



## **REQUIREMENTS FOR**

- **OCCUPATIONAL SAFETY AND HEALTH**
- **PROCESS SAFETY,**
- **FIRE SAFETY,**
- **CHEMICAL SAFETY,**
- **ENVIRONMENTAL PROTECTION**

**IN PROCESSES RELATED TO DESIGN, CONSTRUCTION  
/ CONSTRUCTION EXTENSION / RECONSTRUCTION /  
ADDITIONAL CONSTRUCTION / CHANGE OF THE USE  
OF FACILITIES AT ANWIL S.A.**

Włocławek, November 2023

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 2

## TABLE OF CONTENTS:

## PAGE

I.	PURPOSE OF APPLYING THE GUIDELINES	3
II.	SCOPE AND REQUIREMENTS FOR APPLYING THE GUIDELINES	3
III.	MANAGEMENT SYSTEMS IN PLACE	4
IV.	OCCUPATIONAL SAFETY AND HEALTH REQUIREMENTS	5
V.	PROCESS SAFETY REQUIREMENTS	12
VI.	FIRE AND CHEMICAL SAFETY REQUIREMENTS	15
VII.	ENVIRONMENTAL PROTECTION REQUIREMENTS	35

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 3

## I. PURPOSE OF APPLYING THE GUIDELINES

The requirements for occupational safety and health, process safety, fire safety, chemical safety and environmental protection were developed for the processes of design, construction / construction extension / reconstruction / additional construction / change of the use of facilities at ANWIL S.A.

## II SCOPE AND REQUIREMENTS FOR APPLYING THE GUIDELINES

1. Issues related to occupational safety and health, process safety, fire safety, chemical safety and environmental protection must be considered at all stages of a facility's creation and "lifespan," to be exact at the following stages:

- planning,
- search and analysis of the location,
- design,
- construction,
- implementation, assembly and commissioning,
- testing,
- production and operation,
- withdrawal from service or decommissioning

Therefore, already at the stage of developing the concept of construction / construction extension / reconstruction / additional construction / change of the use of a facility, and then in the developed documentation, the following should be taken into account:

- issues related to the safety of people, property and environmental protection,
- requirements arising from applicable Polish national and EU legal provisions and standards and internal organisational regulations (IOR), as well as good practice, BAT and state of the art.

2. The design should include identified, relevant and potential:

- a) safety risks, including risks to human life and health and the environment, b) environmental requirements and constraints, which may occur during construction, implementation, assembly and commissioning, testing, production, operation (use, maintenance, renovation), sampling (of semi-products, finished products, auxiliary means) for testing during technological commissioning and during operation, decommissioning and disposing of the facility, as well as ways to protect against hazards.

3. As part of the project-related activities, the Designer is required to develop:

- a) criteria for assessing whether the facility is safe for humans and the environment and whether there are no constraints from the Polish national and EU legal provisions in the course of planning, site exploration and analysis, design, construction, implementation,

<p align="center"><b>Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board</b></p>	<p align="center"><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL</b></p>	<p align="center">Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 4</p>

assembly, commissioning, testing, production and operation, sampling (of semi-products, finished products, auxiliary means) for testing during technological commissioning and during operation, withdrawal from service and decommissioning of the facility,

- b) principles for applying safety measures for humans and the environment in all the stages of the creation and "lifespan" of a facility,
- c) principles for assessing and reducing risks to people and the environment during construction, testing, implementation, assembly, commissioning, operation (use, maintenance, renovation), decommissioning or disposing of the facility and to analyse the design solutions adopted on the basis of these criteria, to present this analysis in the documentation prepared, and to compile summaries of the aforementioned criteria divided into the following stages: planning, site search and analysis, design, construction, implementation, assembly, commissioning, testing, production and operation, decommissioning and liquidation.

- 4. The design of the facility is to meet the criteria in question at an acceptable level as regards safety, as well as reliability and quality criteria in accordance with the relevant regulations and standards: internal ANWIL S.A., Polish national and international ones as related to the facility.
- 5. The facility should operate with the consideration of quality requirements and requirements to optimise the protection of health and life of people, property and the environment by keeping risks at a reasonable and acceptable level.

### III. MANAGEMENT SYSTEMS IN PLACE

- 1. In the process of design, construction / construction extension / reconstruction / additional construction / change of the use of a facility, it should be taken into account that ANWIL S.A. has a Process Safety Management System in place, in accordance with the Order on: introduction and application of the Process Safety Management System at ANWIL S.A., which must be strictly observed.  
In accordance with the adopted and functioning Process Safety Management System:
  - 1.1 The safety of our employees and representatives of all entities cooperating with ANWIL S.A. is a top priority for the Company.
  - 1.2 The overriding goal is for the facilities of ANWIL S.A., including production and auxiliary installations, warehouses and transport routes for raw materials, semi-finished products and finished products to be safe workplaces, and the goal the Company is aiming for is zero: accidents to employees and contractors, occupational diseases, fires and breakdowns.
- 2. In the process of design, construction / construction extension / reconstruction/ additional construction / change of the use of a facility, it should be noted that the Company has implemented a certified Integrated Management System

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 5

in accordance with the requirements of ISO standards 9001, 14001, 45001. Within the framework of the adopted and functioning Integrated Management System, ANWIL S.A. implements the priorities specified in the Integrated Management System Policy based on the foundation which the ORLEN Group Values are, including but not limited to:

- 2.1 Compliance with legal provisions and other environmental and health and safety requirements.
- 2.2 Identification of factors which have, or could have, an impact on quality, the environment and occupational safety and health.
- 2.3 Undertaking process and health and safety improvements and projects reducing environmental impact.
- 2.4 Preventing injuries, accidents at work, occupational diseases and near misses.

The implemented System is compliant with the highest international management standards and is a daily practice in the Company's operations aimed at serving customers in a professional manner and maintaining the highest health, environmental and safety standards.

#### IV. OCCUPATIONAL SAFETY AND HEALTH REQUIREMENTS

##### 1. Buildings, structures, materials, equipment, technical equipment of the facility

- 1.1. Buildings, premises, workstations and the working environment must be designed in accordance with regulatory and ergonomic requirements in line with the latest developments in science and technology.
  - 1.1.1. A facility with work, hygiene and sanitary rooms must meet the requirements for occupational safety and health, fire safety, chemical safety, explosion safety and environmental protection.
  - 1.1.2. The construction of buildings housing workplaces must be performed on the basis of designs which factor in requirements for occupational safety and health, as well as fire safety, chemical safety, explosion safety and environmental protection.
  - 1.1.3. The design documentation (detailed and as-built documentation) must be agreed with the Occupational Safety and Health, Fire Safety experts and, where appropriate, the Sanitary and Hygiene Officer. Documentation submitted for an opinion must be in Polish.
  - 1.1.4. In the case of scaffolding assembly based on an individual design, the design documentation must include a descriptive part, a drawing part and calculations. In addition, the design must be agreed with the Occupational Safety and Health Officer.
  - 1.1.5. In the case of submitting subsequent revisions of the design documentation for an opinion, all changes introduced in relation to the previous version must be introduced into the document in the change tracking mode or in a manner allowing for their identification (e.g. bold/underlined font).

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 6

1.1.6 Acceptance documentation (including but not limited to inspection reports, measurements, tests, etc.) as well as declarations and certificates provided must be in Polish.

1.1.7 Ensure that the work rooms are suitable for the type of works to be performed and the number of employees engaged.

1.1.8. The floor tiles in the rooms must have a slip resistance class of no less than R-10 selected according to the German standard DIN 51130. In such areas where the floor may be wet, a higher slip resistance class than R-10 is recommended.

1.1.9 All permanent work rooms must have natural and artificial lighting in accordance with the requirements of the applicable standards.

1.1.10. The smoking room must be organised in accordance with the internal organisational regulations (IOR) in force.

1.1.11. All permanent work rooms, rest premises and other premises indicated by the authorised representatives of ANWIL S.A., e.g. service cabins, must come with an air-conditioning system. Air conditioners should be installed with ergonomic principles in mind so that the airflow is not directed straight at the employee's workstation.

1.1.12. Where required by Polish law, install eyewashes and safety showers. Such eyewashes and safety showers must be equipped with acoustic and light signalling, and information on tripping should be transmitted to the DCS. The materials of which the eyewashes and safety showers will be made must be suitable for the environment in which they will be installed and connected to the drinking water network. A distinction should be made between indoor and outdoor safety showers (equipped with a heating system).

The safety showers and eyewashes must be no more than 20 m away in a horizontal line from positions where there is a risk of an employee being doused with corrosive agents or clothing catching fire on an employee.

Note! Access to the device must be free of obstacles such as stairs, barriers, etc.

In accordance with PN EN 15154-5, the water temperature in the eyewashes and safety showers should be maintained between 15°C and 25°C. The devices must operate reliably irrespective of the weather conditions. A water pressure in the range of 2-4 bar is required for the emergency devices.

- Eyewash supply – 1/2"
- Emergency shower supply – 1"
- Combined device supply – 1 ¼"

The water flow rate for the eyewash is 6 L/min, while the water flow rate for the emergency shower is 60 L/min.

Each emergency device must be supplied with a safety mark compliant with ISO 3864-1, to mark the location of the emergency device.

The shower should be designed in a manner that it is possible for one person to activate it immediately without assistance from others within 3 seconds. The uninterrupted supply of water to the safety shower with constant flow is 15 minutes.

<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy No.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 7</p>

- 1.1.13. Floors, ceilings, shelves, platforms and storage spaces must be designated and marked with information on the permissible load. Storage areas, routes for trolleys or other means of transport and pedestrian traffic must also be marked and described in the buildings.
- 1.1.14. The installation must be designed so that employees operating it are not exposed to abnormal values of factors harmful to health.
- 1.1.15. All manuals, including ones on occupational safety and health, on the job, fire safety, technology and operation must be in Polish.
- 1.2. Pipes must be painted and marked in accordance with the internal regulations applicable at ANWIL S.A. Machines and other technical devices used must ensure safe and hygienic working conditions and take ergonomic principles into account.
- 1.3. Proper equipment must be in place at sampling locations to ensure safe and hygienic sampling conditions for testing, with particular regard to the physical and chemical properties of samples to be taken, during both technological commissioning and operation. Such sampling locations must be constructed in accordance with the design documentation agreed and approved by ANWIL S.A.
- 1.4.1. The industrial facility of ANWIL S.A. must be designed in such a manner that, in addition to the performance of technological, technical, organisational and economic functions:
  - a. The essential requirements have been met as specified in the regulations implementing the Polish Act dated 30 August 2002 on the conformity assessment system (Journal of Laws of 2023, item 215) or the relevant EU directives as regards installation facilities (if such requirements were established) and their technical and operational documentation, as well as safety and health and fire protection requirements specified in the relevant, generally applicable legal provisions and internal organisational regulations of ANWIL S.A.
  - b. The required safety and reduced risk to human health is ensured during the construction, implementation, assembly and commissioning, testing, operation and decommissioning of the industrial facility of ANWIL S.A.
- 1.4.2 It is not permissible to equip workplaces with machines and other technical devices that do not meet the requirements for conformity assessment.
- 1.4.3. Guards used on machines must prevent direct access to the danger zone. Incomplete guards (made of mesh, perforated metal, bars, etc.) must be located at such a distance from hazardous components that, given the size and shape of the openings, it is not possible to directly touch these components. The safety distances are defined by the Polish Standards. Fixed guards must be mounted in such a manner that they can only be opened or removed using tools.
- 1.4.4. The minimum and maximum values must be marked on pressure gauge dials.

