



**'Industrial Safety' Group of companies (НП ПБ-ГРУПП)
Scientific and Technical Center of Industrial Safety
Problems Research (ЗАО ИТЦ ПБ)
Industrial Risk Research Agency (АНО АИПР)**

The information of development of normative documents in the field of oil and gas industrial safety in the Russian Federation

**Gleb Churkin,
Deputy Director, PhD
Industrial Risk Research Agency**

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The fundamentals of legal control for industrial safety in the Russian Federation

International Legislative Acts

- The Convention of the International Labour Organization № 174 of prevention of major industrial accidents of 1993
- The Technical Regulations of Eurasian Economic Community
- The Technical Regulations of the Custom Union

Domestic Legislative Acts

- The Federal Law of July 21, 1997 № 116-FZ «On industrial safety of hazardous production facilities» of December 31, 2014 N 514-FZ, of July 13, 2015 N 233-FZ
- The Federal Law of December 27, 2002 N 184-FZ «On Technical Regulation»
- The Federal Law of December 29, 2004 № 190-FZ «The Town-planning Code of the Russian Federation»
- The Federal Law of December 26, 2008 № 294-FZ «On the Protection of the rights of legal entities and individual entrepreneurs in the implementation of state control (supervision) and municipal control»
- The Federal Law of May 4, 2011 № 99-FZ «On licensing of specific activities»
- The Federal Law of June 29, 2015 N 162-FZ «On standardization in the Russian Federation» (re-enacted)
- The Law of the Russian Federation of February 21, 1992 № 2395-1 «On subsoil»
- The Federal Law of November 30, 1995 № 187-FZ «On the continental shelf of the Russian Federation»
- The Federal Law of November 23, 1995 № 174-FZ «On Environmental Impact Assessment»
- The Technical Regulations of the Russian Federation

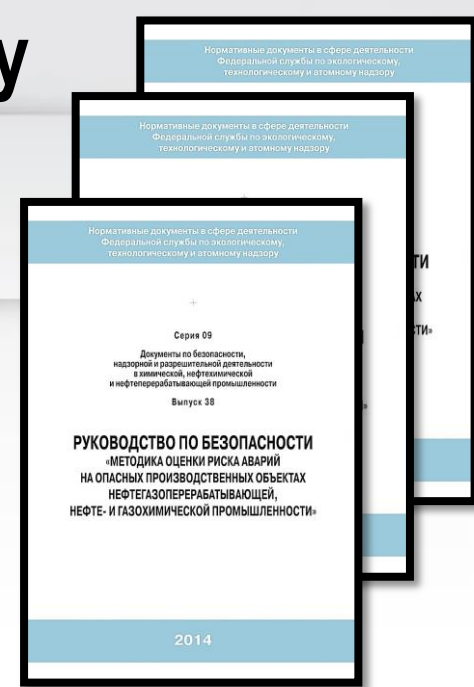
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Main directions to improve industrial safety normative base

