SAFETY STANDARDS OF ORLEN S.A.

Design guidelines for the construction of new and modernization of existing locations and facilities belonging to ORLEN S.A., excluding ORLEN S.A. petrol stations

Coordination:	Acceptance:	Approval:
Team Group OHS and Prevention Coordination Department	Head of the Group OHS and Prevention Coordination Department	Head of the Occupational Health and Safety Office

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INTRODUCTION

1. "Design guidelines for the construction of new and modernization of existing locations and facilities belonging to ORLEN S.A., excluding ORLEN S.A. petrol stations", hereinafter referred to as "Guidelines", serves as an auxiliary material for designers developing technical designs of process facilities.

2. The purpose for indication of requirements is to improve the process of design and work execution for ORLEN S.A. and the Fuel Terminals.

3. The "Guidelines" contains a set of requirements resulting from experience and knowledge of ORLEN's employees, as well as internal ordinances, including the Comprehensive Prevention System (KSP, and current external regulations. The use of information contained therein is aimed at facilitating design execution, implementation and completion of projects.

4. The " Guidelines" contains requirements in the field of occupational health and safety, process safety and fire protection, which are divided into two parts: A and B.

   – **Part A** includes occupational health and safety, process safety and fire protection technical design requirements of ORLEN S.A. There are two Annexes to Part A:
   Annex no. 1 – "Rules for equipping ORLEN S.A. facilities with handheld firefighting equipment" and ***Annex no. 2*** – "SAFETY STANDARDS OF ORLEN S.A. Occupational Health and Safety design guidelines for contractors".

   – **Part B** - directives, regulations and standards that must be included in the general remarks.

5. The application of the "Guidelines" does not release from the obligation on reconciliation on the project documentation and compliance with national and internal regulations, standards, instructions, good practices and proper use of engineering knowledge, taking into account the principles of good practice and technological progress.

The requirements proposed in this document relate to typical situations. Their application may require additional information. Therefore, ORLEN S.A., nor any person involved in the development of these Guidelines, can not be held liable for the use of the information contained in this document, nor for any damage caused as a result of improper application of the requirements or information contained therein.
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PO PIERWSZE BEZPIECZEŃSTWO

Part A - Design guidelines of ORLEN S.A.

1. OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS

1.1 Occupational Health and Safety management		
Item	**General requirements**	**Basic requirements**
1	**It should be taken into account that in ORLEN S.A. a certified Integrated Management System has been implemented and is operational**	It should be taken into account that: 1. In the strategy of ORLEN S.A. we assumed that our task regarding product quality is to meet the needs and expectations of our Clients. 2. We emphasize on strengthening clients' trust in ORLEN S.A. as a company that guarantees the highest quality, pro-ecological properties and timely deliveries of products manufactured and sold by us. 3. Within the framework of applicable legal provisions and in accordance with the declared Policy of the Integrated Management System, we protect the life and health of employees by ensuring safe and healthy working conditions for all. 4. The above goals and operations are executed based on the implemented certified **Integrated Management System**, which consists of: Quality Management System according to ISO 9001, Quality Management System according to AQAP 2110, Environmental Management System according to ISO 14001, Health and Safety Management System according to PN-ISO-45001:2018, Information Security Management System according to PN-ISO/ IEC 27001, Food Safety Management System HACCP. 5. The implemented Systems are compliant with the highest international management standards and constitute everyday practice in the Company's operations, aimed at professional customer service and maintaining the highest standards of health protection, environmental protection and information security.
2	**Development directions in the area of personal and process safety in ORLEN Group for 2022-2026**	The following can be distinguished among the key directions of development in the area of personal and process safety in ORLEN Group for 2022-2026: 1. Development of the work safety management system for contractors, 2. Supporting investment processes, implementation of new technologies and innovations in terms of ensuring safe working conditions and process implementation. 3. Maintaining and developing preventive measures to reduce the accident rate. 4. Development of methods and tools in the area of OHS in the field of managing aspects related to occupational safety.
3	**Issues of occupational safety, fire safety and process safety should be taken into account in all stages of the creation and "life" of the production installation,**	1. Already at the stage of developing the concept of the object, the following should be taken into account: – issues regarding the safety of people and properties, – requirements resulting from the applicable laws and internal standards (Comprehensive Prevention System - KSP), national and EU, as well as: safety standards of the Capital Group, Best Available Engineering Practices (BAT) such as: API standards, NFPA standards and good practices; and then in the developed documentation. 2. The project should include identified significant potential safety hazards, as well as risks for people that may occur during construction, implementation, assembly and commissioning, testing, production, operation (usage, maintenance, renovation) and decommissioning. It