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 8

- 1.4.5. Aside from respective machines and devices, entire production lines are subject to the assessment of conformity with the essential requirements.
- 1.4.6. The requirements for machines and other supervised technical devices are subject to technical supervision regulations and must be designed, manufactured and installed pursuant to the requirements contained in these regulations.
- 1.4.7 All accesses to service, measurement and control devices (e.g. instrumentation and control devices) and valves must be provided by means of fixed access elements (e.g. platforms). Such fixed access elements must not impede other works, e.g. renovation. They must be easily removable.
- 1.4.8. All passageways, accesses to tanks, valves, instrumentation and control equipment, permanent and temporary work rooms, storage rooms, ladders, etc. must be paved.
- 1.4.9. All valve adjustment components must be installed in such a manner as to provide ergonomic access to adjust each valve. The aforementioned elements must be directed towards the operating platform.
- 1.4.10. The safeguarding of machines and other technical devices in various disciplines is to be designed and built to protect employees against:
  - a. injuries,
  - b. exposure to hazardous chemicals,
  - c. electric shock,
  - d. excessive noise,
  - e. effects of mechanical vibration,
  - f. radiation (including ionising, electromagnetic radiation), harmful effects of the working environment.
- 1.4.11. All machines and other technical devices (including emergency devices) must come with operating manuals in Polish.
- 1.4.12. Railings on fixed platforms, toe boards and ladders must be painted yellow.
- 1.4.13. Surfaces raised more than 1.0 m above the floor or ground level, where employees may be present as they work, or used as passageways, must come with guardrails consisting of protective railings placed at a height of at least 1.1 m and curbs at least 0.15 m high. Two crossbars should be placed between the handrail and the curb every 1/3 of the height of the handrail or the space should be filled in such a manner that people cannot fall out. This requirement does not apply to staircases in the administrative and office buildings.
- 1.4.14. Ladders must comply with the requirements contained in EN ISO 14122-4. Handrails should be installed on ladders for greater safety when ascending to the service platform level.
- 1.4.15. Ladders must be fitted with self-closing gates, which must come with a handrail, centre crossbar and curb. Handrails, crosspieces and curbs must be placed in the gate at the same height as in the adjacent balustrade segments (EN ISO 14122-3 requirement).



<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 9</p>

- 1.4.16. Hoist beams must have a defined (described) allowable working load (AWL). Such hoist beams must be painted in a colour different from that of the building structure.
- 1.4.17. Any changes of level where there is a risk of tripping, falling (e.g. thresholds, steps, protruding plant parts, low ceilings, etc.) should be marked with safety colours (yellow-black stripes, 45° slope).
- 1.4.18. Passageways between machines and other devices or walls intended only for the operation of such devices must be at least 0.75 m wide; if these passageways are used for two-way traffic, they must be at least 1 m wide.
- 1.4.19. In storage facilities and all other facilities where damage to devices such as fire extinguishing systems, control cabinets, electrical cabinets, repair sockets, etc., may occur, bumpers should be installed to prevent the devices from being damaged by moving vehicles.
- 1.4.20. The storage facilities must be equipped with spherical mirrors – in areas of limited visibility.
- 1.4.21. The unloading/loading areas of road tankers, rail tankers and wagons must be equipped with fall protection devices (belay systems or other technical solutions to protect against falls from height).
- 1.5. Materials and processes may be used only after the degree of harm has been established for the health of employees.
  - 1.5.1. Materials and processes posing particular risks to health and life may only be used after:
    - a. estimating the inherent risks and establishing the degree to which they are harmful to the health of employees in advance,
    - b. applying sufficient preventive measures.
- 1.5.2 Testing of the aforementioned materials and processes to determine the extent to which they are harmful to health may be conducted by authorised bodies pursuant to legal regulations within this scope.
- 1.5.3. Tests and measurements of the working environment must be conducted in accordance with the provisions contained in agreements/contracts. Only accredited laboratories may conduct and be commissioned with the performance of such tests and measurements of the working environment.
- 1.6. Risks to people and property must be reduced by selecting required safety measures.
  - 1.6.1. The safety measures designed for installation facilities and activities are intended to eliminate and/or reduce risks and hazards and are aimed at providing the highest level of safety that can possibly be achieved. The measures must ensure that employees and contractors alike protect their health and life.
  - 1.6.2. Each emergency device must be supplied with a safety mark compliant with ISO 3864-1, to mark the location of the emergency device.
- 1.6.3 Safety measures are intended to protect employees from hazardous and harmful factors present in the working environment.

<p><b>Area of Process</b>  <b>Safety</b>  <b>Prevention and</b>  <b>Occupational Safety and</b>  <b>Health Area, Environmental</b>  <b>Protection Office, IT Office</b>  <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b>  <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b>  <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b>  <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b>  <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b>  <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b>  <b>OF FACILITIES</b>  <b>AT ANWIL</b></p>	<p>Copy no.:  <b>A</b></p>
<p>Preparation date:  27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:</p>
		<p>Page: 10</p>

- 1.6.4. Safety measures must be designed, selected and located in such a manner as for employees operating the installation and the adjacent installations to not sustain unacceptable risks.
- 1.6.5. The safety measures are to be optimised – meaning that they are to ensure the highest possible level of safety reasonably achievable throughout the lifespan and proper functioning of the installation and its facilities.
- 1.6.6. The principle should be applied of giving priority to collective protection measures over individual protection measures.
- 1.6.7. The Contractor is obliged to provide daily Occupational Safety and Health Supervision and advice in the field of occupational safety and health, performed by qualified employees authorised and qualified in accordance with the Regulation of the Polish Council of Ministers dated 2 September 1997 on the occupational safety and health services. The Occupational Safety and Health Supervision must be ensured for all employees of the Contractor and all employees of its Subcontractors.
- 1.6.8 Roofs of newly constructed buildings should be fitted with a fall protection system. It should be remembered that priority is given to collective protection measures (protective balustrades).
- 1.7. Risks associated with using chemicals.  
For each construction / construction extension / reconstruction / additional construction / change of the use of an industrial facility at ANWIL S.A., the existing physical and chemical properties of such substances and/or mixtures as may be present at the industrial facility must be determined.
- 1.8. Industrial facilities are to be marked in accordance with the internal organisational regulations  
(IOR) applicable at ANWIL S.A. (above all else, they are to factor in the physical and chemical properties of substances and/or mixtures present on the premises and individual protection measures to minimise the risk of exposure for employees).
2. Service personnel of an industrial facility at ANWIL S.A., External Contractor The proper functioning of an industrial facility, including the "human-machine" interface, should be started early in the design of such an industrial facility, continued and taken into account in all the stages of the establishment and "lifespan" of this installation.
  - 2.1. The design must specify at least the minimum number of operating personnel and the competences required for them who, as they perform all the tasks planned for them, will ensure the safe operation of the industrial facility, above all else while performing particularly hazardous works.
  - 2.2. Employees who have experience gained while working at similar industrial facilities should, as far as practicable, actively participate in the design process of the industrial facility based on such rules as may be established by the Parties.
  - 2.3. The solutions used in the design are intended to support employees (including operators of production processes) in the performance of their tasks, duties related to the operation of the industrial facility in such a manner as to limit the potential consequences of erroneous operations or conduct in terms of occupational safety.

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 11

- 2.4 The design should include solutions to facilitate interactions between service personnel and devices and systems of the industrial facility.
- 2.5 The industrial facility should be designed in such a manner as to provide operation, maintenance, repair staff with: comprehensive information, ease of control but taking into account the requisite decision-making time as well as actions required at the time. The information necessary for the aforementioned persons must be comprehensible to the service personnel and provided and presented in a simple and unambiguous manner.
- 2.6 Gate valves and such valves as may require significant force or two persons to operate should be equipped with electric drives agreed with the authorised representatives of ANWIL S.A.
- 2.7 A system to prevent uncontrolled leakage (spill containment system) should be used at flanged connections and other locations where corrosive carriers may leak.
- 2.8 Connections to couplings/US hose ends intended for nitrogen should be of a design that prevents connection to other carriers.
- 2.9 The Contractor of the facility subject to construction / construction extension / reconstruction / additional construction is obliged to provide ANWIL S.A. with a list of types and quantities of substances and/or mixtures used and their safety data sheets (within the agreed timeframe)
- 2.10 Employees operating the industrial facility must have access to the requisite information :
  - a. to be capable of assessing the condition of the industrial facility under all conditions;
  - b. to operate within the limits set by the parameters of the industrial facility's systems and equipment, taking operational conditions and constraints into account;
  - c. to be capable of making it clear that the relevant safety systems are automatically activated when needed and that the relevant executive systems are working as intended;
  - d. to be capable of specifying the need and timing of the manual initiation of specific protective actions, if designed,
  - e. to know the hazards arising from the physical and chemical properties of substances and/or mixtures present at the facility and to have access to their safety data sheets,
  - f. to know hazards arising from the physical and chemical properties of substances and/or mixtures present on neighbouring installations, which may affect the safety of employees.
- 2.11 The design should feature the LOTO (Lock-out/Tag-out) System, which will be implemented at the installation. The LOTO system must be unified and implemented in accordance with the principles and procedures related to drafting, reviewing, approving and updating manuals in force at ANWIL S.A. The philosophy, the technical standard of the security features and the process of setting up the interlocks must be agreed and accepted by ANWIL S.A.
- 2.12 The design should indicate the types of training for the industrial facility's operations and maintenance staff.

