

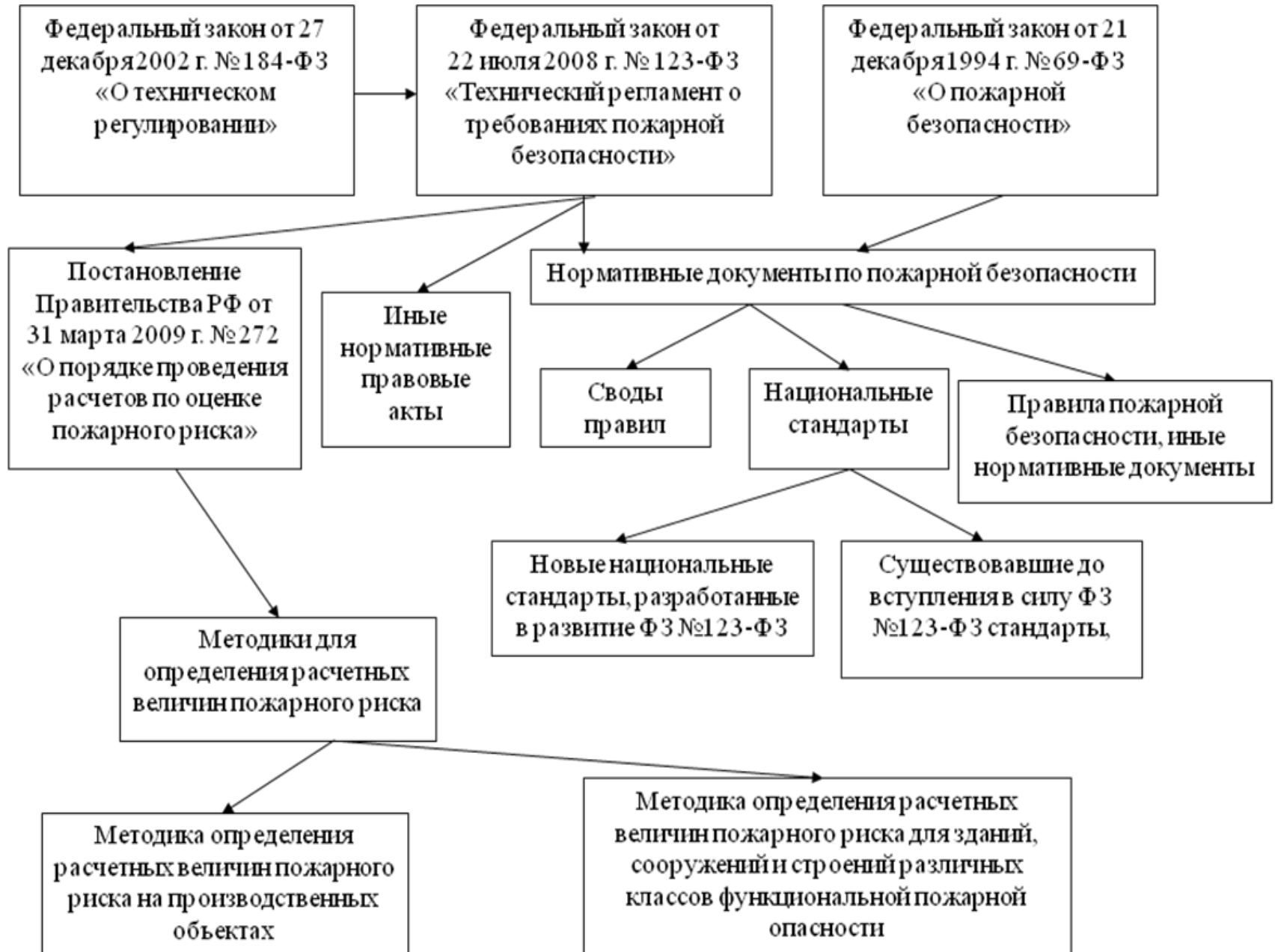


*ФГБУ ВНИИПО МЧС РОССИИ*

# **Improving Fire Safety Regulation of Oil & Gas Complex Facilities**

*D.M. Gordienko*

# Legal and Regulatory Framework for Fire Safety Requirements



## **Improving requirements to fire safety of hazardous production facilities**

- ◆ Modification of Federal Law 123-FZ “Technical regulations on fire safety requirements”;
- ◆ Modification of current codes of fire safety rules and national standards;
- ◆ Development and approval of new codes of fire safety rules and national standards.