	i.e. **- planning,** **- searching for and analyzing its location,** **- design,** **- construction,** **- implementation, assembly and commissioning,** **- research** **- production and operation,** **- decommissioning**	should also include ways to protect against threats. 3. As part of design activities, the Designer is obliged to develop: 3.1. criteria for assessing whether the facility is safe for people during construction, i.e. research, implementation, assembly, commissioning, production and operation and decommissioning. 3.2. principles of applying safety measures for people in all stages of the creation, operation and decommissioning of the facility. 3.3. principles of assessment and reduction of risk for people during construction, testing of implementation, assembly, commissioning, operation (usage, maintenance, renovation) and decommissioning of the facility or its elements and analysis of accepted design solutions based on these criteria, presenting this analysis in the developed documentation, as well as elaborating lists of the above-mentioned criteria, divided into stages: construction, commissioning, production and operation of the production installation. 4. The project should meet these criteria at an acceptable level in relation to safety, as well as reliability and quality criteria in accordance with the relevant regulations and standards: internal standards of ORLEN S.A., national and international (EU) and API standards related to the given production installation. 5. The installation must carry out the required technological process and deliver products taking into account the quality requirements and the requirements for optimizing their protection of people and properties by keeping the risk at a reasonable and acceptable level. 6. As part of project activities, safety requirements included in the Safety Standards of the Capital Group should be taken into account.
1.2 Building, structures, materials, processes, production installations' technical equipment		
Item	**General requirements**	**Basic requirements**
1	**Buildings, rooms, workplaces and working environment must be designed in accordance with the applicable national standards and the requirements of ergonomics.**	1. The construction of structures which are expected to hold work rooms must be carried out based on designs which consider the occupational health and safety requirements and fire protection requirements. 2. Each design must be approved by a licensed experts in the field of OHS and fire protection (and health and sanitary experts for large-size structure/ cubature buildings). 3. It is necessary to ensure work rooms appropriate to the type of performed works and the number of employees, this also applies to hygiene and sanitary rooms. It is recommended that if men and women are employed in the same facility, separate toilets for men and women should be allocated, regardless of the number of employees. 4. All structures must meet occupational and fire protection safety requirements. 5. For personnel usage, it is necessary to design an additional rest and recreation room with proper equipment (12-hour work system). 6. If the safety standards in this regard are more restrictive than the ones specified in regulations, apply the more restrictive ones provided if they are approved by a proper appraiser.
2	**The machines and other technical equipment used must ensure safe and healthy**	1. Facilities must be designed in such a way that, in addition to the implementation of technological, technical, organizational and economic functions: 1.1. the essential requirements set out in the executive provisions to the Act on the conformity assessment system or relevant EU directives in relation to installation facilities (if such requirements have been established) and their technical and operational

	working conditions and take into account the principles of ergonomics.	documentation as well as OHS and fire safety requirements specified in relevant general regulations and internal regulations of ORLEN S.A. contained in the Comprehensive Prevention System (table in Part B) have been met, 1.2. the required safety levels have been achieved and the possible risk of loss of human health during construction, implementation, operation and commissioning, testing, operation and decommissioning have been limited to the minimum. 2. It is unacceptable to equip work stations with machines and other technical devices that do not meet the requirements for conformity assessment. 3. Requirements for machinery and other technical equipment are subject to the provisions on technical inspection and should be designed, constructed and commissioned in accordance with the requirements of these regulations. 4. Safety measures used on machines and other technical devices in various industries are to be designed and constructed in a way as to protect employees against: – injuries – the effects of hazardous chemicals, – electric shock, – excessive noise, – mechanical vibrations, – radiation, – other harmful work environment factors. 5. Railings on permanent working platforms must consist of guardrails placed at a height of at least 1.1 m and footboards with a height of at least 0.15 m. Between the handrail and the footboard, two crossbars should be placed at a distance of 1/3 of the height of the handrail or this space should be filled in a way that prevents people from falling. Stairs railings must consist of guardrails placed at a height of at least 1.1 m. Between the handrail and the curb, two crossbars should be placed at a distance of 1/3 of the height of the handrail or this space should be filled in a way that prevents people from falling. The requirement does not apply to staircases in buildings. 6. Barriers/ WEMA grids: – color standard of steel constructions - balustrades, toe-boards, ladders, gates (self-closing) and closing of ladders should be yellow (RAL1023), – raising the barriers in the area of entry to ladders on columns, etc. together with the construction of the cage (PN-EN ISO 14122), – providing a balustrade rail connector at right angle (protection of demountable barriers), – prohibition of mounting ladders directly to the WEMA grids. 7. Safety showers / eyewash stations: – safety shower with an eyewash function, – connected to the drinking water network in a suitable temperature range from 15°C to 37°C. The water flow rate should not be less than 75 lpm. (liter per minute) for a minimum of 15 minutes, – in the case of emergency showers and eyewash stations with the use of water heaters located in potentially explosive atmospheres, these devices must be in the EX version, – emergency shower set should contain information about the operation, maintenance, and the methods and frequency of