<p><b>Area of Process</b>  <b>Safety</b>  <b>Prevention and</b>  <b>Occupational Safety and</b>  <b>Health Area, Environmental</b>  <b>Protection Office, IT Office</b>  <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b>  <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b>  <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b>  <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b>  <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b>  <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b>  <b>OF FACILITIES</b>  <b>AT ANWIL</b></p>	<p>Copy no.:  <b>A</b></p>
<p>Preparation date:  27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:</p>
		<p>Page: 12</p>

## V. PROCESS SAFETY REQUIREMENTS

1. Technological facilities, including process, storage, dispatching and other facilities should be designed on the basis of applicable national legal requirements pertaining to the prevention of serious industrial accidents, norms, standards, guidelines including internal organisational regulations (IOR) of ANWIL S.A. and good practices applied at ANWIL S.A. to guarantee the highest possible level of process safety (according to the ALARP principle).
2. In the design process for the construction / construction extension / reconstruction / additional construction / change of the use of industrial facilities, and specifically at the planning stage, it is required to factor in inherent (natural) risks, i.e. risks that are identified but cannot be completely eliminated due to the physical and chemical properties and quantities of substances and auxiliary media and process conditions.
3. In order to ensure the safety of employees, the environment and the continuity of the ongoing process, the design process, and in particular the planning stage, should include the possibilities and ways to reduce the probability of an emergency by choosing a possible organisational or technical solution by the following means:
  - a) reduction – reduction of the quantity of hazardous substance,
  - b) substitution – replacing a substance with another with a lower hazard potential,
  - c) containment – use of conditions characterised by a lower hazard potential, use of a type of substance characterised by a lower hazard potential or use of solutions to minimise the effects of a release of a hazardous substance or energy into the environment,
  - d) dilution – application of solutions aimed at reducing hazards related to the storage and use of low boiling point hazardous substances by reducing the storage pressure or reducing the initial air concentration in the event of a release into the environment,
  - e) simplification – eliminating complexity and intricacy to reduce potential errors and irregularities in the conduct of the technological process.
4. In the design process, the design documentation for the anticipated locations of the facility should factor in the risks of toxic, explosion and fire hazards from other facilities located in the immediate and distant surroundings.
5. In the design process for the construction / construction extension / reconstruction / additional construction / change of the use of industrial facilities, the Contractor is required to conduct a hazard analysis and process risk assessment at the detailed design stage.

<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:</p>
		<p>Page: 13</p>

6. Hazard analysis and risk assessment should be conducted by using the most representative and universal hazard analysis methods (e.g. PHA, HAZOP, AWZ) on the basis adopted for application at ANWIL S.A. Process Risk Matrix. The detailed requirements, principles and methodology for conducting risk analyses are included in the internal organisational regulation (IOR) of ANWIL S.A. concerning the Process Safety Management System at ANWIL S.A.
7. All the types of technical safeguards and technical solutions proposed in the technical documentation should include the results and recommendations from hazard analyses and process risk assessments (e.g. PHA, HAZOP, SIL, etc.) as well as the classification of explosion risk zones.
8. The Contractor for the construction / construction extension / reconstruction / additional construction / change of the use of a facility where substances forming explosive mixtures with air may be present (including storage areas for cylinders of flammable gases, battery charging rooms), is obliged to conduct an explosion hazard assessment and provide documentation of the classification of explosion hazard zones at the detailed design stage.
9. Any and all documentation on the classification of explosion hazard zones should be prepared on the basis of national legal provisions and internal organisational regulations (IOR) applicable at ANWIL S.A. The approval of the classification documentation is conducted by the EX Classification Committee in accordance with IOR ANWIL S.A.
10. Based on the EX classification documentation approved by the EX Classification Committee, the Contractor, before commissioning the facility, is required to perform a risk assessment of the occurrence of explosive atmospheres in the workplace (also taking the correct selection of EX equipment into account) and prepare the Explosion Prevention Document (EPD). In the case of existing facilities on which investment works are performed, the update of the EPD is to be carried out by the Business Partner unless the development or update is committed to the Contractor in the ToR.  
Detailed requirements for the EPD are contained in the internal organisational regulation on the classification of explosive atmospheres, the Explosion Prevention Document (EPD) and explosion risk assessment at ANWIL S.A.
11. Manual call points should be designed around and within the facility to enable the occurrence of an emergency to be reported to the Company Fire Department.
12. The inter-positioning of equipment and devices of the facility subject to construction / construction extension / reconstruction / additional construction / change of use and existing facilities should include:
  - a) Fire and explosion properties of substances/mixtures used in the process/-es,
  - b) Filling methods, process flows between nodes,
  - c) General operating conditions,
  - d) Option to preventing contagion.
13. The location of release detectors, explosive concentrations and fire should allow the hazard to be identified as soon as possible. The detectors should be connected to systems

<p><b>Area of Process</b>  <b>Safety</b>  <b>Prevention and</b>  <b>Occupational Safety and</b>  <b>Health Area, Environmental</b>  <b>Protection Office, IT Office</b>  <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b>  <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b>  <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b>  <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b>  <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b>  <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b>  <b>OF FACILITIES</b>  <b>AT ANWIL</b></p>	<p>Copy no.:  <b>A</b></p>
<p>Preparation date:  27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:  Page: 14</p>

monitoring gases, leaks and fires combined with a production and safety supervision system.

14. Such apparatus and devices as may be installed at the facility should come equipped with safety systems, control and measuring devices and shut-off valves.
15. Emergency discharges of toxic and flammable substances should be directed to appropriately designed discharge systems, in such a manner as to minimise the negative effect on the environment and ensure the total safety of employees.
16. The facility premises should have a concrete base, sealed, chemically treated in selected areas with drainage of potential hazardous substance leaks into the industrial sewerage system. Such safeguards should minimise the negative effect of the industrial facility on the environment.
17. The pipeline routes to and from the facility should include:
  - a) Fire and explosion properties of substances/mixtures that they transfer,
  - b) Potential for an explosive atmosphere,
  - c) Flow and temperature of substances flowing in the adjacent pipelines,
  - d) Prevention of the domino effect.
18. In the process of designing industrial facilities, the Contractor is obliged to provide ANWIL S.A. with a list of the types and quantities of substances listed in the Regulation of the Polish Minister of Development dated 29 January 2016 on the types and quantities of hazardous substances present at the plant, determining its classification as the plant with an increased or high risk of a serious industrial accident (Journal of Laws of 2016, item 138) at a mutually agreed date (but no later than 10 months before the scheduled date of commencement of the facility's operation in the case of long-term investments):
  - a) For named substances – the nature, quantity, location and method of storage on the facility premises,
  - b) For unnamed substances additionally – the SEVESO classification of such substances.

The list of hazardous substances forms the basis for ANWIL S.A.'s analysis of the need to update the documentation required under the Polish Environmental Protection Law, i.e. the High Risk Facility Notification, the Emergency Prevention Programme, the Safety Report and the Internal Operational and Rescue Plan.

Should it be determined that the investment task entrusted to the Contractor requires updating the aforementioned documentation and obtaining acceptance or approval for it from the relevant government authorities, the Contractor, as the design work progresses, is obliged to provide such information as may be requisite to update the aforementioned documents no later than 8 months (in the case of long-term investments) prior to the scheduled date of commissioning of the new/upgraded facility. The exact scope of the information and any arrangements on when it should be provided must be agreed with the Process Safety Department at ANWIL S.A. The basis for determining the necessity of updating the safety report is the PHA and/or HAZOP analysis report.

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 15

## VI. FIRE AND CHEMICAL SAFETY REQUIREMENTS

### VI.1. Fire and chemical safety requirements – legal grounds

In designing the construction / construction extension / reconstruction / additional construction / change of the use of the investment, aside from the requirements of the regulations listed below, the standards and good practices of ANWIL S.A. must be considered (there are additional requirements of ANWIL S.A. under each Polish state regulation):

1. Polish Act dated 24 August 1991 on fire protection (Journal of Laws 2021, item 869 as amended).
2. Polish Act dated 7 July 1994 Construction Law (Journal of Laws 2021, item 2351, as amended).
  - a) Required application of "Guidelines for fire protection of equipment and pipeline support structures" implemented at ANWIL S.A. (it is recommended taking the best engineering knowledge into account – recommended standard API 2218).
  - b) The designer who performs fire protection works on the premises of ANWIL S.A. should have the sufficient Polish construction qualifications.
3. Polish Act dated 30 August 2002 on the conformity assessment system (Journal of Laws of 2021, item 1344, as amended).
4. Polish Act dated 16 April 2004 on construction products (Journal of Laws of 2020, item 471).
5. Regulation of the Polish Minister of Internal Affairs and Administration dated 17 September 2021 on agreeing the land or plot development project, architectural and construction design, technical design and the design of fire-fighting equipment in terms of compliance with fire protection requirements (Journal of Laws 2021 item 722 as amended):
  - Having agreed the documentation with the fire protection expert, the designs (construction, technical, issues affecting fire and chemical safety) should be submitted to the Chief Fire Officer of ANWIL S.A. for the Officer to issue their expert opinion.
  - After the positive acceptance of the installation / system / process safety device (with fire protection features), the Contractor is obliged to provide the Company Fire Department at ANWIL S.A. with the operation book and TaOD (technical and operation documentation);
  - The confirmation that the documentation has been agreed is provided by the stamp and signature of the fire safety expert in accordance with the aforementioned Regulation and in the agreement sheet.
  - The project documentation submitted for an opinion must be in Polish.
  - The fire protection conditions must be developed on a separate basis. Documentation submitted for an opinion must have a revision / amendment sheet / specification, in which any changes made to the original and any subsequent version must be recorded. If the revision / amendment sheet is not attached, the documentation will be given a negative opinion.

Regulation of the Polish Minister of Internal Affairs and Administration dated 7 June 2010 on fire protection of buildings, other structures and areas (Journal of Laws No. 109, item 719, as amended):

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 16

- a) The provision of portable and mobile fire extinguishers must be compliant with the internal regulations of ANWIL S.A. contained in the Comprehensive Prevention System. At ANWIL, it is accepted as a rule that the minimum amount of extinguishing agent for powder extinguishers is 6 kg, and for carbon dioxide extinguisher – 5 L.
- b) LPG cylinder storage facilities and LPG tanks weighing up to 440 kg should be located at a distance of no less than 10 metres from buildings/facilities and flammable material storage areas. This distance can be decreased by half in the following cases:
  - Application of a fire separation wall with a fire resistance class of at least REI 120, covering the tank from the side of the building;
  - When the weight of LPG stored does not exceed 440 kg and the cylinders are stored in openwork containers;
  - Underground tanks;
- c) The LPG storage facility should be equipped with a 25 kg AP-25x powder unit, warning signs, safety instructions; protect against mechanical damage; divide and label empty and full cylinders and provide a source of fire water for external fire fighting in the form of an external hydrant within 50 metres of the storage facility (Technical Standard of ORLEN).
- d) As a part of the contract, the technical and operational documentation of fire protection devices must be provided, including, e.g., the inspection and maintenance rules for the installed fire protection equipment and the required authorisations of the persons performing these activities. Documentation must be provided in Polish.
- e) All fire protection pipelines should be painted over their entire surface with red paint (colour shade similar to RAL 3000). Agree the method of marking/painting the pipelines with the Chief Fire Officer of ANWIL S.A. Details on the marking/painting of pipelines are contained in separate Internal Organisational Regulations of ANWIL S.A.
- f) If any aspect of fire protection (e.g. definition of fire compartmentation, design of fire protection equipment, etc.) covers the scope/range of an area / facility / terrain / fire zone owned by multiple owners / operators / contractors / managers, etc., it is advisable that all documentation (e.g. fire protection manual, fire scenario, designs) covering that facility / terrain / area / fire zone should include information on that fire protection aspect, and that the documentation should be done in cooperation with the owner / operator / contractor / manager of the area / facility / terrain / fire zone.
- g) Tests of fire and chemical protection equipment of ANWIL S.A.'s facilities should be conducted in the presence of the representatives of the Company Fire Department. Before performing such tests, the Contractor must provide the representatives of the Company Fire Department with an operation and maintenance book, as well as a report outlining the scope of the test and the pass/fail criteria (this may be in the form of a checklist), in accordance with the standard according to which the device / system / installation was made.
- h) The industrial facility must have developed Fire Safety Instructions in accordance with the relevant internal organisational regulation in force at ANWIL S.A.