1. Implementation of risk-oriented approach at substantiation of safety of hazardous production facilities.

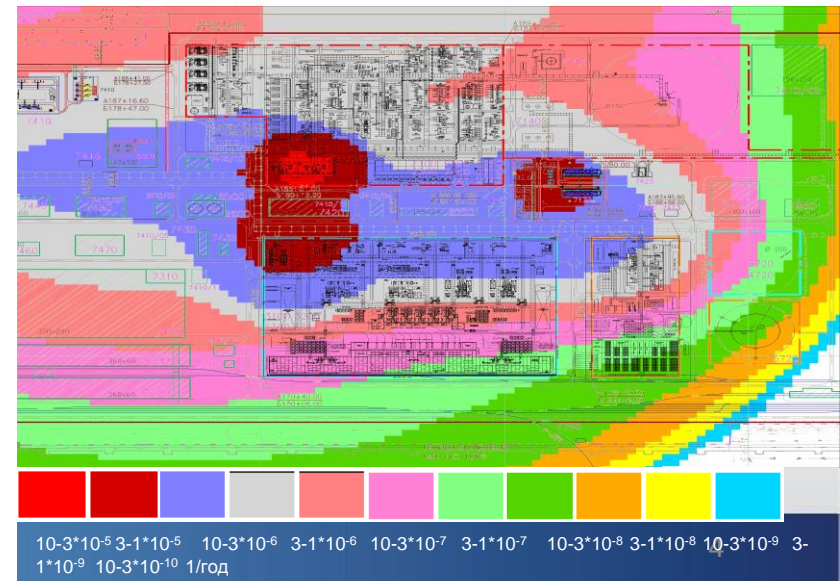
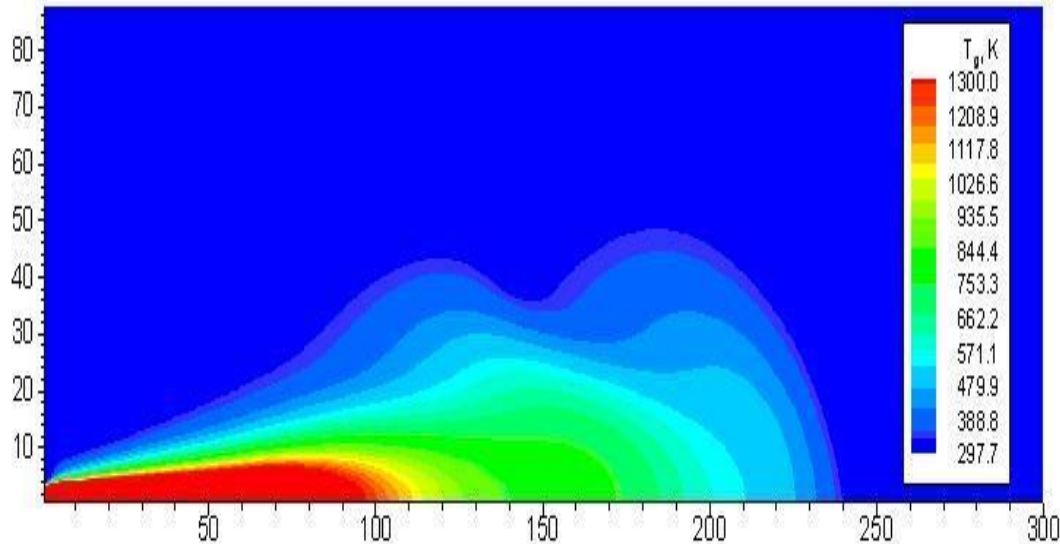
2. Decrease of administrative barriers, creation of conditions for taking optimum design and technical solutions.

3. Development of new requirements of industrial safety for construction and operation of perspective types of oil and gas HPF.