		conducting periodic operation tests of the device, – the shower should be permanently and clearly marked by the manufacturer (minimum and maximum flow and maximum static pressure, manufacturer's name and article number). The shower must be marked with safety signs in accordance with PN-EN ISO 7010, located near the shower, – if there is a technical possibility, it is necessary to provide signaling of use of the shower to the control room (DCS signal plus temperature graph – connection with the control center), – safety shower should be certified by PZH. In addition, all buildings and production installations should be designed in accordance with the rules, i.e. - introduce as obligatory PN-EN ISO 14122-4 standard for ladders, stairs and platforms (including ladder safety cage, self-closing gate) - taking into consideration other provisions of ORLEN S.A. safety standards (eg number of railing crossbars). - The safety ladder cage should be commenced from a height of 2.2 m- 3.0 m from the ground. - for every 200 square meters of working platform there should be designed 2 descents (including stairs) arranged on two opposite sides of the platform, taking into account the reasons for providing escape routes in an emergency situation. - use the distance for mounting light columns enabling continuity of use of the handrail (in accordance with PN-EN ISO 14122-4). 8. Lockout – Tagout system (LOTO) - machines, devices, fittings must be equipped with elements for the application of their physical interlocks. 9. On buildings and structures covered with a flat roof (roof or flat roofs with a slope of up to 12 °), a system based on individual anchor posts or a rope system should be designed and made to provide protection against falling from a height for people performing work on the roof. The designed solution must meet the requirements of PN -EN 795 and CEN TS 16415: 2013. 10. Spaces in which tanks with dangerous media are located require ventilation. It is necessary to apply a solution consisting the possibility of supplying air to the lower part by using ducts and other devices to dilute the present atmosphere of the hydrocarbon mixture with the air created in the lower part of the above mentioned technical device. It should also be possible to apply the steam in the event of unsealed fittings or tanks in such a space. Due to the possibility of leakage of the above-mentioned substance, it is also necessary to adjust the air stream (ventilation). In case of detectors activation, the chamber will require effective purging. This does not apply to storage tanks in curtain walls. 11. Installation of the pressure relief safety system from the connection to the steam, nitrogen and air steam stations. In addition, the water and steam pipelines should be adapted to work in winter.
3	**Materials and processes may be used only after determining the degree of their harmfulness to the health of the**	1. Materials and technological processes posing special threats to health and life may be applied only after: – prior determination of the degree of their harmfulness to the health of the employees, – applying appropriate preventive measures. 2. Conducting research and processes on above – mentioned materials and processes in order to determine the degree of their harmfulness to health may be performed by authorized units in accordance with legal regulations in this regard.

	employees	
4	**It is necessary to limit the risks for people and property by selecting the required security measures**	1. Safety measures designed for production installation objects and activities that are to eliminate and/ or reduce risks and hazards and are to ensure the highest level of security that can be achieved. The measures must ensure protection of health and life of employees and contractors. 2. Safety measures are to protect employees against dangerous and harmful factors occurring in the work environment. 3. Safety measures must be designed, selected and located in such a way that the employees of the production installations and neighboring installations do not bear unacceptable risks. 4. Safety measures are to be optimized - which means that they are to ensure the highest level of safety that can be reasonably achieved throughout the lifetime and proper functioning of the installation and its facilities.
5	**Mass hazards**	It is necessary to identify the facility's mass hazards due to its location.

1.3. Production installation’s service employees, external contractors

Item	General requirements	Basic requirements
1	**Proper operation of the production installation’s service, including the "human-machine" interface should be started at the early stage of the installation (facility) design phase, continue and take into account at all stages of the formation and life of this installation (facility).**	1. The project should specify at least the minimum number of service employees and their competences. While performing all the tasks provided for them, they should ensure safe operation of the installation. 2. Employees who have experience gained while working on similar production installations, if possible, should actively participate in the design process of the production installation on the terms specified by the Parties. 3. The solutions used in the project are to support employees (production process operators) in carrying out their tasks, duties related to operating the installation in such a way as to limit the possible consequences of erroneous operations or to promote safety behaviors. 4. The design should include solutions to facilitate interaction between service staff and devices and installation systems. 5. The human - machine interface should be designed in such a way as to ensure: service personnel, maintenance, repairs, comprehensive information, ease of control, but with taking into account the necessary time to make decisions and actions required at a given time. Information necessary for the persons mentioned above must be understandable for the service staff and given, presented in a simple and unambiguous way. 6. Workstations requiring the operation of screen monitors must meet the safety and ergonomic requirements specified in the OSH regulations when operating screen monitors. 7. Installation’s service personnel must have access to the necessary information to: – assess the installation condition in all circumstances, – operate within the limits defined by the parameters of the systems and equipment of the installation, taking into account the operating conditions and limitations, – be able to clearly state that the appropriate safety systems are automatically activated when they become necessary and the respective executive systems are working as intended, – be able to determine the need and timing of manual initiation of

		specific protection measures, if any. 8. The design of the installation should include solutions that support effectively the required actions of the service staff, taking into account the time necessary (available) for the operation and the conditions to be expected. 9. In proper places of the installation, devices should be designed to verify the implementation of activities and obligations for operators in order to confirm that the activities required by them have been identified and correctly implemented. 10. Design a safe access to all fittings that require manual control or can be manually controlled. 11. The project should indicate types of training for installation's service staff and people involved in its maintenance. 12. The project must be reviewed by licensed experts, including an appraiser in the field of OHS and fire protection (and health and sanitary experts for large-size structure / cubature buildings)
2	**Work safety culture**	1. Equipping employees in gas masks with multi-gas absorbers or escape hoods. 2. Equipping employees in individual protection equipment, including anti-electrostatic clothing with additional flame retardancy for works with open fire, personal multi-gas detectors. 3. Appointment of occupational health and safety coordinators together with the appointment of the Main Health and Safety Coordinator. 4. Equipping first aid kits with means for first aid in consultation with the physician supervising the construction workers. 5. Introduction of obligatory training on threats occurring on construction sites. Introduction of inserts for passes confirming completion of training. 6. Preparation of IBWR based on the risk assessment of the task carried out in accordance with the requirements of ORLEN S.A. (JSA). 7. Preparation of guidelines by the contractor regarding technical safety on the basis of: BIOZ, IBWR (short form facilitating familiarization of directly production employees) and their introduction to the training program on hazards occurring at the construction site. 8. Designation and marking in a permanent and visible manner of storage fields on the construction site. 9. Determination of main internal transport routes as well as evacuation and fire routes and fire gates (in agreement with the Investor). 10. Designation and marking in a permanent and visible way of transport routes for vehicles on the construction site. 11. Ensuring the effectiveness of transport supervision, with particular emphasis on road traffic. 12. Organization of back-up facilities - in accordance with the requirements of ORLEN S.A.