<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 17</p>

- i) All the rooms and spaces in the facilities, such as corridors, production floors, etc., in the buildings where people are not present 24 hours a day are to be equipped with a Fire Alarm System in the form of detectors connected to the Company Fire Department Control Station, visualised in the OSA-2 system. In the case of such rooms or spaces in the facilities where people are present 24 hours a day, the facility should be equipped with a Fire Alarm System in the form of Manual Call Points.
- j) All such rooms in buildings where people are not present 24 hours a day should be equipped with a Fire Signalling System connected to the Company Fire Department Management Station, visualised in the OSA-2 system;
- k) Elevator shafts should be secured with a Fire Alarm System
  - Technical rooms (server rooms, switching stations, UPS, contactor rooms, cable rooms and other rooms affecting the functioning of the installation and where people are not permanently present) must be secured with Fixed Gas Extinguishing Systems; the method of securing them must be agreed with the Chief Fire Officer of ANWIL S.A.
  - Technological and energy equipment (compressors, transformers, rectifiers, pumps, fans, turbines, etc.) which may constitute a fire and chemical hazard and/or affect the operation of the installation must be protected with Fixed Fire Extinguishing Systems. The method of securing should be agreed with the Chief Fire Officer of ANWIL S.A.;
    - Where fixed gas fire extinguishing systems (FFEUgas) are applied, the acceptable extinguishing agents are: CO<sub>2</sub>, Inergen and NOVEC 1230.
  - Diesel emergency generators should come equipped with gas fixed fire extinguishing units (FFEU). The method of securing should be agreed with the Chief Fire Officer of ANWIL S.A.
  - The method of securing temporary facilities (e.g. containers, shelters, sheds) must be agreed with the Chief Fire Officer of ANWIL S.A.

Gas FFEU (fixed fire extinguishing units) should come equipped with a STOP - EXTINGUISHING button.

- The internal installation of the fire network must be implemented as a wet installation, and protected against freezing.
- Sprinkler or drencher systems should be designed on the basis of PN or best engineering knowledge (VdS NFPA recommended guidelines)
- Electrical and teletechnical installations are to be implemented in accordance with CPR Directive 305/2011, SEP-E-007:2017-09 standard;
- FFEU, sprinkler, drencher systems are to be connected to the Fire Alert System with visualisation in the OSA-2 system.
- PM facilities where a fire water supply system (internal hydrants) is required should be fitted with DN 52 hydrants.
- The installation enclosure and floors/technological levels with foundations (building definition) should be treated as equivalent to a building.

- 7. Regulation of the Polish Minister of Internal Affairs and Administration dated 20 June 2007 on the list of products used to ensure public safety or protect

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 18

health and life and property, as well as the rules for issuing approvals for the use of such products (Journal of Laws of 2007, No. 143, item 1002, as amended),

- All fire and chemical safety equipment must come with relevant approvals required by Polish law.
8. Regulation of the Polish Minister of Internal Affairs and Administration of 24 July 2009 on fire water supply and fire roads (Polish Journal of Laws of 2009, No. 124, item 1030, as amended):
- The amount of water for external extinguishing should be calculated with the consideration of the size of the hazard zone, the tactical and technical parameters of the equipment being equipped by the CFD of ANWIL S.A. and the amount of water required to supply the fixed and semi-permanent fire extinguishing and protection systems being equipped by the industrial facility.
  - A minimum of DN 100 ground hydrants with a handwheel should be used to provide water supply for external firefighting. The hydrants must be secured against breakage.
- a) Distances between the hydrants should be maintained at no more than 50 m. If this requirement cannot be met, the location of the hydrant should be agreed with the Chief Fire Officer of ANWIL S.A. and the Wastewater Network and Management Department.
- b) The use of enhanced water points for water supply is recommended – the details of such a solution should be agreed with the CFD and the Wastewater Network and Management Department. A water intake point/bay for fire engines should be provided for water intake with increased intensity.
- c) The hydrant locations and high intensity water points and the method of their installation should be agreed with the Company Fire Department and the Wastewater Network and Management Department.
- d) The fire water network must be a ring system.
- e) During the additional construction, construction extension and reconstruction of communication roads with paved surfaces on the premises of ANWIL S.A., they must be brought in line with the requirements of Polish national law and standards applicable at ANWIL S.A.
- f) Fire roads should be designed with a minimum width of 6 m.  
The clear height of trestle bridges must not be less than 4.5 m
9. Regulation of the Polish Minister of Infrastructure dated 12 April 2002 on technical conditions to be met by buildings and their location (Journal of Laws of 2002, No. 75, item 690, as amended):
- a) The industrial facility should be equipped with Fire Protection Power Switches (FPPSs).
- b) If not possible to equip the facility with FPPS, substitute solutions must be used in accordance with Polish law.
- Emergency lighting/evacuation pictograms should be made with LED technology (illuminated),
- c) Emergency lighting must be used on the installation site wherever there are traffic routes.

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 19

- Accesses and passageways to installations, apparatus, tanks, cranes and other technical and technological equipment may be corridors, platforms, landings, galleries, stairs, ladders and brackets, stalls, made of non-combustible materials (of a class not lower than A2- s3, d2). The method of protection and the choice of materials to be used should be agreed with the Chief Fire Officer of Anwil S.A.;
  - The conductors used in the power supply and control systems for fire protection equipment are recommended to be PH90 class conductors with E90 class fittings, and in spaces protected by water FFEU, PH30 class conductors with E30 class fittings. The proposal to use the aforementioned products in a different class should be agreed with the Chief Fire Officer of ANWIL S.A.
  - ANWIL S.A. standards, guidelines, etc. must be taken into account when issuing/drafting the fire protection documentation (expertise, analysis, opinion, etc.). Any deviations are to be agreed with the Chief Fire Officer of Anwil S.A..
10. Regulation of the Polish Minister of Development dated 29 January 2016 on the types and quantities of hazardous substances present at a plant, determining the classification of the plant as a plant with an increased or high risk of a major industrial accident (Journal of Laws of 2016, item 138, as amended)
  11. Regulation of the Polish Minister of Economy dated 21 November 2005 on the technical conditions to be met by liquid fuel depots and stations, long-distance transfer pipelines for the transport of crude oil and petroleum products and their location (Journal of Laws of 2005, No. 243, item 2063, as amended).
    - a) In the case of the location of storage facilities for liquid gas cylinders weighing between 440 kg and 1,350 kg and liquid gas tanks, the principles of the aforementioned regulation must be applied.
  12. Regulation of the Polish Minister of Economy dated 18 September 2001 on the technical conditions of technical supervision to be fulfilled by non-pressure and low-pressure vessels intended for the storage of flammable liquids (Journal of Laws of 2001, No. 113, item 1211, as amended).
  13. Polish Standards,
  14. Internal organisational regulations forming part of the Comprehensive Prevention System in force at ANWIL S.A.

## **VI.2. Securing of the RES installations.**

1. A fire road is required to the building in / land on which the PV installation is based.
2. The PV installation should come equipped with handheld fire extinguishing equipment: ABC – 6 kg powder extinguishers and/or GM-6 fog extinguishers to extinguish live equipment and a PVStop device to isolate light access to the PV modules under all weather conditions.

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 20

3. The building/facility with the PV installation must be equipped with signs for emergency services pursuant to PN-EN 60364-7-712.
4. An information sheet must be prepared for the emergency services pursuant to VDE-AR-2100-7200.
5. The PV facility/installation should be equipped with a FPPS.
6. The RES switchgear room should be equipped with a Fire Alert System and a gas FFEU.

### VI.3. Location of the administration building for the industrial facility

In order to ensure the safety of employees operating the installation, it is essential:

1. To make calculations and estimates of potential maximum range zones for:
  - a) Overpressure waves (3; 8; 14;  $\geq 42\text{kPa}$ ) from the explosion,
  - b) Thermal radiation (4; 7; 12.5; 37.5 kW/m<sup>2</sup>) from fires,
  - c) Toxic substance cloud concentrations (three toxicity levels, corresponding to the US standards for emergency releases of toxic materials ERPG 1, ERPG 2 or ERPG 3. For chlorine and ammonia, the minimum initial lethal concentration (LCLo) was taken as the highest toxicity level – level 3.
2. Securing the administrative building against the effects of an explosion in order to reduce the potential losses and eliminate the risk of injuries or fatalities.
3. Maintaining work safety related to keeping hardened installation areas clean and eliminating potential sources of ignition and explosion.

### VI.4 Requirements for the Fire Alert System (FAS)

1. The system is based on a network of addressable exchanges type: Polon 4900- from ZUD POLON – ALFA, Bydgoszcz.
  - a) any changes to the system, i.e. its extension, reprogramming of panels, etc. can only be performed on the basis of a technical design agreed with the services of ANWIL S.A.,
  - b) the following guidelines should be used as the design basis.
2. Supervisory elements – approved for use with the Polon 4900 control panel.
  - a) DOT-6046 addressable, multi-state, multi-sensor smoke and heat detector,
  - b) DOR-4046 analogue optical smoke detectors and G-40 addressable detector sockets, c) DUR-4046 addressable diffuse-type optical smoke detector,
  - d) TUN-6046 addressable, universal, redundant-differential heat detector;
  - e) EKS-4001 linear actuator;
  - f) EWS-4001 linear control element;
  - g) EWK-4001 linear monitoring element;
  - h) ROP-4001M and ROP-4001MH fire buttons;
  - i) DOP-6001 linear smoke detector,