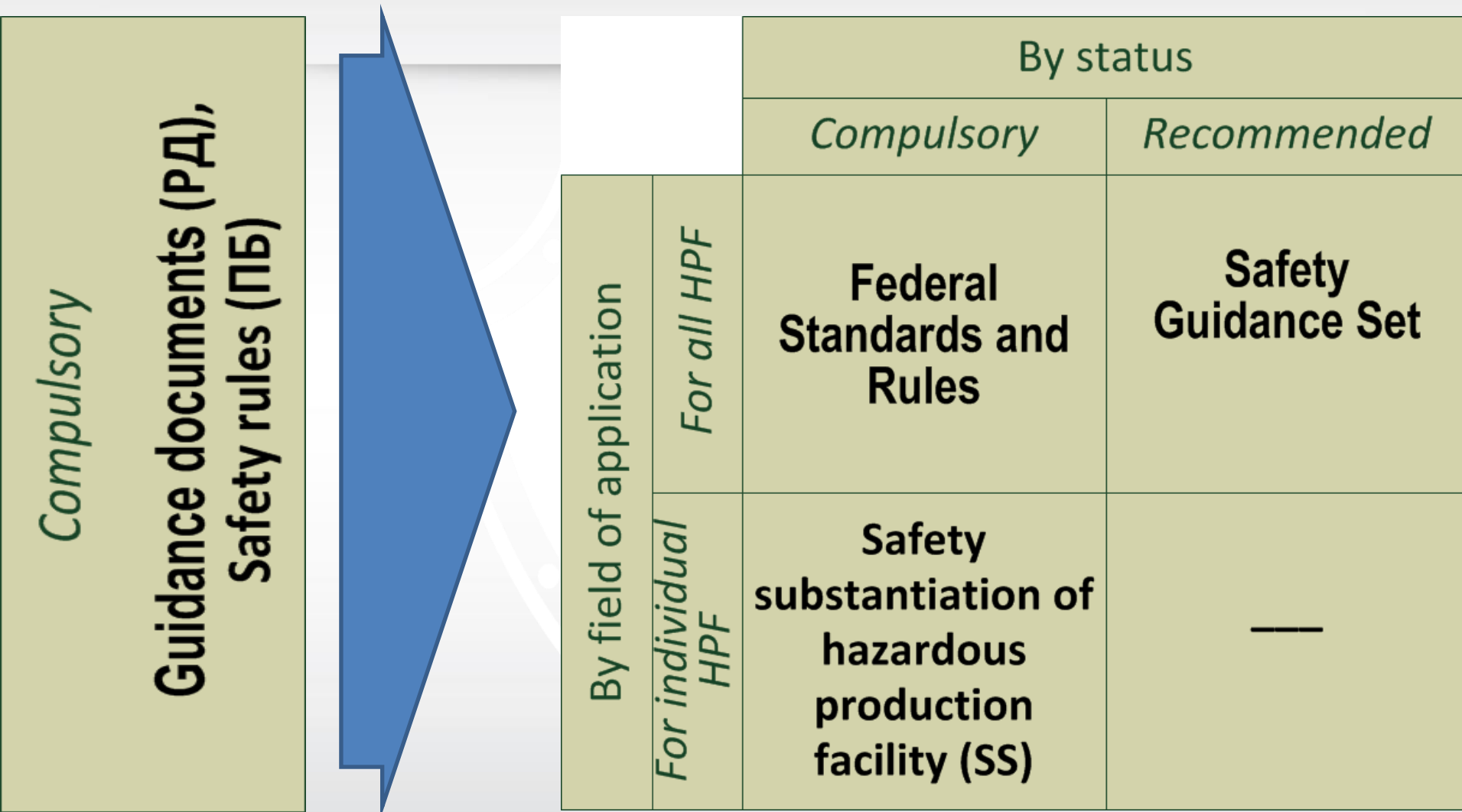


1. Implementation of risk-oriented approach to HPF substantiation of safety

- The Methodology of assessment of accident consequences on explosion and fire risk chemical productions, 2015
- The Methodical fundamentals for hazard analysis and assessment of emergency risk on a HPF, 2015
- The Methodology of assessment of air-fuel mixture explosion consequences', 2015
- The Methodology of modelling of spread of hazardous substances emergency emission', 2015
- The recommendations on development of Contingency plan for localization and elimination of emergency consequences on a HPF of oil trunk pipelines and oil-products pipelines, 2014
- The Methodical recommendations on implementation of quantitative analysis of emergency risk on HPF of oil trunk pipelines and oil-products pipelines, 2014
- The Recommendations on execution and custody of the documents confirming safety of maximum permissible working pressure at employment of HPFs of oil trunk pipelines, 2014
- The Methodology of emergency risk assessment on HPFs of oil and gas treatment, oil and gas-chemical industry, 2013



2.1 New structure of normative base in field of industrial safety



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2.2 The Federal Standards and Rules in the field of Industrial Safety

		By status	
		Compulsory	Recommended
By field of application	For all HPF	Federal Standards and Rules	Safety Guidance Set
	For individual HPF	Safety substantiation of hazardous production facility (SS)	—

- The Safety rules in oil and gas industry with amendments approved by the Decree of Rostekhnadzor of December 12, 2015 № 1
- The Safety rules for offshore facilities of oil and gas complex, approved by the Decree of Rostekhnadzor of March 18, 2014 № 105 (effective since May 7, 2015)
- ‘The Safety rules for hazardous production facilities of trunk pipelines’, approved by the Decree of Rostekhnadzor of November 6, 2013 № 520
- “The Safety rules for gas subsurface storages”, approved by the Decree of Rostekhnadzor of November 22, 2013 № 561
- The General rules of explosion safety for explosion and fire risk chemical and petrochemical plants approved by the Decree of Rostekhnadzor of March 11, 2013 № 96
- ‘The General requirements to safety substantiation of hazardous production facility“, the Decree of July 15, 2013 № 306
- Правила промышленной безопасности ОПО, на которых используется оборудование, работающее под избыточным давлением, approved by the Decree of Rostekhnadzor of March 25, 2014 № 116

