

# Regulations for the dry docking of non-ventilated LNG vessels



# SHIPS UNDER GAS ACCEPTANCE

Vessel are usually in gas-free condition before dry-docking

However, shipowner ask sometimes to bring their vessels with LNG remaining into the tanks.

This situation mainly occurs for LNG carrier or LNG-powered vessel (mainly cruise ships in Brest)

Ship's acceptance conditions: Afloat at repair piers or in dry docks

Tanks conditions:

- Tanks with the presence of liquid LNG (gas heel)
- Empty tanks with the presence of cold LNG gas or at ambient temperature
- Empty LNG tanks inerted with nitrogen or inert gas



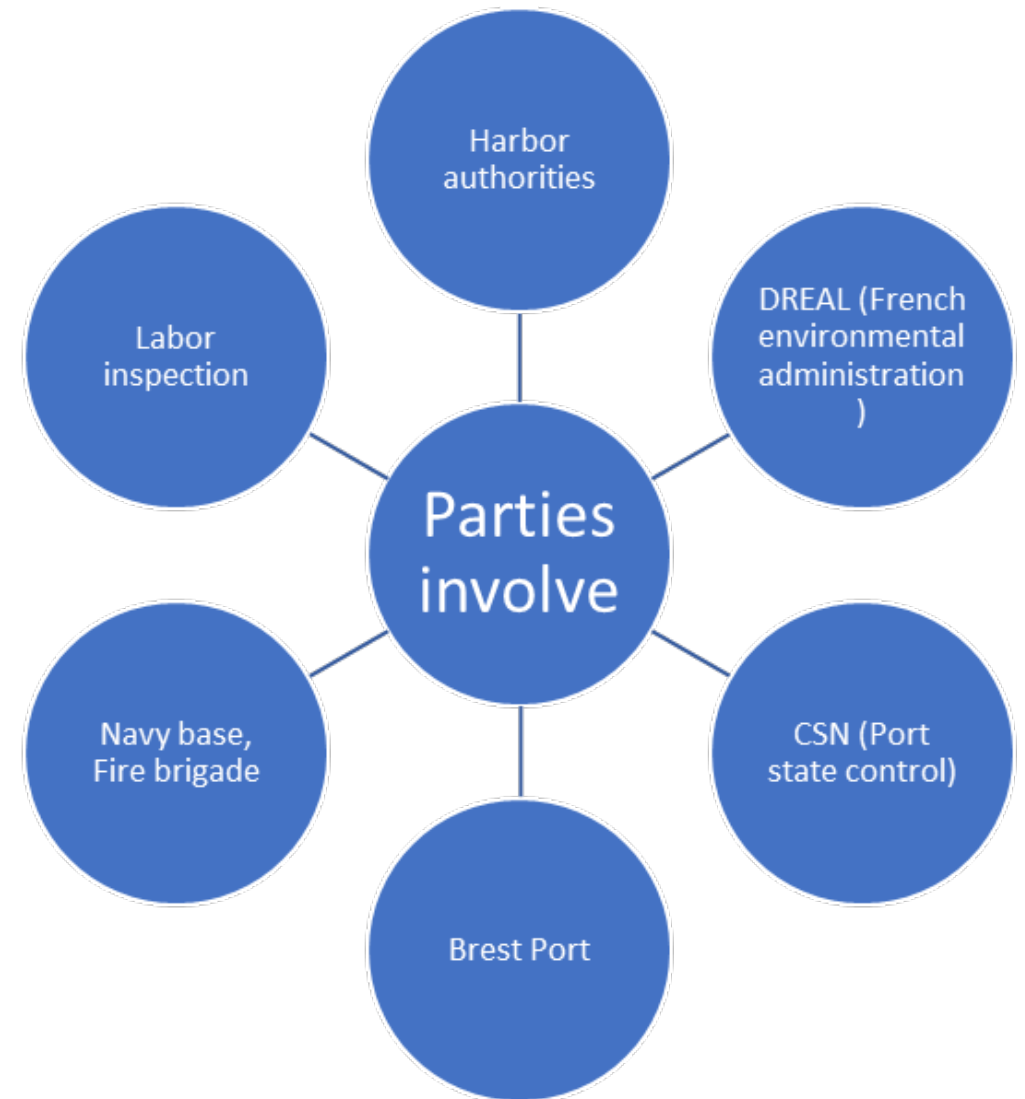
THIS ACCEPTANCE IS BASED ON SEVERAL REFERENCE REGULATIONS:

# REGULATIONS

There are a number of rules and regulations applicable to work on vessel in gas condition.