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 21

- j) ADC-4001M adapter.
- 3. In the case of designing the new and extending the existing Fire Alert System, the system must be based on POLON 6000 (cabling, control panel, master panel, detectors, required cooperation with the existing OSA-2 visualisation system, etc.);
  - a) any and all changes to the system, i.e. its extension, reprogramming of control panels, etc. may only be performed on the basis of a technical design agreed with the services of ANWIL S.A,
  - b) the following guidelines should be used as the design basis.
  - c) the master exchange must be located in the CFD building at ANWIL S.A.
- 4. Sensor elements – approved for use with Polon 6000 control panel a)
  - DOT-6046 addressable multi-sensor smoke and heat detector,
  - b) DUO-6046 universal addressable smoke detector,
  - c) DOP-6001 linear smoke detector,
  - d) EKS-6022, EKS 6002, EKS-6004 universal control and monitoring element;
  - e) ROP-4001M and ROP-4001MH fire buttons.
- 5. The detailed characteristics of the areas exempted from detection should be considered in accordance with the design standard based on which the fire alarm system was designed. Furthermore, areas of low fire risk for which it is not projected that detection will be provided include:
  - a) bathrooms, shower rooms, laundry rooms or toilets, provided that they are not used for the storage of combustible materials or waste. The rooms where the entrances to the sanitary facilities are located should be supervised;
  - b) shafts or vertical ducts which are not accessible to the public (without inspection openings) with a cross-sectional area of less than 2 m<sup>2</sup> provided that they have a suitable fire resistance and fire compartmentation at floor, ceiling and wall penetrations, and do not carry cables for electrical installations (exceeding 230 V) and safety installations (unless the cables can withstand fire for at least 90 minutes). If the shafts or ducts contain fire alarm cables, they should be monitored by automatic detectors;
  - c) uncovered delivery platforms;
  - d) covered loading platforms if protected by a sprinkler system;
  - e) unventilated cold stores with a gross volume of less than 20 m<sup>3</sup>;
  - f) ventilation ducts provided that:
    - o all the rooms through which these ducts pass, as well as the central air-conditioning room (fan room) and the supply/exhaust ventilation collecting duct, are supervised by fire detectors, and
    - o when the detectors are triggered, the fire dampers are activated and/or the ventilation is switched off;
    - g) construction voids (including spaces under raised floors and above suspended ceilings) characterised by the following requirements:
      - o the fire load density of the combustible material does not exceed 25 MJ, for each 1 m<sup>2</sup> of area, in any part of the room;
      - o the fire load density of the combustible material does not exceed 15 MJ, for each 1 m<sup>2</sup> of area, in any part of the room if the void contains safety installation cables;
      - o building elements such as ceilings, roof, suspended ceiling and raised floors are made of

<p><b>Area of Process</b>  <b>Safety</b>  <b>Prevention and</b>  <b>Occupational Safety and</b>  <b>Health Area, Environmental</b>  <b>Protection Office, IT Office</b>  <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b>  <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b>  <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b>  <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b>  <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b>  <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b>  <b>OF FACILITIES</b>  <b>AT ANWIL</b></p>	<p>Copy no.:  <b>A</b></p>
<p>Preparation date:  27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:  Page: 22</p>

- non-combustible or at least fire-proof materials;
- o have a height of less than 0.8 m and,
- o are divided into areas measuring a maximum of 10 m x 10 m by non-combustible partitions and,
- o all elements restricting the space are non-flammable and,
- o they are not crossed by safety installation cables or cables with a voltage exceeding 230 V (unless the cables can withstand fire for at least 90 minutes) and, h) rooms protected by a permanent fire extinguishing system equipped with a control panel with own fire detectors, provided that the SUG control panel is connected to the general fire alarm system at the facility.
- i) Building cavities (including the space under a raised floor and above a suspended ceiling) require separate protection by fire detectors when:
  - o There is a possibility of rapid spread of fire or smoke through the building cavity outside the room where the fire started before it is detected by detectors located beyond the cavity, or
  - o a fire in the building cavity may damage the safety system cables before the fire is detected
- .
- 6. The fire alert system control panel should be installed in such rooms where 24-hour operation is provided, e.g. control rooms, taking into account the following requirements:
  - a) Indicators and manipulators are readily accessible to the Company Fire Department and to persons responsible for the facility;
  - b) The room should be provided with lighting of 300 to 500 lux [lx].  
The room should be equipped with emergency escape lighting. The emergency lighting should also be provided for access routes (not less than 1 lux) to the room. In the case of rooms serving as safety centres where people are assumed to be present (in the event of a fire continuing in another part of the building), the emergency lighting should provide an operating time of no less than 2 hours;
  - c) The background noise level should be low enough for the acoustic signals to be audible;
  - d) The environment should be clean and dry;
  - e) The possibility of mechanical damage to the equipment should be low;

The risk of fire should be low and the site should be monitored by at least one detector belonging to the fire alarm system supervised by this fire alarm panel. A Manual Call Point (MCP) should be installed in or in the immediate vicinity of the room. The following should be provided in the vicinity of the CSP: operating and maintenance manual for the control panel, summary operating manual for the supervisor.
- 7. Incorporating new elements into the Polon Fire Alarm System.
  - a) the centres are connected to the system using single-mode fibre optic cables, connectors – S.C type,
  - b) connection to the fibre-optic network only in agreement with the IT Office,
  - c) for supervision loops, the use of twisted pair cables is required – indoors YnTKSYekw 1x2x1mm<sup>2</sup>, outdoors XzKAXwekw 2x2x1mm<sup>2</sup> outdoors or XzTKMXpw 2x2x0,8mm<sup>2</sup> (with spare),
  - d) for the control devices, it is required that the following cables be used: HTKSHekw FE180/PH90 E90;
  - E90;

<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 23</p>

- e) the impedance parameters of the supervision loop must be compliant with the values recommended by the manufacturer in the Operation And Maintenance Documentation;
  - f) each time the Contractor is required to verify the supervision loop as regards the impedance of the line to be extended and the compatibility of the software version of the control panel components.
  - g) in justified cases, it is permissible to use control elements other than the aforementioned ones, i.e. withdrawal from production and/or replacement by new product versions. In each case, the change must be agreed with the Chief Fire Officer.
  - h) Use of other types of cables than the ones specified above only in justified cases, e.g. other cross-sections required due to the design calculations, environmental conditions or other installation-specific requirements. In each case, the change must be agreed with the Chief Fire Officer.
8. Requirements for cable routes.
- a) cable lines are required to be routed in dedicated cable routes.  
These should be designed with a reserve of at least 30% space; additionally, they should be:
    - o made of hot-dip galvanised steel sheet(according to DIN 50976, the zinc coating thickness should at least be 50µm); upon agreement with the CFD, it is permissible to use mesh trays,
    - o equipped with solid covers protecting against sunlight,
    - o the side and bottom walls of cable trays should be perforated, and the perforation should cover at least 30% of the surface area,
  - b) when laying cables and wires in cable trays and/or cable ladders, a method should be used ensuring that the effectiveness of the corrosion protection applied is maintained,
  - c) all the connections between cable trays and cable ladders should have electrical continuity. All cable trays, ladders and cable route support structures must be connected to the earthing network.
  - d) in facilities with corrosive environments, cables must be laid in uniform sections with sealed inputs and outputs to the zone,
  - e) fire alarm system cables must be routed at a standard distance from other installations, and particular attention must be paid to maintaining the correct distance from the lightning protection and electrical installations,
  - f) conductors passing through potentially explosive atmospheres must be routed as an intrinsically safe circuit protected by a protective barrier or, for through conductors, as part of a flame-proof circuit. Cable penetrations into the hazardous area must be sealed with fire-resistant material,
  - g) where there is no existing telecommunications cable duct, build the sewerage system with the thick-walled PVC 100 pipe,
  - h) All cable penetrations through walls should be routed through permanently sealed cable glands. Cable glands on the installation used to lead cables from the ground to the junction box should be sealed with a sealing compound characterised by properties sufficient for the expected mechanical, chemical and thermal exposure.  
On the Fertiliser Production Area installation, use cable routes made of stainless materials resistant to environmental factors, e.g. acid-resistant steel,

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 24

#### 9. Monitoring and visualisation system

- a) OSA-2 visualisation system, developed by Arvis – Computer Automation Systems in Warsaw.
- b) Basic system functions:

- data exchange with fire alarm control panels,
- graphical, hierarchical presentation of the status of supervised facilities (signalling the status of panels, detectors, fire buttons, adapters, lines, etc.).

10. Changes to the structure of the Fire Alarm System require updating the OSA-2 system in consultation with the CFD.

11. Use of non-dedicated components with higher technical specifications requires the agreement of the Chief Fire Officer.

### VI.5 Requirements for the chemical alarm system

1. **The Chemical Alarm System** on the industrial premises of ANWIL S.A. is used to warn people against hazards and dangerous events occurring on the company's premises and in the adjacent areas (emission of a chemical substance into the atmosphere, fire, explosion, etc.). There are the following warning levels in the system: level 1 alarm (activated locally by an employee at a specific installation), the remainder of the alarms: warning alarm, level 2 and level 3 alarms are activated in the system by the Company Dispatcher. The warning alarm is activated by means of the following devices: a button triggering the level 1 alarm in the system (on SW-type cabinets – where required on installations being a source of potential danger, it is determined on a case-by-case basis), optical and acoustic signalling, sirens (activated for level 2 and 3 alarms), roadblock lights with LED information boards (activated from the system automatically with the level 1 alarm or additionally by the Dispatcher of ANWIL S.A.). All the elements of the Chemical Alarm System are compatible and interconnected with one another and form an integral entirety of a system supervised by the Company Dispatcher. The administrative buildings and the entire premises of the industrial facilities must be covered by the Chemical Alarm System. The owner of the facility/installation must ensure the functionality of the Chemical Alarm System wherever people are present and where necessary.
2. **Temporary Chemical Alarm System:**  
The Contractor is obliged to provide the temporary Chemical Alarm System during the construction of facilities, including backup facilities and construction sites, wherever people are present and where necessary. ANWIL (the owner of the Dispatchers' Department system) will provide a box with the Chemical Alarm System signal for backup facilities and construction sites. For the purpose of maintaining the system security, ANWIL owns the cabinet and the cable supplying the system signal to it (ANWIL assumes the liability and sustains costs of maintaining and repairing these elements). All the other components of the system outside the cabinet (e.g. optical and acoustic signals, roadblock lights, cabling and power supply for these components) are the property of the Contractor and it is the contractor's duty to ensure that such components function properly.



<p><b>Area of Process</b>  <b>Safety</b>  <b>Prevention and</b>  <b>Occupational Safety and</b>  <b>Health Area, Environmental</b>  <b>Protection Office, IT Office</b>  <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b>  <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b>  <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b>  <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b>  <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b>  <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b>  <b>OF FACILITIES</b>  <b>AT ANWIL</b></p>	<p>Copy no.:  <b>A</b></p>
<p>Preparation date:  27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:  Page: 25</p>

and to conduct periodic maintenance works and repairs. The Contractor is obliged to report such requirements well in advance of the operation of the construction site and to consult on all requirements in this respect with the system owner (Dispatchers' Department at ANWIL S.A.).

### 3. System operation principle:

- 3.1 The premises of ANWIL S.A. are currently divided into more than twenty alarm sectors. Additional facilities will be assigned (depending on their location) to respective sectors; in justified cases, a new alarm sector may be established.
3. The optical and acoustic signalling system installed at the industrial facility (optical, acoustic and optical/acoustic signals, alarm sirens, traffic signals with LED boards) is an integral part of the entire Chemical Alarm System.
- 3.3 The alarm system can be controlled both from a computer station located in the Company Dispatcher's room (Company Control Station) and from a portable system (laptop) connected to a separate, dedicated Chemical Alarm network.
- 3.4 The logic for the operation and provision of a sufficient level of warning to people and blocking access from outside with roadblock lights for the newly constructed part of the Chemical Alarm System is to be determined by the Owner of the installation/facility.