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2.3 Safety Guidance Set

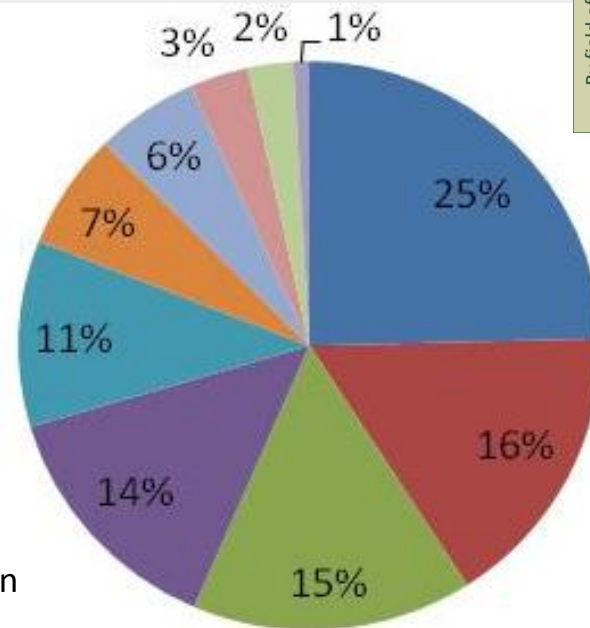
		By status	
		Compulsory	Recommended
By field of application	For all HPF	Federal Standards and Rules	Safety Guidance Set
	For individual HPF	Safety substantiation of hazardous production facility (SS)	—

- The Guidance on safety of vertical cylinder steel tanks for oil and oil products, the Decree of Rostekhnadzor of December 26, 2012 N 780
- The Safety guidance on flare system, the Decree of Rostekhnadzor of December 26, 2012 N 779
- The Safety Guidance for warehouses with liquefied carbureted hydrogen gases and volatile flammable liquids under pressure the Decree of Rostekhnadzor of December 26, 2012 N 778
- The Safety Guidance 'The Recommendations on arrangement and safe operation of industrial pipelines', the Decree of Rostekhnadzor of December 27, 2012 N 784
- Методики анализа риска

2.4 Safety substantiation of hazardous production facility

		By status	
		Compulsory	Recommended
By field of application	For all HPF	Federal Standards and Rules	Safety Guidance Set
	For individual HPF	Safety substantiation of hazardous production facility (SS)	—

- объекты нефтегазодобывающей промышленности
Oil and gas extraction
- ОПО горнорудной и нерудной промышленности, объекты подземного строительства
Ore mining
- объекты магистрального трубопроводного транспорта
Trunkline
- производство, хранение и применение ВМ промышленного назначения
- объекты нефтехимической и нефтегазоперерабатывающей промышленности
Petrochemistry
- ОПО угольной промышленности
coalminig
- объекты нефтепродуктообеспечения
Product pipes
- взрывоопасные и химически опасные производства и объекты спецхимии
- объекты газораспределения и газопотребления
Gas distribution