The main challenges are the harbor rules and the environmental regulations which changed in 2023 and number stakeholders

- Harbor rules – updated in July 2023
- ICPE regulations – 15 mai 2023



# REGULATIONS

## THIS ACCEPTANCE IS BASED ON SEVERAL REFERENCE REGULATIONS:

- **SOLAS Convention and in particular the IGC and IGF codes for the construction of vessels transporting or using liquefied gas**
- **Harbor rules known as “RPM” : Regulations for the handling and storage of dangerous goods in seaports**, in particular its title V in force since July 2023 and the local regulations which define the conditions of admission, with the purpose carrying out repairs (...) of ships (...) transporting or having transported dangerous goods in bulk
- **French Labor Code: Decree No. 77-1321 of November 29, 1977** establishing the requirements relating to work carried out between vessel owners, shipyards and contractors.
- **French Labor Code: General Directive 35 (formerly ministerial ordinance of September the 21st, 1982)** relating to the safety measures to be observed during repair work (...) of ships in operation containing or having contained flammable or combustible liquids or gases
- **French Environmental code: ICPE Regulations (industrial facilities classification for environmental protection)** and the decree of May the 15th, 2023 relating to maintenance and repair activities for ships located in refit forms no. 2 and 3 of the port industrial zone

## IGC & IGF CODES

- The SOLAS convention imposes construction rules to ensure the safety of ships.
- The IGC (transport of liquefied gas) and IGF (use of liquefied fuel) collections specifically deal with the case of LNG (and other liquefied gases)
- The codes provide mandatory provisions relating to the arrangement, installation, control and monitoring of LNG machinery and systems, in order to minimize risks to the ship, its crew and the environment.
- They are fundamentally based on the approach based on risk analysis.



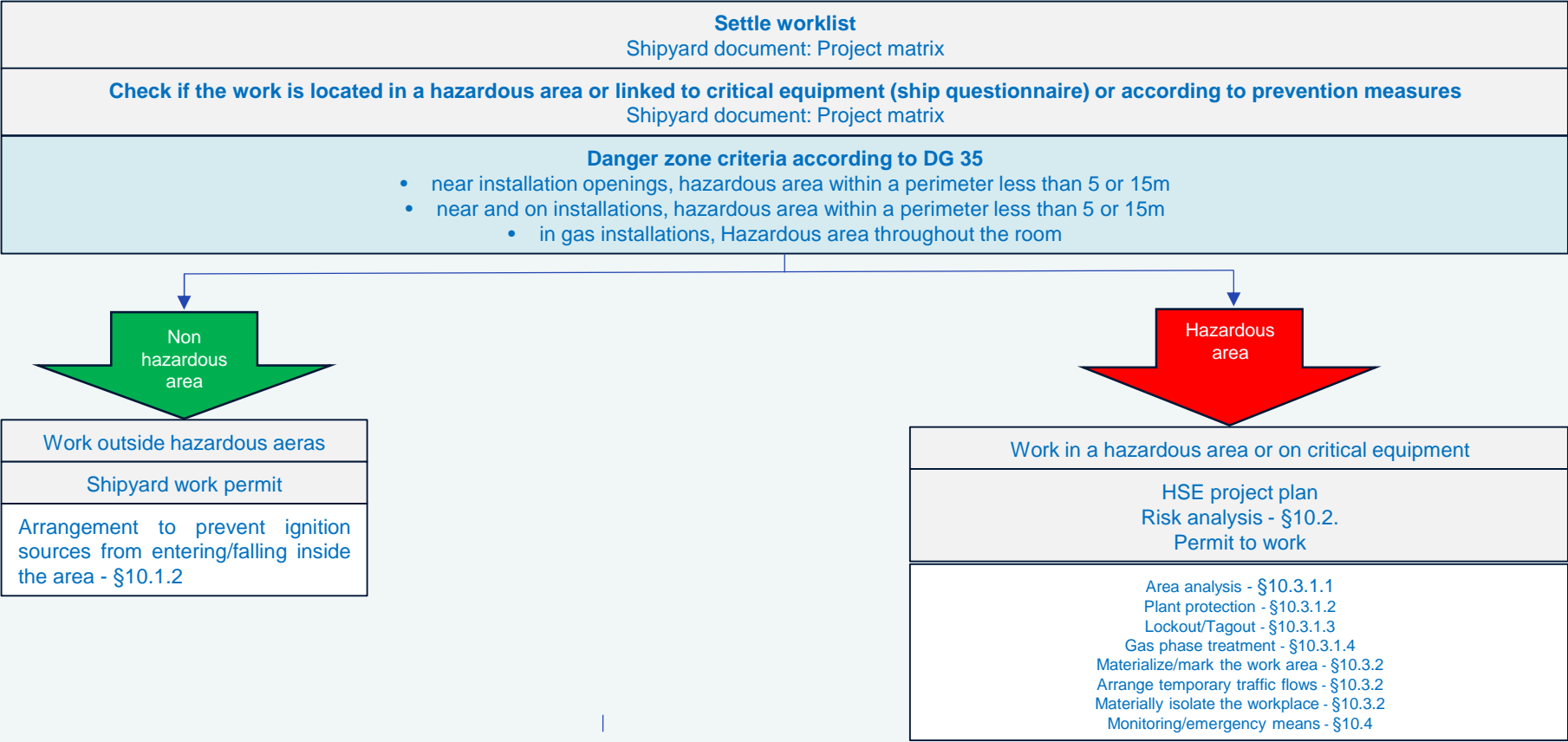
## According to the RPM, the acceptance of a ship and the authorization of work are done within 2 steps