### 4. Logic of the operation of the Chemical Alarm System (alarm stages).

In the event of a chemical accident, fires or other hazardous events on the premises of ANWIL S.A., the following chemical alarms are announced, depending on the scope and direction of the danger occurring:

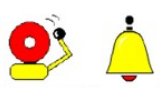
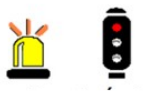

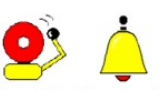


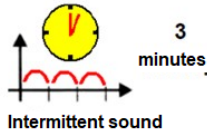
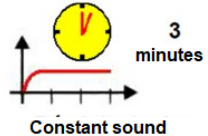
- level 1 chemical alarm,
- alarm warning,
- level 2 chemical alarm,
- level 3 chemical alarm. Level 1 chemical alarm.

The level 1 chemical alarm is announced in the event of a local chemical emergency, involving no more than one installation of any of the Production Areas (alarm sector).

The level 1 alarm can be activated in the system by a supervisor/overseer of any level of the organisational unit where the threat should occur. The level 1 alarm is activated in a specific sector locally by an employee who presses the button on the "SW" cabinet; this alarm causes:

- activation of optical signalling devices with intermittent lights of the local alarm signalling system
  - operating until the alarm is called off (deactivation procedures),
- intermittent acoustic signal of a local alarm – called off automatically after the lapse of 3 minutes,
- activation of the interlocking traffic lights on the access roads to the area (sector) where the risk occurs:
  - red lights - "STOP,"
  - green arrow (optional) – prescribed direction of travel,
  - LED information board.

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 26

Alarm announcement			Alarm cancellation		
 Buzzers / Bells	 Light sygnalling	 Workspace radio station	 Buzzers / Bells	 Light sygnalling	 Workspace radio station
 Intermittent sound 3 minutes	<ul style="list-style-type: none"> <li>pulsating warning lights</li> <li>traffic blockade</li> </ul>	Announcement: type of hazard location of hazard safety guidelines	 Constant sound 3 minutes	Signal deactivation	Announcement: alarm cancellation

Only the Company Dispatcher may deactivate the level 1 alarm in the SCADA computer system; the deactivation causes:

- deactivation of the optical signalling devices,
- continuous siren sound for 3 minutes,
- deactivation of the roadblock lights.

#### 4.2 Alarm warning:

The alarm warning is used to warn employees of the facilities in the sectors concerned of the danger occurring. The Company Dispatcher activates it from the Chemical Alarm System; it generates the following signals:

- continuous light signal of the optical signalling devices operating until the alarm is called off,
- continuous acoustic signal of the signalling devices which automatically switches off after the lapse of 1 minute.

Ogłoszenie alarmu			Odwołanie alarmu
 Buczki / Dzwonki	 Sygnalizacja Światlna	 Rozgłośnia Zakładowa	 Rozgłośnia Zakładowa
 Dźwięk ciągły do 1 minuty	Ciągła lamp ostrzegawczych	<ul style="list-style-type: none"> <li>•rodzaj zagrożenia</li> <li>•zasady postępowania</li> </ul>	Komunikat: odwołanie alarmu

The warning alarm may only be activated and deactivated in the system by the Company Dispatcher.

#### 4.3 Level 2 chemical alarm

The level 2 alert is announced in the event of a chemical threat that includes more than one alarm sector of any of the production areas, but does not extend beyond the industrial area of ANWIL S.A.





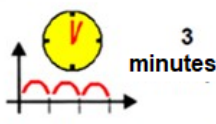
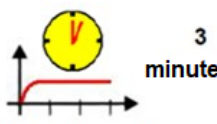
<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 27

The level 2 alarm is announced by the Company Dispatcher activating it in the computer system; the alarm causes:

- intermittent acoustic signal (15 s with a 10 s interval) of sirens for 3 minutes,
- flashing signalling of all optical signalling devices.

The alarm is cancelled by switching it off in the computer system by the Company Dispatcher in the computer system; the alarm causes:

- continuous acoustic signal of sirens for 3 minutes.

Alarm announcement		Alarm cancellation	
 <b>Sirens</b>	 <b>Workplace radio station</b>	 <b>Sirens</b>	 <b>Workplace radio station</b>
 <b>Intermittent sound</b>	<b>Announcement:</b> substance type the direction of the hazard spreading hazard location need for evacuation	 <b>Constant sound</b>	<b>Announcement:</b> alarm cancellation

**Chemical alarm is cancelled on the order of the person in charge of the emergency operations, after the threat has been completely eliminated**

The level 2 alarm may only be switched on and off in the computer system by the Company Dispatcher.

#### 4.4 Level 3 chemical alarm

The level 3 alarm is announced in the event of a chemical threat extending beyond the industrial premises of ANWIL S.A.





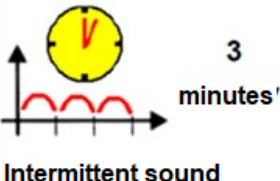
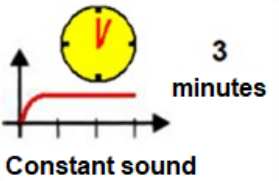
The announcement of the alarm is made in the system, as for the level 2 alarm, and the announcement of the threat in the area adjacent to the premises of ANWIL S.A., and located in the direction of the spread of the dangerous substance, using all available means, such as:

- all sirens installed on the premises of ANWIL S.A. and beyond,
- roadblock lights surrounding ANWIL,
- flashing signalling of all optical indicators.

The alarm in the scope related to ANWIL S.A. is called off by deactivation on the computer system by the Company Dispatcher; it causes:

- continuous siren sound for 3 minutes,
- turning off the interlocking lights on the external roads (if activated).

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 28

Alarm announcement		Alarm cancellation	
			
<b>Sirens</b>	<b>Workplace radio station</b>	<b>Sirens</b>	<b>Workplace radio station</b>
	<b>Announcement:</b> update and clarification of information		<b>Announcement:</b> •Alarm cancellation

The level 3 alarm may only be switched on and off in the computer system by the Company Dispatcher.

## 5. Components of the Chemical Alarm System:

5.1 Server cabinet with the SCADA visualisation system

5.2 Master cabinet, SW type – controlling optical and acoustic signalling and roadblock signals with the option to trigger the level 1 chemical alarm.

The owner of the installation/facility should analyse and consult with the relevant areas of ANWIL S.A. whether the newly constructed installation/facility poses a chemical hazard and will necessitate featuring the level 1 alarm in the Chemical Alarm System.

The SW- type box comes with a button to activate the level 1 alarm and should be located in a place that is readily accessible for the operation of a specific installation (e.g. master control room, control room – to be consulted with the owner of a specific installation/facility).

5.3 SP-type slave cabinet – controlling optical and acoustic signalling and roadblock signals

5.4 SS-type siren cabinet – controlling sirens

5.5 AKU-type battery cabinet

5.6 JBA-type cabinet – controlling external roadblock signals and warning LED boards

5.7 PB- and ZB-type slave – controlling optical and acoustic signalling and roadblock signals on construction sites and backup sites

All cabinets/boxes should be located in an readily accessible place for maintenance (to be consulted with the Owner of the installation/facility, the Maintenance Services Infrastructure specialist and the system maintenance company indicated by ANWIL S.A.).

~~5.8 Optical and acoustic alarms are used to signal level 1 chemical alarms and warning alarms.~~

5.9 Sirens located on the industrial premises of ANWIL S.A. are used to signal level 2 and 3 chemical alarms;

- 5.10 Interlocking traffic lights with LED information boards – are designed to block access and entry to a sector, bypass a sector which is a source of danger while the level 1 alarm is on and serve to redirect vehicle traffic to a non-threatened area of the company.

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 29

## 6. Technical standards:

All newly installed SW, SP, SS, AKU, JBA, PB, ZB cabinets and other system components must be compatible with the entire existing Chemical Alarm System at ANWIL S.A. and reproduce all alarm patterns implemented by this system.

Additional system extensions and documentation must be agreed and accepted by the system's business owner (ANWIL Dispatchers' Department).

The cabinets should be installed indoors. The system is based on equipment from such manufacturers as: Siemens, Relpol and Verma.

The cabinets located outdoors should come with a heating system (to protect them against low temperatures in winter) and a ventilation system (to protect them against high temperatures in summer).

6.1 The standard currently applicable at ANWIL S.A. includes Schneider Electric boxes, Spacial CRN series, solid door type (no glazing) and the cabinet size selected to match the components used (avoiding unnecessary redundancy). The standard is to fit all the components in one cabinet (except for the batteries). We recommend using a separate enclosure of the same series to house the batteries (AKU). Cabinet colour: RAL7035. Mechanical resistance standard: IK10, IP66 waterproofing or one selected to suit the prevailing conditions at their locations.

6.2 PLC controller – S7-1200/1500

6.3 Switch managed – Simatic XC206-2SFP with SFP SM inserts,

6.4 Switch unmanaged – XB004-1LD

6.5 Removed I/O – IM155-6PN Siemens SIMATIC ET 200SP with stands and end of module

6.6 DI8x24VDC Siemens SIMATIC ET 200SP card

6.7 DQ8x24VDC Siemens SIMATIC ET 200SP card

6.8 HMI – SIMATIC HMI KP8 from Siemens

6.9 Power supply – 230VAC/24 VDC SITOP PSU (at least 10A)

6.10 Power back-up – Siemens SITOP DC UPS 24V (at least 15A)

6.11 Battery set – voltage 12V; capacity at least 14Ah; longevity: at least 5 years.

The cabinet should come with a battery backup to ensure that the system, in the event of a mains power failure, operates for 12 hours in the supervised state and for 40 minutes in the alarmed state thereafter. We use the following formula to calculate the battery capacity:

$$Q=1,3*[(I_D*T_D) + (I_A*T_A)]$$

where:

$I_D$  – system load in the supervised state,

$T_D$  – required supervision time,

$I_A$  – load on the system in the alarm state,

$T_A$  – required alarm time.

6.12 Current control relays – SIEMENS 3UG4622-1AW30 or newer model, 24-230V

6.13 Executive relays – RELPOL RMP84-24DC or PIR2 with local control capability

6.14 Remote communication (optional) – InVentia telemetry module, MT series

<p><b>Area of Process</b> Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board</p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 30</p>

6.15 Fibre optic network – SM cable with the following connectors (depending on the device): SC/PC, SC/APC or LC.

6.16 The fibre optic PachCords between the distribution cabinet and the chemical alarm cabinets should be in a protective pipe.

