Vessels powered by LNG
- Truck cisterns
- Port’s bunker infrastructure
- Port equipment
- Inland vessels
- LNG powered trucks
- LNG powered trains

LNG management level

LNG support level

LNG operational level
# Target groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Quantity</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
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</thead>
<tbody>
<tr>
<td>LNG management level</td>
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<td>LNG support level</td>
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<td>LNG operational level</td>
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- **LNG Value Chain training**
- **LNG Maritime Basic training**
- **LNG Maritime Advanced training**
Target groups

• Value Chain Training (LNG management level)
  • Business management level
  • Port authority
  • Maritime administrations
  • Policy makers

• Maritime Training
  • Basic (LNG support level)
    • Required for seafarers responsible for designated safety duties associated
      with care, use or emergency response to the fuel on board IGF ships
    • Crews of tugs and other port auxiliary vessels
    • Port personnel
    • LNG cisterns drivers,
  • Business operational level
  • Advanced (LNG operational level)
    • Masters, engineer officers and all personnel with immediate
      responsibility for the care and use of fuels and fuel systems on ships
      subject to the IGF Code
    • LNG bunker /refueling stations operators, etc.
1. **Contribute to the safe operation of a ship subject to the IGF Code**
   Explanation of physical and chemical properties of LNG and other low flash point fuels; description of fuel and storage systems for cryogenic liquids; procedures and devices providing the safety during LNG operations; Transfer/bunkering operation of LNG.

2. **Take precautions to prevent hazards on a ship subject to the IGF Code**
   Description of health, ship, equipment and environmental hazards associated with LNG operations and explanation on how to control these hazards; understanding of fuel characteristic presented on a Safety Data Sheet.

3. **Apply occupational health and safety precautions and measures**
   Description of safety means applied during LNG operation; basic knowledge on Medical First Aid with references to a Safety Data Sheets.
LNG Maritime Basic training

4. Fire fighting
   • Organization of fire fighting actions, firefighting agents and methods, firefighting system operations. Theoretical only

5. Respond to emergencies
   Description of emergence procedures and requirements for: emergency breakaway, emergency Shut Down etc.

6. Take precautions to prevent pollution of the environment from the release of fuels found on ships subject to the IGF Code
   Description of measures and procedures to be taken in the event of leakage, spillage, venting of the fuels.
LNG value chain training / the fixed part

1. **Contribute to the safe operation related to LNG**
   Explanation of physical and chemical properties of LNG and other low flash point fuels; description of fuel and storage systems for cryogenic liquids; procedures and devices providing the safety during LNG operations; Transfer/bunkering operation of LNG.

2. **Take precautions to prevent hazards related to LNG**
   Description of health, ship, equipment and environmental hazards associated with LNG operations and explanation on how to control these hazards; understanding of fuel characteristic presented on a Safety Data Sheet.

3. **Apply occupational health and safety precautions and measures**
   Description of safety means applied during LNG operation; basic knowledge on Medical First Aid with references to a Safety Data Sheets.
LNG value chain training / the flexible part

1. Comprehensive LNG supply for maritime customers in the Baltic Sea; Jan Schubert, Nauticor
2. LNG supply chain and commercial solutions Rafał Rygielski, Emerson Process Management
3. Conversion of ship’s propulsion to LNG fueled – design aspects Michał Sienkiewicz, Remontowa Marine Design & Consulting
4. Identification and evaluation of LNG supply chains Lawrence Henesey, Blekinge Institute of Technology
5. LNG for Rail- LNG Hybrid Shunting Locomotive Rustam Alijev, Vilnius Locomotive Repair Depot, Lithuania

... and more
## Competence Centre’s calendar

<table>
<thead>
<tr>
<th>Date</th>
<th>Place</th>
<th>Maritime LNG</th>
<th>LNG Value Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-16/11/2017</td>
<td>Klaipeda/ Lithuania</td>
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Thank you for your attention