2. PROCESS SAFETY TECHNICAL REQUIREMENTS

2.1 PROCESS SAFETY REQUIREMENTS		
Item	**General requirements**	**Basic requirements**
1	**The applied solutions must ensure process safety and take into account the requirements of regulations and standards.**	1. The drawing up of technical documentation within the area of process safety requires the author to consider applicable state regulations, and internal regulations of ORLEN S.A. It is also acceptable to use API and NFPA standards. 2. For the proposed facility location, the design documentation should consider toxic, explosive, and fire hazards resulting from external neighbouring facilities. 3. The various technical safety measures and technical solutions proposed in the design must consider the conclusions and recommendations of hazard analyses which had been conducted. 4. Hazard analyses should had been conducted based on the principles and the process hazard matrix applicable at ORLEN S.A. 5. The documentation of explosion hazard zones, and the Explosion Protection Document should be developed based on the rules applicable at ORLEN S.A. specified in internal regulations. 6. The technological process should ensure total safety of facility's personnel and the environment. The placement of devices, equipment, and fittings should ensure easy and convenient access for the operating and service personnel. 7. The relative placement of equipment within the system should consider: • the fire-explosive nature of the substances stored in it, • the modes of filling, and the process flows between process units, • general operating conditions • the possibility of the domino effect. 8. The devices must be equipped with verification and measurement elements, cut-off valves, locking systems, and systems protecting their supporting structures against external fire. 9. All locking systems that influence the safety of the process being conducted may be designed and selected in such a way to meet the required Safety Integrity Level resulting from the conducted analyses based on the rules and the hazard matrix applicable at ORLEN S.A. 10. Technological systems and devices supplied with nitrogen or air should be connected via pipelines to the manifold in a manner preventing any pollution of the manifold pipelines with hazardous media. 11. For supplying facilities with nitrogen or air, their connection with pipelines and devices must be developed in accordance with the principles applicable at ORLEN S.A. 12. The area the facility will be erected should include a sealed concrete plate ensuring run-off of possible spills of hydrocarbons or other hazardous media to the industrial sewer system. 13. Pipelines must be painted and marked as stated in the

		principles applicable at ORLEN S.A. 14. Flange connections of pipelines with toxic media, acids, and lye must be equipped with bands protecting against release of media to the surroundings. 15. The routing of pipelines on pipe racks to and from the facility should consider: – the fire-explosive nature of the media transported in them, – the possibility of explosive atmosphere, – flows and temperatures of the media transported in neighbouring pipelines, – ability to prevent the domino effect in case of leaks. 16. The temperature of a medium transported via pipe rack/ditch to and from the facility should not exceed the temperature of spontaneous combustion.

3. FIRE SAFETY TECHNICAL REQUIREMENTS

3.1 Fire protection requirements for the Production Facility and the Fuel Terminal in Płock		
Item	**General requirements**	**Basic requirements**
1	**Guidelines for fire protection systems for new and modernized installations from the Company Fire Brigade of ORLEN S.A.**	1. The guidelines apply to fire protection systems including fire alarm systems, gas detection systems, extinguishing control systems (gas extinguishing systems, sprinkler system, water curtains) for new and modernized installations. 2. Control panels of the aforementioned fire protection systems must have a certificate of admittance of the CNBOP Center for Scientific Research on Fire Protection. 3. Control panels of the aforementioned fire protection systems must be addressable and have physical communication ports to connect with the existing Transmission System for Fire Alarms and TORUS Corruption Signals. 4. The communication protocol must provide summary information about the system status and status information of all addressable elements. 5. The maker (contractor) of the system provides as-built documentation in an electronic version with drawings of the location of all addressable system elements in the AutoCAD (DWG) format and a full list of addressable system elements with unambiguous descriptions and numbering. 6. The system contractor provides drawings in AutoCAD (DWG) format, including the infrastructure of the plot on which the given system is located (roads, flyovers, buildings, important technological objects, e.g. tanks, reactors, furnaces, columns, apparatus) accepted by the Company Fire Brigade.
2	**Guidelines for monitoring and visualization of signals in the Company Fire Brigade of ORLEN S.A.**	1. UTA3001 devices operating in the "Transmission of Fire Alarms and TORUS Damage Alarms" system are used to monitor signals in the Company Fire Control Department. 2. UTA3001 devices are dedicated to monitoring signals from fire protection systems. including fire alarm systems, gas detection systems, extinguishing control systems (gas extinguishing systems, sprinkler systems, water curtains). 3. Communication between the UTA3001 device and the fire system control panel is carried out according to its own protocol of the given system (PMC-4000 in the case of Polon 4000 series, ISP / ISP-IP in the case of Schrack Integral / Integral IP) or according to the Modbus RTU / TCP protocol through the physical port RS-232/422/485/ Fire control panel Ethernet 4. A maximum of 3 fire panels can be connected to a single UTA3001 device implementing communication in accordance with one of the above-mentioned protocols (PMC-4000, ISP / ISP-IP, Modbus RTU / TCP). 5. The UTA3001 devices operate in a fiber loop using single-mode fibers, whereby a single UTA3001 device requires 4 optical fibers to communicate with adjacent UTA3001 loop devices. 6. A Fire Alarms Receiving Station - SOAP2501 – operates at Company's Emergency Management Point, serving as a monitoring centre of signals coming from firefighting systems, and transferring them to Network Visualisation and Decision Aiding System of Fire Fighting Unit, including servers and operating workstation panels.