6.17 Optical and acoustic signalling devices – grey housing, constant yellow optical signal, e.g. WERMA 424 320 75. The signalling devices should be selected according to their installation locations (e.g. factoring in EX zones). In justified cases, after written consultation with the owner of the facilities/installation, it is possible to install optical-flash signalling devices with acoustic signalling.

6.18 Sirens – complete box, SS type – DSE 600-1200 with batteries, manufacturer: Digitex. The sirens are to be capable of transmitting voice messages (BARIX Extreamer 100 module or one currently used in the system) and remotely controlling and viewing parameters from the system. Power resulting from measurements or acoustic calculations.

6.19 Roadblock indicators – LED Ø300

6.20 Information board – LED characterised by the following parameters: single-colour – red, size – 100x50 cm (+10%), resolution – 100x50 px (+10%), must be capable of displaying graphics and text. Enclosed by painted protective canopies (colour RAL 7038), depending on the location: aluminium or galvanised.

## 7. Design guidelines, acceptance and commissioning:

- Before commencing the project, the Contractor is obliged to obtain confirmation from the Business Owner of the system (Dispatchers' Department at ANWIL S.A.) on the validity of the technical standards in force and/or ones being implemented at the moment.
- The design of the box and the communication route set-up must be technically approved by the system maintenance company indicated by ANWIL S.A., with the participation of the ANWIL IT Office, after being approved by the facility/installation owner, the system owner and the Maintenance Services Infrastructure specialist at ANWIL S.A.
- We recommend having the design and construction/upgrading of the chemical alarm boxes outsourced to the system maintenance company at ANWIL S.A.
- The Contractor's documentation and implementation of the design of the chemical alarm system should be compliant with the Polish state legal provisions and standards. The Contractor will present all the drawings and diagrams of the system on offer and prepare the detailed and as-built documentation. It is vested in the Contractor to prepare the operating documentation, including but not limited to: operating manual; determination of the projected electrical power consumption during the operation of the system on offer; and submission of a list of related devices. The documentation of the Chemical Alarm System provided with the commissioning of the facility must also be provided to the System's Business Owner, that is the Dispatchers' Department at ANWIL S.A.
- A draft in Polish is required before the Contractor may commence the performance of the task at hand. Prior to the implementation of the System, the Contractor must necessarily submit the design documentation of the System for consultation and opinion, for its verification and approval by ANWIL S.A. (the owner of the System, the target owner of the facilities/installations being built/upgraded, the relevant services depending on the type of facilities being built/upgraded).



<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 31

- f) In order to commence the works, it is necessary to obtain the written approval of the project from the future Owner of the facility/installation, the System Owner, Maintenance Services Infrastructure and the relevant services depending on the type of facilities being built/upgraded.
- g) Prior to introducing changes and/or modifications to the Chemical Alarm System, such actions must be reported to: the owner of a specific installation/facility and the Dispatchers' Department at ANWIL S.A.
- h) The fibre optic network for the Chemical Alarm System should be designed with at least two fibres. The connection to the optical fibre network should be marked with labels or tags indicating the purpose of the fibres (according to the guidelines and in consultation with the IT Office of ANWIL S.A.).
- i) The optical, acoustic or optic-acoustic alarms should be installed wherever people are likely to be present (control rooms, control centres, switchboards, production floors, adjacent areas, in the area of technological installations and in production buildings, in corridors of respective floors of administrative and social buildings, in conference rooms, social rooms, cloakrooms, construction sites and their social facilities, etc.). The precise location of these should be consulted with the owner of specific installations/facilities. The signallers must be selected and designed into the system in such a manner as for them to be capable of performing the system functions contained in the section describing the logic of the system and the respective alarm stages. Depending on the installation location, the signalling devices should be resistant to the conditions present there (e.g. Ex area).
- j) The sirens are to be capable of transmitting voice messages (BARIX Extremer 100 module or one currently used in the system) and remotely controlling and viewing parameters from the system. Power resulting from measurements or acoustic calculations. If possible, the siren tubes should be placed as high as possible on the existing infrastructure with easy access for maintenance, for instance: roofs, tanks, flyovers, facades, etc. The siren control boxes should be placed indoors in readily accessible locations for maintenance, preferably close to the chemical alarm cabinets.
- k) The roadblock lights around the alarm sectors are switched on automatically during the level 1 alarm with a specific sector. The remainder of the traffic lights around the ANWIL premises are controlled in the system by the Company Dispatcher. The roadblock signalling devices signal a red light to block access to a sector and are located behind intersections at the beginning of the road blocked. The roadblock sign posts are compliant with the Regulation of the Polish Minister of Infrastructure dated 3 July 2003 on detailed technical conditions for road signs and signals and road traffic safety devices and the conditions for their placement on roads. Height and strength for mounting the LED board. On the premises of ANWIL, depending on the location: fertiliser zone – anodised aluminium, in other zones: hot-dip galvanised and painted (RAL 7038 colour). Recommended manufacturers: traffic signals – Traffic Lights, LED signs – LED Technology, aluminium poles – ROSA (suitable for traffic signals of the appropriate height for the conditions).
- l) Wiring: the chemical alarm installation is to be performed by using adequate signalling and power cables. The cables used should come with flame-retardant coating. The suggested coating colour is black; the other colours are to be discussed and agreed. Where required by the fire regulations in place, use cables characterised by sufficient fire resistance. Depending on the environmental conditions, the cables should be laid in conduits, PVC strips, metal or PVC cable trays. Detailed guidelines as to how the cables are to be routed (surface mounted/flush mounted) should be agreed with the client during the construction stage.

<b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b>	<b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b>	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.:  Page: 32

- m) Grounding: all systems, controls included in the chemical alarm system should be earthed from the power source.
- n) Finish: enclosures of all signalling devices (including the sirens) should be suitable for their surroundings. All outdoor enclosures and junction boxes should be protected against corrosion and painted with weatherproof paints. All devices should come with an enclosure suitable for the prevailing conditions, meeting the relevant IPxx class (dust and waterproof), IKxx mechanical resistance class or be installed in such an enclosure.
- o) Marking: all devices and components should be marked in such a manner as for them to be uniquely identified in line with the design documentation. Cabinets must be labelled according to the numbering in force on the facility premises in the Chemical Alarm System. System nameplates with technological names of the system must be permanently affixed to the devices, and such nameplates as may contain descriptions must be affixed under the optical and acoustic signalling devices. The plate specifications: black "CHEMICAL ALARM" lettering overprinted on yellow background, dimensions 20x10 cm or 10x8cm depending on the size of the rooms. Boxes with cable connections should be placed in readily accessible locations with proper marking. The name of a cabinet consists of 3 elements: the number of the alarm sector in which it is located, the type of cabinet (SW, SP, SS), the consecutive number of the cabinet in a specific sector. (the naming standard should also be maintained for cabinets in the construction back-up facilities, e.g. SP\_ZB1, cabinets for external traffic lights, e.g. JBA01, and battery cabinets, e.g. 1SP13\_AKU).
- p) The equipment used should factor in the potential explosion hazard zone present on at the facility (equipment in a suitable EX design).
- q) We recommend powering the components of the Chemical Alert System from a guaranteed voltage source.
- r) Upon completing the works, the Contractor should declare readiness for commissioning and connection to the system of the newly built/upgraded node to the System Owner (Dispatchers' Department of ANWIL S.A.).
- s) Upon the notification of readiness, the Contractor is obliged to commission the following works to a company maintaining the System indicated by ANWIL S.A.: programming, connection to the system in operation, preparation of visualisation at the Company Control Station and commissioning of the new system node.
- t) Programming works and changes to the visualisation system of the Chemical Alarm System, for reasons of the safety and reliability of the system, will be performed only by the company indicated by the business owner of the system (Dispatchers' Department of ANWIL S.A.) maintaining the system based on the documentation provided and accepted. The independent performance of works on a separate teletechnical network of the Chemical Alarm System by the Contractor and "third parties" is prohibited. Such works on the separated teletechnical network may be performed only by the maintenance company indicated by ANWIL S.A. with the participation of the IT Office of ANWIL S.A. upon the receipt of such a request from the Contractor. The timing of the activities is determined on a case-by-case basis. The system maintenance company indicated by ANWIL S.A. will update the operating instructions at the Company's Control Station and train the Dispatchers after the works mentioned above are completed.
- u) Prior to the commissioning of the System, the Ordering Party will conduct a mechanical acceptance of the components installed at the facility, confirmed by a report.
- v) Technical acceptance and functional tests: with the approval of authorised representatives of

ANWIL S.A., the Contractor will conduct the technical acceptance of the chemical alarm system. The Contractor will check all the devices included in the system, check all the cable connections

<p><b>Area of Process</b> Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board</p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.:</p>
		<p>Page: 33</p>

and verify the correctness of operation with the participation of the Dispatcher of ANWIL S.A. and the system maintenance company indicated by ANWIL S.A.

- w) Electrical commissioning of the system does not imply that the system is fully operational and functional on the premises of ANWIL. After the testing and acceptance, the Contractor must notify ANWIL of its readiness to connect the installation to the entire system. The connection of the entire system can be conducted by the ANWIL IT Office with the participation of the Chemical Alarm System maintenance company. The company maintaining the system, acting on a mandate, has to program the cabinets controllers and perform the visualisation of the newly created or upgraded elements in the SCADA system in the Company Control Room.
- x) Tests and inspection: for all devices, as well as for checking the correct operation of the entire system, the Contractor will conduct standard factory tests and adjustments (if necessary, e.g. volume adjustment of the acoustic signalers). The Contractor will present such reports as may be prepared during the tests and inspections of the equipment to the authorised representatives of ANWIL S.A. The tests must be held with the participation of the Dispatchers' Department of ANWIL S.A. and the system maintenance company indicated by ANWIL S.A. Tests should be carried out on the operation of the locker and tests of the locker(s) when a warning and level 1 alert is sounded at the site. The Contractor should replace defective, damaged or malfunctioning devices of its own accord with fully operational ones; the Contractor should notify the authorised representatives of ANWIL S.A. of the repair and readiness to conduct the functional tests again.
- y) A positive result of the functional tests conducted on the Chemical Alarm System is a prerequisite for starting the process of commissioning the production installations and feeding the hazardous carriers. The commissioning of the system should be evidenced by a written report of the correct operation of the Chemical Alarm System.

## 8. Handling during the guarantee period

8.1 As non-conformities are found in the operation of the chemical alarm system (malfunctions, defects, etc.) during the guarantee period, the Contractor (guarantor) at all times (24h/7 days a week/365 days a year) undertakes to send qualified technical personnel to repair such non-conformities of the equipment or remove any failures reported by the Ordering Party. The Contractor (guarantor) is obliged to take all necessary actions within

24 hours from the moment such a failure is reported by the Ordering Party and to remove the failure as soon as practicable.