## **Current codes of fire safety rules**

- ▶ SP 1.13130.2009\* “Fire protection systems. Evacuation ways and exits”.
- ▶ SP 2.13130.2012 “Fire protection systems. Ensuring fire resistance of protected facilities”.
- ▶ SP 3.13130.2009 “Fire protection systems. System of warning and evacuation management in case of fire. Fire safety requirements”.
- ▶ SP 4.13130.2013 “Fire protection systems. Limitation of fire propagation in protected facilities. Requirements to spatial planning and design solutions”.
- ▶ SP 5.13130.2009\* “Fire protection systems. Automatic fire alarm and fighting installations. Design codes and standards”.
- ▶ SP 6.13130.2013 “Fire protection systems. Electrical equipment. Fire safety requirements”.
- ▶ SP 7.13130.2013 “Heating, ventilation and air conditioning. Fire safety requirements”.
- ▶ SP 8.13130.2009\* “Fire protection systems. Sources of external fire-fighting water supply. Fire safety requirements”.
- ▶ SP9.13130.2009 “Fire-fighting devices. Fire extinguishers. Operating requirements”.

## Current codes of fire safety rules

- ▶ SP 10.13130.2009\* “Fire protection systems. Internal fire-fighting water supply pipeline. Fire safety requirements”;
- ▶ SP 11.13130.2009\* “Locations of stationing of fire brigades. Procedure and method of determination”;
- ▶ SP 12.13130.2009\* “Determination of category of rooms, buildings and outdoor installations by explosion/fire and fire hazard”;
- ▶ SP 13.13130.2009\* “Nuclear plants. Fire safety requirements”;
- ▶ SP 135.13130.2012 “Heliports. Fire safety requirements”;
- ▶ SP 153.13130.2013 “Railway transport infrastructure. Fire safety requirements”;
- ▶ SP 154.13130.2013 “Built-in underground car parks. Fire safety requirements”.
- ▶ SP 155.13130.2014 “Oil and petroleum products storages. Fire safety requirements”.
- ▶ SP 156.13130.2014 “Filling stations. Fire safety requirements”.

## **Codes of fire safety rules acting since 2015**

- ▶ SP 166.1311500.2014 “Urban motor transport tunnels and underpasses of tunnel type with an enclosed part of no longer than 300 m. Fire safety requirements”.
- ▶ SP 231.1311500.2015 “Planning of oil and gas fields. Fire safety requirements”.
- ▶ SP 232.1311500.2015 “Fire protection of enterprises. General requirements”.
- ▶ SP 240.1311500.2015 “Liquefied natural gas storages. Fire safety requirements”.
- ▶ SP 241.1311500.2015 “Fire protection systems. Automatic water fire-fighting installations of tall rack storages. Design codes and standards”.

# Code of rules SP 231.1311500.2015 “Planning of oil and gas fields. Fire safety requirements”

МИНИСТЕРСТВО РОССИЙСКОЙ ФЕДЕРАЦИИ ПО ДЕЛАМ  
ГРАЖДАНСКОЙ ОБОРОНЫ, ЧРЕЗВЫЧАЙНЫМ СИТУАЦИЯМ И  
ЛИКВИДАЦИИ ПОСЛЕДСТВИЙ СТИХИЙНЫХ БЕДСТВИЙ

СВОД ПРАВИЛ СП  
231.1311500.2015

ОБУСТРОЙСТВО НЕФТЯНЫХ  
И ГАЗОВЫХ МЕСТОРОЖДЕНИЙ  
Требования пожарной безопасности

Издание официальное

SP 231.1311500.2015 sets requirements to newly constructed and reconstructed facilities for planning oil and gas fields – surface facilities of oil and gas production, gathering, transport and processing complex:

- multiple well platforms and single wells;
- oil and gas gathering line;
- section of complex processing of oil, gas and condensate;
- section of working agent pumping to maintain formation pressure;
- field pipelines transporting oil, gas and condensate from sites to connections to long distance pipelines or to other processing sites;
- auxiliary facilities technologically connected with the above ones.

# **Content of SP 231.1311500.2015 “Planning of oil and gas fields. Fire safety requirements”**

- ▶ Requirements to fire prevention system, including:
  - general layout and arrangement of facilities for planning of oil and gas fields;
  - process equipment;
  - power supply, heating and ventilation;
  - monitoring, control and emergency systems;
- ▶ Requirements to fire protection system, including:
  - spatial planning solutions and design of buildings and structures;
  - fire alarm, warning and evacuation management systems;
  - fire-fighting water supply;
  - fire-fighting and water spray systems.
- ▶ Requirements to organizational and technical measures to ensure fire safety.