		7. In the scope of deliveries for monitoring and visualization purposes in the Factory Fire Brigade, the UTA3001 device should be provided for monitoring the designed fire protection system on the object, inter-optical fiber optic cabling to enable connecting the designed UTA3001 device to the fiber optic loop (usually connecting to the nearest node of the TORUS transmission network) and updating data and configuration of SOAP2501 Fire Alarm Receiving Station and the Network Visualization and Decision Support System SSWD in the Company Fire Brigade . 8. Within the scope of operational and maintenance recommendations it is necessary to include in the projects information, that the UTA3001 device installed at the facilities require periodic maintenance inspections performed at the expense of the owners of the facilities for which they were installed during the implementation of individual investments, in order to ensure safe and long-lasting operation. Inspections should be carried out at least once a year.
3	**Guidelines for the transmission of control signals from the Company Fire Brigade of ORLEN S.A.**	1. Additional UTA3001 devices operating in the Transmission System of Fire Alarms and TORUS Corruption Signals are used to transmit control signals from the Company Fire Control Station. 2. Additional UTA3001 devices are dedicated to the transmission of control signals (in parallel with the local control) for valve control units / fixed equipment valves / fire extinguishing systems. 3. Communication between UTA3001 and the system / controller (connected directly to valves) takes place using the MODBUS RTU protocol on the physical RS485 port. 4. In the TORUS system, the devices for functional monitoring are separated from the devices used for the transmission of control signals. Only fiber-optic communication infrastructure is common. 5. On the side of the Company Fire Control Station, there is an additional TORUS system station with a user interface for issuing control commands. This station is autonomous (separate from the Fire Alarm Receiving Station). 6. In terms of optical fibers, the guidelines remain unchanged - such as currently for the TORUS system. 7. In case of simultaneous monitoring and controlling the device with the same controller, for safety reasons, the device controller should be equipped with two independent MODBUS ports. 8. In the scope of deliveries for the purposes of control from the Company Fire Brigade, it is necessary to design a UTA3001 device dedicated for controlling devices on the site and updating data and configuration of the TORUS system station for issuing control orders installed at the Company Fire Control Station. 9. Within the scope of operational and maintenance recommendations it is necessary to include in the projects information, that the UTA3001 device installed at the facilities require periodic maintenance inspections performed at the expense of the owners of the facilities for which they were installed during the implementation of individual investments, in order to ensure safe and long-lasting operation. Inspections should be carried out at least once a year.

4	**When designing, in addition to state regulations, the standards and good practices of ORLEN S.A. should be taken into account.**	1. The Act of 24 August 1991 on fire protection. (Journal of Laws of 1991,no. 81, item 351 as amended). 2. The Act of 7 July 1994 Construction Law. (Journal of Laws of 1994 No. 89, item 414, as amended) • Required use of "Guidelines for fire-proofing in the field of steel structures for newly designed and modernized production installations of ORLEN S.A. " 3. Act of 30 August 2002 on the conformity assessment system (Journal of Laws of 2002 No. 166, item 1360, as amended). 4. The Act of 21 May 2010 amending the act on construction products and the act on the conformity assessment system (Journal of Laws of 2010 No. 114, item 760, as amended) 5. Regulation of the Minister of the Internal Affairs and Administration of September 17, 2021 on the reconciliation of the plot or area development design, architectural and construction design, technical design and design of a fire protection device in terms of compliance with fire protection requirements (Journal of Laws 2021, item 1722) • In addition to agreeing the documentation with a fire safety expert, projects (construction, technical related to influencing fire safety and chemical safety) should be submitted for an opinion to the Chief Officer of the Company Fire Brigade. • Design documentation submitted for review must be in Polish, • Fire protection conditions should be a separate document / chapter of documentation 6. Regulation of the Minister of Internal Affairs and Administration of 7 June 2010 on fire protection of buildings, other construction objects and areas (Journal of Laws No. 109, item 719, as amended): • The equipment with portable and mobile fire extinguishers must comply with internal regulations of ORLEN S.A. contained in the Comprehensive Prevention System. At the ORLEN S.A. it is assumed as a rule that one portable firefighting unit should contain at least 6 kg extinguishing agent (in the case of powder extinguishers) or 5 dm^3 (for CO_2 fire extinguishers). • Facilities must own a Fire Safety Instructions developed in accordance with the relevant internal organizational act in force at ORLEN S.A. • All modernized cubature objects should be equipped with the Fire Alarm System connected to the Company's Fire Alarm Station of the Company Fire Brigade, • Technical rooms (server rooms, UPS, contactor rooms and other having influence on the functioning of the installation, in which there are no permanent workstations) should be secured with Fixed Gas Fire Extinguishing Devices; the method of securing must be agreed with the Chief Officer of the Company's Fire Brigade of ORLEN S.A. • The arrangement of detectors for the leakage of toxic and explosive substances and fire detectors should ensure that the hazard is identified as soon as possible. The number of detectors should be optimal for the possibility of minimizing threats. • Fire-fighting installations should be designed based on PN (Polish Norms) or the best engineering knowledge