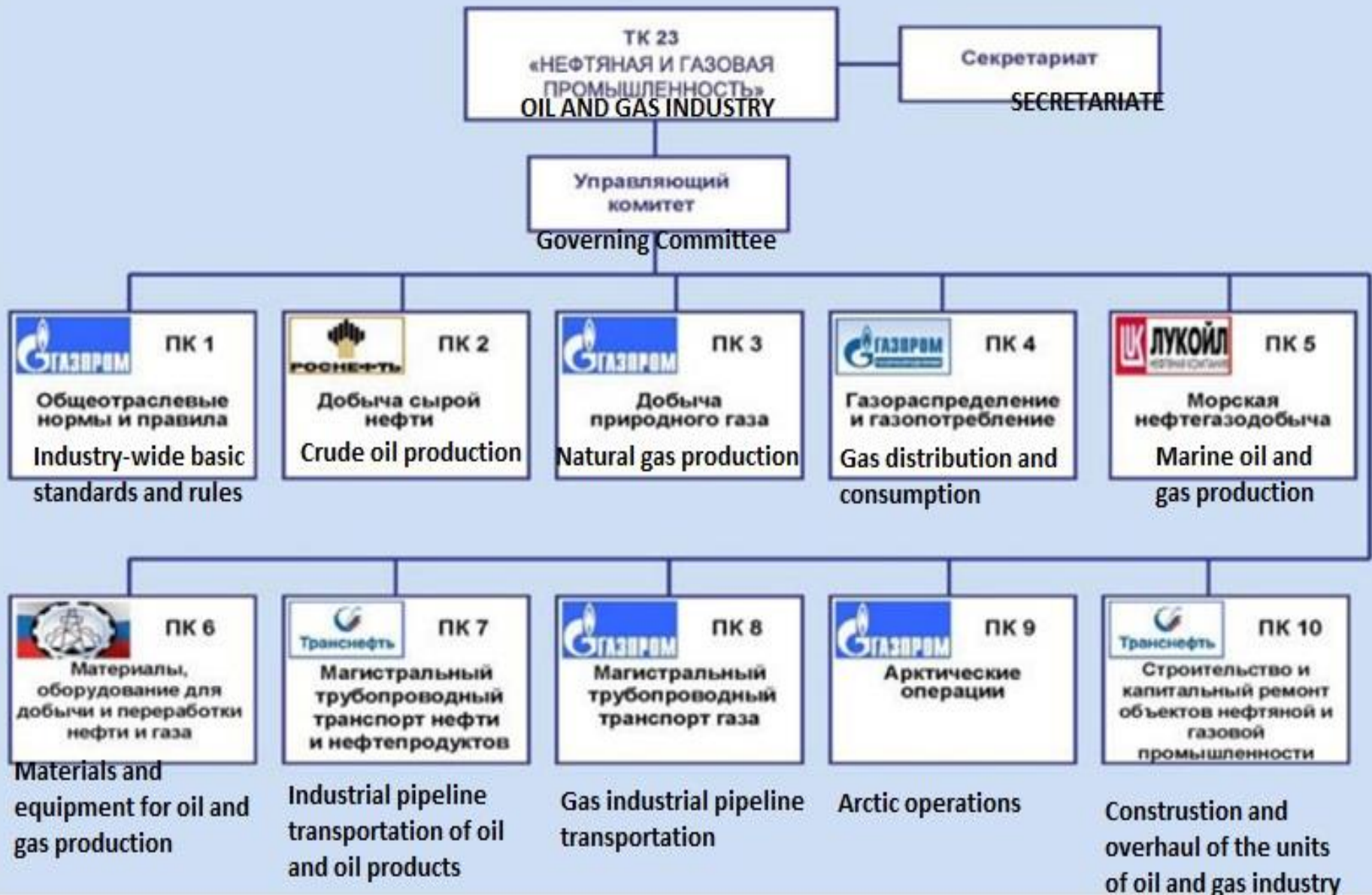


- In 2014 – 2015 25 safety substantiations for the facilities of oil and gas production, including 2 units on the continental shelf on the Russian Federation, have been developed.
- Within the frame of the document «Substantiation of Safety» at the lack of the Russian normative documents requirements the international (ISO, IEC), European standards (EN), the standards of the professional association (DNV, API, ASME, ...). are used.

3. Developing new industrial safety norms and rules for perspective oil and gas objects

- For the year 2016 the development of six FNR for oil and gas complex is planned.
- Participation in the development of national standards GOST R by working in the Technical Committee on standardization № 23 «Equipment and technologies of oil and gas production»