# Code of rules SP 240.1311500.2015

## “Liquefied natural gas storages. Fire safety requirements”

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СП 240.1311500.2015  
СВОД ПРАВИЛ

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**ХРАНИЛИЩА СЖИЖЕННОГО ПРИРОДНОГО ГАЗА**

**Требования пожарной безопасности**

Издание официальное

Москва  
2015

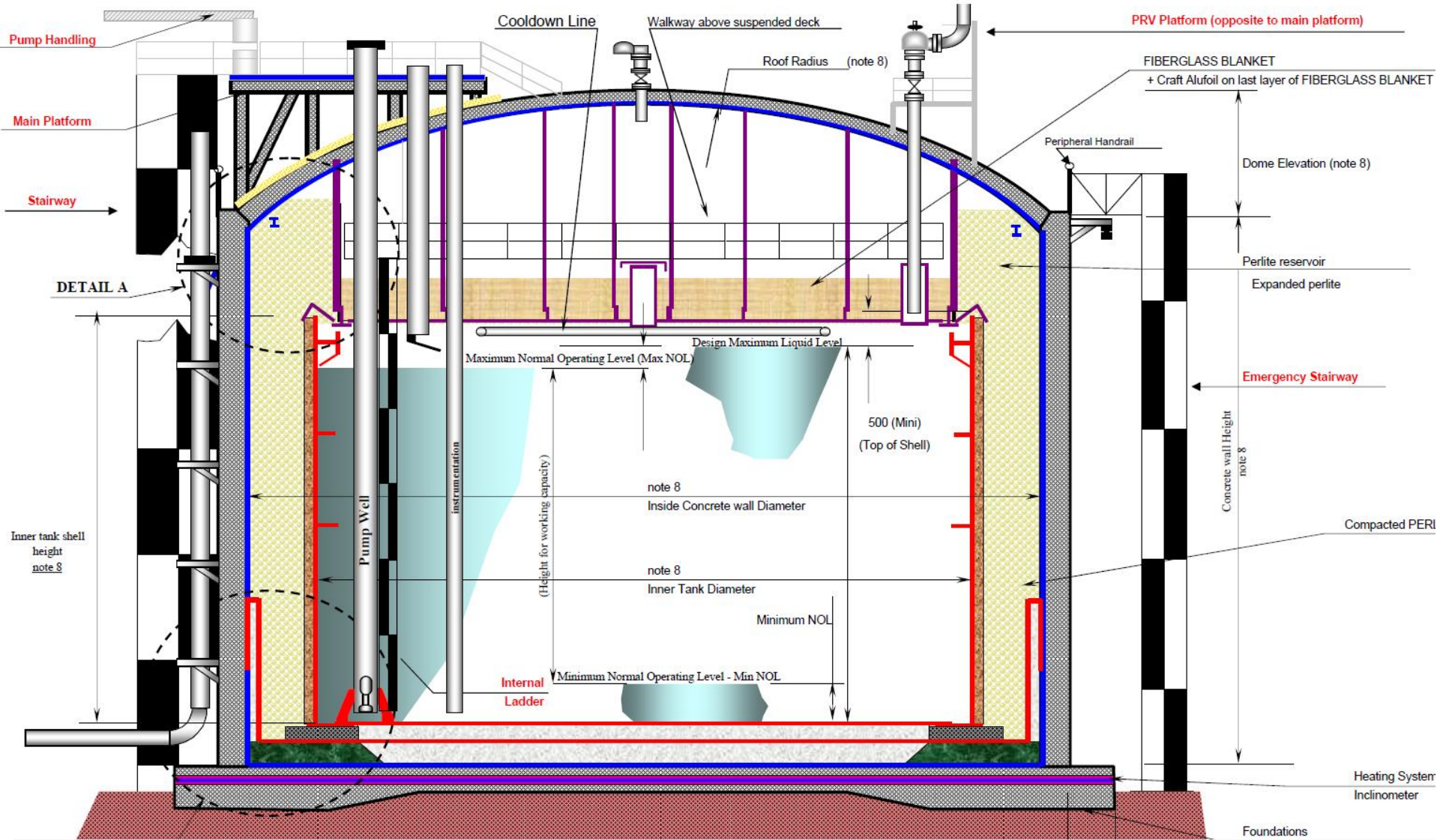
SP 240.1311500.2015 sets requirements to LNG insulated storage facilities with a LNG storage capacity of more than 200 tons, with a single capacity of cryogenic storage vessel of more than 260 m<sup>3</sup> with excess pressure of not more than 0.8 MPa.

Storage vessels with single capacity of up to 200 thousand m<sup>3</sup> are to be considered.

Related fire safety requirements to:

- arrangement and general layout;
- process equipment and LNG storage vessels;
- utility equipment;
- fire-fighting systems

# Full containment tank



# **Codes of rules for fire safety of oil and gas complex facilities**

## **Under approval**

“Off-shore stationary oil and gas platforms on continental shelf. Fire safety requirements”.

“Liquefied hydrocarbon gas storages. Fire safety requirements”.

## **Under development**

“Facilities of small capacity production and consumption of liquefied natural gas. Fire safety requirements” (*jointly with Gazprom VNIIGAZ*).

“Oil processing and petrochemical enterprises. Fire safety requirements”.

“Handling racks for highly flammable liquids, flammable liquids and liquefied hydrocarbon gases at enterprises of oil processing and petrochemical industry. Fire safety requirements”.