### STEP 1 : ACCEPTANCE OF THE VESSEL TO AN ICPE CLASSIFIED FACILITY UPON PRESENTATION OF THE FOLLOWING DOCUMENTS:

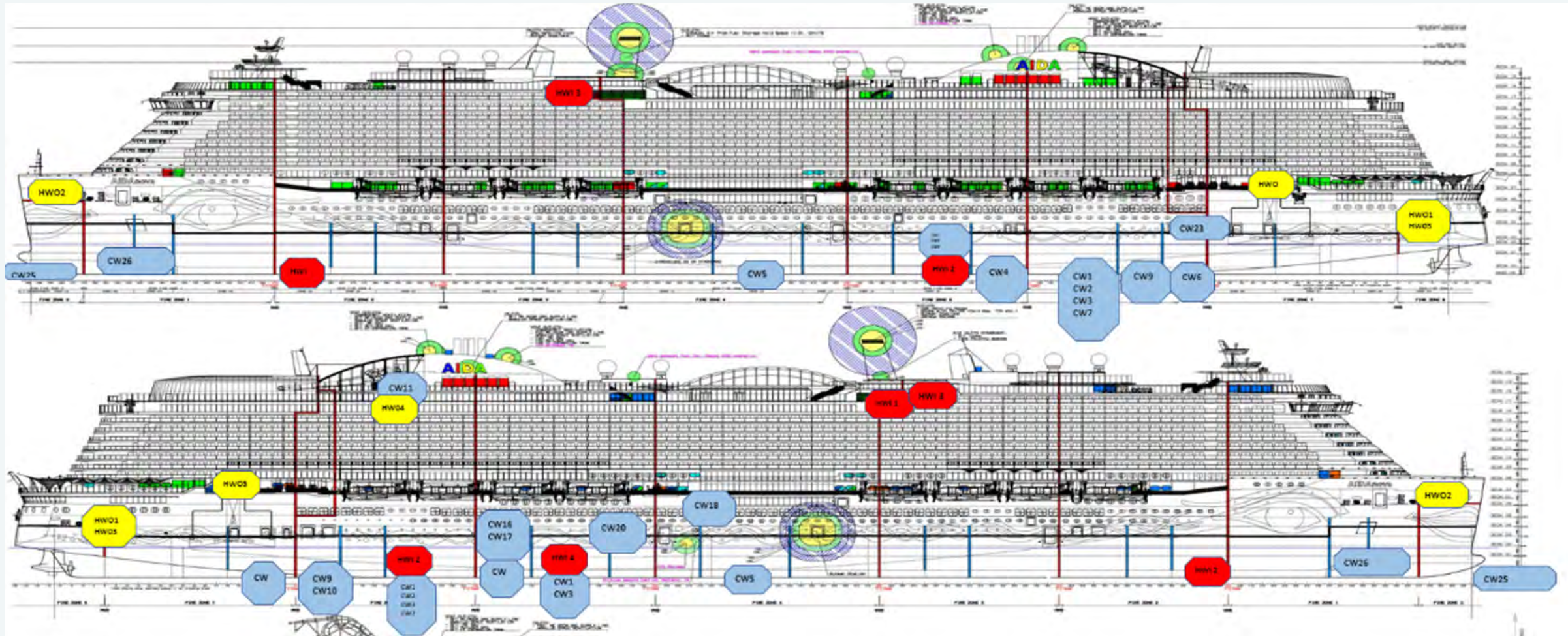
- Drawing of vessel hazardous areas
- Pressure and temperature monitoring table (BOG management and measures to be taken in the event of pressure increase in LNG tanks)  
Solutions
- Checklist of the general condition of the vessel and the means dedicated to emergency situation.
- Status control of the LNG tank by an approved Harbor chemist / expert.

# According to the RPM, the acceptance of a ship and the authorization of work are done within 2 steps

**STEP 2 : WORK AUTHORIZATION ACCORDING TO WORK CARRIED OUT ON BOARD DEPENDS ON THE DISTANCE BETWEEN THE WORK AREA AND THE DANGER ZONES IDENTIFIED ON THE PLANS.**



# Identification of works carried out related to LNG hazardous areas





# REGULATION RELATING TO ICPE & DECREE OF MAY THE 15th 2023 WITH LNG SPECIFICITY

## ICPE articles/paragraph of the decree:

- Ship acceptance procedure
- Prevention of water pollution
- Prevention of air pollution
- Danger, nuisance, incidents or accidents

## A 5th article is added to the Acceptance of vessels transporting/using liquefied natural gas

- **A Hazard Identification Survey** must be carried out by the shipyard in partnership with:
  - Risk and Environment engineering company
  - Professional experts (GTT, ...)
  - Authorities (Harbour Master authorities, Port Expert)
- **Topic raised concerning**
  - Identification and evaluation of safety and environmental hazard and threat scenarios occurring on site (fire, explosion and release of toxic substances scenarios, etc...)
  - Definition and planning in advance of the measures to be taken to prevent these dangers and threats;
  - Preventive & corrective measures identification and actions to reduce the identified risks





**DAMEN**