TC 23 Structure



The correspondence of the national TC 23 with their analogues in ISO and CEN

TC 23 Subcommittees	Subcommittees and working groups of ISO TC 67 and other technical committees for ISO and CEN
SC 1 "Industry-wide standards and rules"	ISO TC 67/ WG 2 'Conformance evaluation' ISO TC 67 / WG 4 'Reliability control in technology'
SC 2 'Crude oil production'	ISO TC 67 / SC 3 'Liquids for wells drilling, overhaul and cementation'
SC 3 'Natural gas production'	ISO TC 67 / SC 5 'Pipes of oil assortment' ISO TC 67 / WG 5 'Pipes of oil assortment made of aluminum alloys'
SC 4 'Gas distribution and consumption'	CEN TC 234 ' Gas distribution' ISO TC 138 'Plastic pipes, fittings and valves for liquid and gas transportation'
SC 5 'Marine oil and gas production'	ISO TC 67 / SC 7 'Offshore facilities' ISO TC 67 / WG 10 'Equipment for natural gas liquefaction'
SC 6 "Materials and equipment for oil and gas production and treatment"	ISO TC 67 / SC 4 'Drilling and production equipment' ISO TC 67 / SC 6 'Oil treatment equipment' ISO TC 67 / WG 7 ' Materials to be used in hydrogen sulfide containing mediums'
SC 7 'Trunk pipeline transportation of oil and oil products'	ISO TC 67 / SC 2 'Systems of pipeline transportation' ISO TC 67 / WG 8 'Welding and materials'
SC 8 'Trunk pipeline gas transportation'	
SC 9 'Arctic operations'	ISO TC 67 /SC 8 'Arctic operations'
C 10 'Construction and overhaul of oil and gas units	No analogues

National Standards developed by TC (TK) 23/MTK 523 within 2009-2015 for offshore oil and gas facilities

- ✓ State standard ГОСТ Р 54483-2011 (ISO 19900:2002) Offshore platforms for oil and gas production. General requirements
- ✓ State standard ГОСТ Р 54382-2011 Underwater pipeline systems. General technical requirements (on the basis of DNV-OS-F101-2000* “Underwater pipeline systems”)
- ✓ State standard ГОСТ Р ИСО 17776-2012 Offshore producing facilities. Methods and means for hazards identification and risk assessment. General provisions.
- ✓ State standard ГОСТ Р 56000-2014 Offshore producing facilities. Work in arctic conditions. Basic requirements
- ✓ State standard ГОСТ Р ИСО 13628-3-2013 Design and operation of underwater production systems. Part 3: Pass-through discharge pipeline systems.
- ✓ State standard ГОСТ Р ИСО 13628-2-2013 Design and operation of underwater production systems. Part 2: Flexible pipeline systems for underwater and marine application.
- ✓ State standard ГОСТ Р 55998-2014 Offshore producing facilities. Evacuation paths and temporary shelters. Basic requirements.

Projects:

- ✓ State standard ГОСТ Р *Design and assembly of pipeline systems on offshore producing platforms*
- ✓ State standard ГОСТ Р *Offshore producing facilities. Control and limitation of fire and explosion consequences.*
- ✓ State standard ГОСТ Р ИСО 13628-1 *Design and operation of underwater production systems. Part 1. General requirements and recommendations.*
- ✓ State standard ГОСТ Р *Production, storage and pumping of natural liquefied gas. General safety requirements.*
- ✓ State standard ГОСТ Р *Design and operation of marine terminals of liquefied natural gas. General requirements*
- ✓ State standard ГОСТ Р *Offshore producing facilities. Response to emergency situations. Basic requirements.*
- ✓ State standard ГОСТ Р *Arctic operations. Operation in ice environment. Hydrometeorological data acquisition.*

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Conclusion

1. At present the Russian legislation in the field of industrial safety experiences the intensive changes. These changes are aimed at system solution of the following tasks : increase of HPF safety, decrease of administrative barriers, creation for the design and operating companies of the conditions for taking optimum design and technical solutions taking into account the specifics of the concrete object.
2. Improvement of Rostekhnadzor normative documents is being carried out in parallel with the works on the development of national, interstate and international standards for the objects of oil and gas complex.
3. At development of the normative documents in the field of industrial safety the unique experience of the Russian Federation is taken into account as well as the best foreign standards and engineering practices, which receive practical approval by developing HPF Substantiation of Safety.

Thanks for attention!

Churkin Gleb Yuryevich

tel/fax факс 8(495)-620-47-50

Churkin@safety.ru

www.safety.ru



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