(recommended VdS guidelines),
- Technological equipment should be equipped with fixed / semi-permanent fire extinguishing / security devices,
- Under the contract, technical and operational documentation of fire-fighting equipment should be provided, containing, among others, detailed rules for inspection and maintenance of installed fire-fighting equipment and the required qualifications of persons performing these activities. The documentation must be provided in Polish.

7. Regulation of the Minister of Internal Affairs and Administration of 20 June 2007 on the list of products serving to ensure public safety or protection of health and life and property, as well as the rules for issuing release of these products for use (Journal of Laws of 2007 No. 143, item 1002, as amended),
   - All devices for fire and chemical safety must have the appropriate approvals required by Polish law
8. Regulation of the Minister of Interior and Administration of 24 July 2009 on fire water supply and fire roads. (Journal of Laws of 2009 No. 124, item 1030):
   - The amount of water for external extinguishing should be calculated taking into account the size of the danger zone, the tactical and technical parameters of the equipment being in use of Company Fire Brigade of ORLEN S.A. and the amount of water necessary to supply permanent and semi-permanent fire-extinguishing and fire-safety installations on the facility's equipment,
   - To provide water supply for external fire extinguishing, use ground hydrants with a minimum diameter of DN 100. Hydrants protected against breaking should be used in places agreed with the Ordering Party.
   - Distance between hydrants should not exceed 50 m.
   - It is recommended to use water intake points with increased intensity for water supply purposes - details of such solution should be agreed with the Company Fire Brigade, the Power Generation Area and Water and Wastewater Management Area.
   - Water network for fire-fighting purposes on the installation site must be a ring system.
   - The recommended designed width of fire roads is a minimum of 6 m.
   - The height of flyovers above the road can not be lower than 4.5 m.
9. Regulation of the Minister of Infrastructure of April 12, 2002 on technical conditions that should be met by buildings and their location. (Journal of Laws of 2002 No. 75, item 690, as amended):
   - The industrial facility should be equipped with Fire Protection Circuit Breakers (PWP).
   - If it is not possible to equip the facility with PWP, replaceable solutions should be used in accordance with the Polish law.
10. Regulation of the Minister of Development of 29 January 2016 on the types and quantities of hazardous substances located in the Production Facility, which decide on classification of the PF for a PF with an increased or high risk of a serious industrial accident (Journal of Laws of 2016, item 138).
11. Regulation of the Minister of Economy of 21 November 2005 on

		technical conditions to be met by bases and liquid fuels stations, long-distance transmission pipelines for transporting crude oil and petroleum products and their location (Journal of Laws of 2005 No. 243, item 2063, as amended). 12. Regulation of the Minister of Economy of 18 September 2001 on the technical conditions for technical inspections to be carried out by non-pressurized and low-pressure tanks for storing flammable liquids (Journal of Laws of 2001 No. 113, item 1211, as amended). 13. Polish Norms, 14. Internal organizational acts included in the Comprehensive Prevention System of ORLEN S.A.
3.2. Fire protection requirements for the Fuel Terminals outside Płock.		
Item	**General requirements**	**Basic requirements**
1	**Guidelines for transmitting SSP and SUG control signals.**	1. Guidelines for fire alarm systems (SSP), control of fixed fire extinguishing systems (SUG) for new and modernized production installations. 2. The control panels of fire alarm and fire control systems must be certified by the Scientific Center for Fire Protection Research - CNBOP. The SSP and SUG system control panels must be addressable systems and have communication ports to connect with the fire alarms and fault signals transmission system existing at the Terminal. The contractor provides an object-based alarm transmission device and provides a link in accordance with the standard adopted in a given Terminal. The connection between the system's central control and the alarm transmission device should be made without additional non-tested intermediary devices. The communication protocol must provide collective information about the control panel status and status information of all addressable elements. The design should be prepared and agreed with the Company Fire Brigade and the project User. System contractor provides as-built documentation in an electronic version with drawings of location of addressable elements in AutoCAD * .dwg format and a list of all system elements with unambiguous descriptions and numbering. The contractor ensures to configure the system with the existing one at the Terminal.
2	**Proposal of requirements to be considered when designing new investments. In addition to the requirements contained in the following provisions, the standards and good practices of ORLEN S.A. should be**	In addition to the documentation agreed with the expert on fire protection, projects (construction, technical affecting fire and chemical safety) should be submitted for approval in the Company Fire Brigade. • Design documentation submitted for review must be in Polish, • Fire protection conditions should be a separate document/ chapter of documentation. • The provision of portable and mobile fire extinguishers must comply with the internal regulations of included in the Fire and Chemical Safety Regulation of ORLEN S.A. (Annex no. 1). • Under the contract, technical and operational documentation of fire-fighting equipment in Polish should be provided, containing, among others, the principles of inspection and maintenance of installed fire-fighting equipment, • In connection with the modernization, expansion or reconstruction of Terminal's facilities, a full update of the existing Fire Safety Manual should be performed in accordance with the relevant Regulation, • Newly constructed buildings should be equipped with the Fire