8.2 Guidance and responsibility for maintaining the performance of the system elements:

- At the facilities in possession by ANWIL S.A., all elements connected to the existing System are the property of ANWIL S.A.; the owners of the facilities are responsible for maintaining the full efficiency of the system elements.
- At the facilities not in possession of ANWIL S.A., for the purpose of maintaining the system security, ANWIL owns the system cabinet (SW type) and the cable supplying the system signals to it (it assumes the liability and sustains costs of maintenance and repair of such elements). All the other elements of the system coming out of the cabinet (e.g., optical and acoustic signals, sirens, roadblock lights, cabling and power supply for these elements) are the property of the Owners of the facilities and it is their responsibility to ensure the proper functioning of these elements, as well as to conduct periodic maintenance works and repairs. Recommended path for dealing with the contractor during

<p><b>Area of Process</b> Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board</p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 34</p>

the guarantee period as for cases where a fault is detected or reported in the elements of the completed System units:

8.3.1. System access and repair (24/7)

- The maintenance company – designated by the Business Owner of the system – must have guaranteed access to the warning signal control cabinets for immediate diagnostic and corrective actions.
- The ANWILS.A. IT Office must provide access to ICT connections.

8.3.2. Recommended treatment during ongoing maintenance and fault occurrence:

- The Dispatcher reports a fault to the system maintenance company indicated by ANWIL S.A.
- The maintenance company must have access to the system elements to diagnose the cause of their fault.
- After the diagnosis, the system maintenance company reports the type of fault to the Dispatcher.
- If the system elements essential for its operation (owned by the Dispatchers' Department of ANWIL S.A.) fail, the maintenance company proceeds immediately to remedy the fault. Once the maintenance company has performed the necessary repairs, the assessed repair costs will be sent to the Dispatchers' and Maintenance Services Departments at ANWIL S.A., which will settle such repairs with the Contractor/Guarantor.
- If the system's executive elements (which are the responsibility of the Facilities /Installation Owners) have malfunctioned, the Dispatcher will notify the Owners concerned of the malfunction. The owner of the facility/installation will have the repair work performed of its own accord having contacted the Guarantor

8.3.3. Mandatory system reviews:

- First Monday of the month,
- Half-yearly reviews
- Annual reviews

Owners of specific facilities /installations are obliged to conduct the foregoing inspections of their own accord and to provide the Dispatchers' Department of ANWIL S.A. with reports of the inspections performed.

9. Any deviation from the standards should be justified in writing and approved by the System Owner (Dispatchers' Department at ANWIL S.A.) and the Owners of the facilities/installations on which the respective part of the Chemical Alarm System operates.

**VI. 6. Requirements for the Company Broadcasting System**

1. The administrative buildings and the entire industrial premises must be covered by the Company Broadcasting System for the transmission of messages and information on hazards occurring.
2. The Company Broadcasting System operates based on equipment from Mantrako, covers the entire company premises with its range, and ensures that information and messages can be transmitted by the Company Dispatcher at any time of day to all such places where employees may be present (rooms, installation area, passageways, etc.).
3. The system also allows Shift Coordinators of production plants to transmit the information heard at their sites during the level 1 chemical alarm via local radio broadcasts.
4. The ANWIL S.A. sound system operates with a standard speaker line voltage of 100V ~.

<p><b>Area of Process</b> <b>Safety</b> <b>Prevention and</b> <b>Occupational Safety and</b> <b>Health Area, Environmental</b> <b>Protection Office, IT Office</b> <b>Production Management Board</b></p>	<p><b>REQUIREMENTS FOR OCCUPATIONAL SAFETY AND</b> <b>HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL</b> <b>SAFETY AND ENVIRONMENTAL PROTECTION IN</b> <b>PROCESSES RELATED TO DESIGN, CONSTRUCTION /</b> <b>CONSTRUCTION EXTENSION / RECONSTRUCTION /</b> <b>ADDITIONAL CONSTRUCTION / CHANGE OF THE USE</b> <b>OF FACILITIES</b> <b>AT ANWIL</b></p>	<p>Copy no.: <b>A</b></p>
<p>Preparation date: 27.11.2018</p>	<p>Update date: October 2023</p>	<p>Page update no.: Page: 35</p>

5. The equipment used for the aforementioned systems should factor in a potential explosive zone (EX equipment).
6. The radio control system must give the highest priority to messages from the Company Dispatcher.
7. The new industrial facility should have its own local radio station with the option to broadcast local announcements, unless organisational arrangements prefer otherwise (control from an existing site).
8. The conditions for the connection to the existing network of the Company Broadcasting System are defined by the IT Office of ANWIL S.A.

## **VII Environmental protection requirements**

1. All the stages of construction / construction expansion / reconstruction / additional construction / change of the use of ANWIL S.A. facilities, i.e. the stage of
  - planning,
  - search and analysis of location,
  - design,
  - construction,
  - implementation, assembly and commissioning,
  - research,
  - production and operation,
  - withdrawal from service or decommissioning
 must be performed in accordance with:
  - applicable environmental protection regulations,
  - rules in force at ANWIL S.A. as specified in the internal organisational regulations (IOR),
 in such a manner as to ensure that the environmental impact of each of the aforementioned stages is minimised.
2. The completion of all the aforementioned stages of construction / construction extension / reconstruction / additional construction / change of the use of ANWIL S.A.'s facilities should in particular ensure:
  - a) protection against pollution of all the components of the environment (soil, water and air), b) reduction of noise levels and limitation of harmful radiation through the proper selection and maintenance of equipment and devices,
  - c) reduction of pollutant emissions to the air, including dust levels, through the use of dust suppression measures,
  - d) use of water and the discharge of sewage, rainwater and snowmelt in a manner

agreed with ANWIL S.A.,

e) compliance with the prohibition on discharging pollutants into the sewage system of ANWIL S.A., in particular

liquid and solid chemical substances, waste generated in relation to the implementation of respective stages of construction / construction expansion / reconstruction /additional construction / change of the use of ANWIL S.A. facilities,

Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 36

- f) storage of the aforementioned substances/mixtures classified as posing a threat to health or the environment in accordance with environmental regulations and in locations agreed with the relevant Area of ANWIL S.A.,
  - g) repair in accordance with the requirements of ANWIL S.A. and administrative authorities, the environmental damage caused on the premises of ANWIL S.A. during works related to the implementation of respective stages of the construction/ construction expansion / reconstruction / additional construction /change of the use of ANWIL S.A. facilities by the person performing such works, responsible for the damage and environmental pollution,
  - h) immediate transmission to ANWIL S.A. (for calls made on the industrial premises of ANWIL S.A., telephone: 19 112, 19 998; for calls made from outside the premises of ANWIL S.A., telephone: 24 202 17 17, 24 202 10 70 ) information on any type of works and events that may affect environmental pollution, including the uncontrolled release of chemicals used (spillage, spillage, emission), any case of visible soil pollution and any intention to use equipment causing excessive noise or emitting harmful radiation during the implementation of respective stages of construction / construction expansion / reconstruction / additional construction / change of the use of facilities of ANWIL S.A. by the entity performing the works,
3. In terms of waste management for the stages related to waste generation:
- a) have an entry in the Waste Product Database (BDO) Register.
  - b) manage and record waste generated in accordance with the legal provisions in force
  - c) agree with ANWIL S.A. on the location of waste storage,
  - d) secure the waste collection/storage area against the weather conditions, access by unauthorised persons and mark it in accordance with the legal provisions effective in this regard,
  - e) remove waste from the place where it is generated on an ongoing basis; only store waste at the place where it is generated in quantities corresponding to the transport batch,
  - f) completely remove from the premises of ANWIL S.A., at the latest by the completion date of the works, such waste whose  
generation was related to the operations conducted by the entity, except for such waste as may be specified in the internal organisational regulation on the management of scrap metal and waste intended for resale at ANWIL S.A. (if applicable),
  - g) manage scrap metal pursuant to the internal organisational regulation on the management of scrap metal and waste intended for resale at ANWIL S.A. in force at ANWIL S.A. (if applicable),
  - h) place segregated municipal waste generated from the presence of employees on the premises of ANWIL S.A., in containers intended for the selective collection of municipal waste located in the area where the works are performed.
- Note 1** – in the case of high waste generation (by more than 10 employees), for a longer period (more than a week) – a permanent and systematic collection of municipal waste from the contractor of the works must be ensured by entering into an agreement by and between the contractor of the works and the municipal waste collector,



Area of Process Safety Prevention and Occupational Safety and Health Area, Environmental Protection Office, IT Office Production Management Board	REQUIREMENTS FOR OCCUPATIONAL SAFETY AND HEALTH, PROCESS SAFETY, FIRE SAFETY, CHEMICAL SAFETY AND ENVIRONMENTAL PROTECTION IN PROCESSES RELATED TO DESIGN, CONSTRUCTION / CONSTRUCTION EXTENSION / RECONSTRUCTION / ADDITIONAL CONSTRUCTION / CHANGE OF THE USE OF FACILITIES AT ANWIL	Copy no.: <b>A</b>
Preparation date: 27.11.2018	Update date: October 2023	Page update no.: Page: 37

**Note 2** – municipal waste containers must not be used for waste other than municipal waste, in particular hazardous waste.

- i) transfer waste only to authorised recipients holding the legally required permits,
  - j) provide the person responsible for the performance of the works under the Agreement on the part of ANWIL S.A., having completed the works and prior to their acceptance, with a collective data set on such waste as may be generated during the performance of the works under the Agreement. A summary of the waste generated, signed by the Ordering Party, should be attached to the acceptance report indicated in the body of the Agreement.
- A list of the requisite data from the Contractor to be provided to the Ordering Party is contained in the table below:

No.	Name of the installation on which the service was provided	Name and address of the company, which provided the service	Type of service provided	Code and catalogue name of the waste	Mass of waste generated	Waste management method	Will the waste be managed domestically or abroad
No.						R/D 2)3)	Domestically/abroad

- 1) Service: construction, deconstruction, object maintenance, cleaning of tanks or equipment, cleaning, conservation, repairs
- 2) R-recovery, D-disposal
- 3) Check the appropriate opt.

No.	Name of the installation on which the service was provided	Name and address of the company, which provided the service	Type of service provided	Code and catalogue name of the waste	Mass of waste generated	Waste management method	Will the waste be managed domestically or abroad
No.						R/D 2)3)	Domestically/abroad

- 1) Service: construction, deconstruction, object maintenance, cleaning of tanks or equipment, cleaning, conservation, repairs
- 2) R-recovery, D-disposal
- 3) Check the appropriate opt.

4. The management of halogenated greenhouse gases must be carried out in accordance with the currently applicable legal provisions, and:

- a) in the case of air-conditioning and refrigeration equipment, fire protection systems and electrical switchgear containing halogenated greenhouse gases, "F-gases," use refrigerants with the lowest possible GWP, i.e. below 750 GWP,
- b) in the case of new equipment containing F-gases or decommissioning of existing equipment, follow the standards adopted at ANWIL S.A. contained in the Internal Organisational Regulations.