	taken into account. (additional requirements of ORLEN S.A. are included under each state regulation)	Alarm System, • Technical rooms (server rooms, UPS, contactor rooms and other having influence on the functioning of the installation, in which there are no permanent workplaces) should be secured with Fixed Gas Fire Extinguishing Devices; the method of securing must be agreed with the Chief Officer of the Company Fire Brigade, • The arrangement of detectors for the leakage of toxic and explosive substances and fire detectors should ensure that the hazard is identified as soon as possible. The number of detectors should be optimal for the possibility of minimizing threats. • Firefighting installations should be designed based on regulatory requirements, PN (Polish Norms) or the best engineering knowledge (recommended VdS guidelines), • Apparatuses, subassemblies constituting a critical function for the installation should be equipped with fixed/ semi-permanent fire extinguishing/ security devices, • All devices for fire and chemical safety must have the appropriate approvals required by Polish law, • To provide water supply for external fire extinguishing, DN 100 ground hydrants should be used, • The distance between hydrants should not exceed 50 m, • Fire water network on the installation site must be a ring system, • Fire roads should be designed with a width of 6 m, the height of flyovers above the roads can not be lower than 4.5 m, • Facilities should be equipped with Fire Protection Circuit Breakers.

Part B - DIRECTIVES, PROVISIONS, STANDARDS

Item	General requirements	Basic requirements
1.	**Directives of new and global approach**	During design, all current rules (national, EU) in force at that time, standards and requirements resulting from technical progress related to the subject of design should be taken into account.
2.	**Occupational health and safety directives**	During design, all current rules (national, EU) in force at that time, standards and requirements resulting from technical progress related to the subject of design should be taken into account.
3.	**National regulations in the field of occupational health and safety, process safety and fire safety, and the regulations of the Comprehensive Prevention System (KSP) of ORLEN S.A.**	During design, all current national regulations in the field of occupational health and safety and the requirements of the Comprehensive Prevention System of ORLEN S.A. should be taken into account. specified in the document **SAFETY STANDARDS OF ORLEN S.A. Occupational Health and Safety design guidelines for contractors.**

Annex no. 1

RULES FOR EQUIPPING ORLEN S.A. FACILITIES IN HANDHELD FIREFIGHTING EQUIPMENT

1. Rules for equipping ORLEN S.A. facilities in handheld firefighting equipment.

1.1 The type, quantity and location of handheld firefighting equipment for newly designed facilities is determined by a project agreed by an expert on fire safety and approved by the Chief Officer of the Company Fire Brigade of Orlen S.A., excluding petrol stations.
1.2 The type, quantity and location of handheld firefighting equipment for existing facilities is specified in the Fire Safety Instruction prepared by an authorized person approved by the Chief Officer of the Company Fire Brigade of Orlen S.A., excluding petrol stations.

2. General rules.

All Company's facilities should be equipped with handheld firefighting equipment adapted to extinguishing these groups of fires that may occur in the facility.
Minimal weight of one unit of fire extinguishing agent for handheld firefighting equipment is:
6 kg (in the case of powder extinguishers) or 5 kg (in the case of CO_2 extinguishers), and should be located:

- in fire zones PM with fire load density Qd> 500 MJ / m^2 and included in the category of thread to people - ZL I and ZL III - for every 250 m^2 area,
- in other fire zones, with the exception of zones classified as category of thread to people - ZL IV - for every 500 m^2 of area,
- be equipped with a unit of equipment for every 30 engines,
- smoking rooms should be equipped with at least one unit of firefighting equipment.

Minimal weight of one unit of fire extinguishing agent for mobile firefighting equipment is:

- 25 kg (in the case of powder extinguishers) or 20kg (in the case of CO_2 extinguishers) located on the level "0",
- 12 kg (in the case of powder extinguishers) or 5 kg (in the case of CO_2 extinguishers) located on other levels,

provided for production installations.
Each time it is necessary to consider equipping the production installations with the AP 250 powder aggregate. Quantity and location require the approval of the Chief Officer of the Company Fire Brigade.
General rules for the deployment of handheld firefighting equipment:

- it should be placed in places easily accessible and visible.,
- in places not exposed to mechanical damage and the operation of heat sources,
- access to the equipment should be at least 1 m wide,
- the distance from any place where a person can stay, to the nearest fire extinguisher should not exceed 30 m.

In cubature objects, handheld firefighting equipment should be located:

- at the entrances to buildings,
- in stairwells,
- at crossings and corridors,
- outside rooms,
- in multi-story facilities, the equipment should be placed in the same places on each floor, if the existing conditions allow it.

On production installations, handheld firefighting equipment should be located:

- in places protected against adverse weather conditions,
- in the vicinity of places constituting as the greatest fire hazard from the technological point of view,
- at the technological levels (platforms) equipment should be placed in the same places at each level, if the existing conditions allow it.

3. Detailed rules for equipping technological facilities with handheld firefighting equipment:

3.1.1. Fill and drainage fronts.

a) to secure railway fill and drainage fronts - 1 mobile fire extinguisher 25 kg with powder adapted to extinguish the ABC fire group for each 25m of loading or unloading railway front,

b) to secure car tank fillers - 1 mobile fire extinguisher 50 kg (or 2 mobile fire extinguishers 25 kg each) and 2 powder fire extinguishers 6 kg with powder suitable for extinguishing ABC fire groups, for each pour station,

c) in the case of electric motors, in addition - two CO_2 fire extinguishers (min. 5 kg) suitable for extinguishing BC fire groups for every 5 electric motors.

3.1.2. Pumping stations and filling rooms for petroleum products.

a) in the pumping stations and rooms for filling of liquid I and II class, it is necessary to ensure:

- one mobile fire extinguisher 50 kg for every 300 m^2,
- one 6 kg powder extinguisher for every 100 m^2,
- in the case of electric devices or motors – in accordance with 3.1.1.c.

3.1.3. Parking stands for road tankers.

a) 1 mobile fire extinguisher 50 kg (ABC) for every 10 parking stands,

b) 2 powder extinguishers 12 kg (ABC) for each 5 parking stands,

3.1.4. Open landfills in unit packaging.

a) one mobile fire extinguisher 50 kg for each 600m^2 of landfilled area,

b) 2 powder fire extinguishers (min. 12 kg), for each 300m^2 of landfill site.

3.1.5. Other construction objects

a) Vapor recovery installation - one 50 kg mobile fire extinguisher and one 6 kg powder extinguisher,

b) the product receiving node from a long-distance pipeline (including cleaning chambers) - one 50 kg mobile fire extinguisher and two 6 kg powder fire extinguishers,

c) devices and installations constituting nodes of sewage treatment plants - 1 mobile fire extinguisher 50 kg and 1 powder extinguisher 6 kg.

3.1.6. Motor vehicles

Every car used in the ORLEN S.A. must be equipped with one powder extinguisher (ABC) with a minimum weight of 1 kg. Vehicles equipped with additional equipment (e.g. cranes, excavators, etc.) should have a second unit of firefighting equipment with a minimum weight of 6 kg designed to protect this equipment.

Transport units intended for the carriage of hazardous goods must be equipped in accordance with the ADR agreement provisions with the following handheld firefighting equipment:

Permissible total weight of the transport unit	**The minimum number of fire extinguishers**	**Minimum total capacity per transport unit**	**Fire extinguisher to extinguish engine or cabin fire. At least one with a minimum capacity of:**	**Requirements for an additional fire extinguisher. At least one fire extinguisher shall have a minimum capacity of:**
≤ 3,5 tons	2	4kg	2kg	2kg
> 3,5 tons ≤7,5 tons	2	8kg	2kg	6kg
>7,5 tons	2	12kg	2kg	6kg
The volumes refer to the extinguishing powder (or the equivalent volume of other appropriate extinguishing agents).				

3.1.7. Forklifts

Forklifts, regardless of the type of drive, must be equipped with a minimum of one powder extinguisher (ABC) with a minimum extinguishing agent weight of 4 kg.

4. Marking of the location of handheld firefighting equipment.

The location of handheld firefighting equipment should be marked in accordance with the applicable standard. The signs must have a CNBOP approval certificate and photoluminescent features. The marks should be placed in such a way as to ensure their maximum visibility, and if the marking of the location of the handheld firefighting equipment is poorly visible, it is reasonable to consider the marking from two sides.

5. Final remarks

The quantities of handheld firefighting equipment given below are minimum quantities. If there is a need to provide firefighting equipment for objects other than the aforementioned type, the quantity and location of handheld firefighting equipment is accepted by the Chief Officer of the Company Fire Brigade based on the documents referred to in point 1.

Fire extinguishers shall be provided with a seal confirming that they have not been used.

In order to ensure the correct operation of fire extinguishers, they should be subject to technical inspections and maintenance operations in accordance with the applicable national standards. They should be marked with a mark of compliance with a standard recognized by the competent authority and with a sign indicating the date of the next inspection.

The size of the characters should be at least:

GRAPHIC SYMBOL	NAME OF THE MARKING	DIMENSION (production installation)	DIMENSION (other objects)
	**HANDHELD FIRE EXTINGUISHER**	**400x400 mm**	**100x100 mm**
	**MOBILE FIRE EXTINGUISHER**	**400x400 mm**	**150x150 mm**
	**FIRE PROTECTION EQUIPMENT KIT**	**400x400 mm**	**150x150 mm**
	**FIRE BLANKET**	**400x400 mm**	**150x150 mm**