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1 Subject of specification

This specification used in conjunction with other technical specifications of LOTOS Group S.A. establishes the minimum requirements for preparation of basic documentation.

2 Scope of validity

This specification applies to the preparation of tender documents, inquiries and contracts concerning new investments and modernization projects planned by LOTOS Group S.A.

It shall also be a basis for preparing both detailed specifications and inquiries for individual or package unit supplies.

2.1 Deviations

Any deviations from this specification and relevant specifications, standards and documents, including the bidder's proposals indicating a more economic design or solution, shall be submitted in writing for checking and approval by LOTOS Group S.A. No deviation or modification shall be permitted unless confirmed in writing by LOTOS Group S.A.

The bidder shall present in written form any ambiguity in this standard or any other LOTOS Group S.A standards as well as conflict with referenced documents/standards, and shall receive LOTOS Group's written explanation.

3 Definitions and markings:

- DCS – Distributed Control System.
- SIL – Safety Integrity Level.
- P&ID – Piping and Instrument Diagram.

4 Basic documentation

Basic documentation – shall be supplied in three (3) copies and also in an electronic form (editable source files).

The Basic Documentation shall be the basis for giving opinions, agreements, approvals, development of the detailed engineering, offer enquiries, and it shall include, as a minimum, the following:

4.1 The Plot Plan (a drawing showing the arrangement of equipment) indicating the Battery Limits and, if necessary, a division of the plant into sections

4.2 Process documentation

4.2.1 A description of the process, a simplified block diagram (PFD), P&I diagrams for the process system, ancillary media, dumps (discharges) and sewerage.

4.2.2 Protecting functions. The definition of risk and SIL levels.

4.2.3 Specifications describing the quality and the properties of the charge materials, products, catalysts and chemicals.

4.2.4 A set of analyses necessary to run the plant.

4.2.5 A specification of the media stating the steel grades for pipeline construction.

4.2.6 Guidelines for disciplines.

4.2.7 The product yield indicators, and the consumption indicators for energy media, fuel and chemicals.

4.2.8 Energy balance.

4.2.9 A list and description of protections against pressure buildup.

4.2.10 Description of connections at battery limits.

4.2.11 Emission of pollutants to the atmosphere.

4.2.12 The methods of management of waste, used catalysts, slimes, sediments from vessel cleaning, and other production waste.

4.3 Documentation of mechanical equipment:

4.3.1 List of vessels, machines and equipment.

4.3.2 Specifications and required characteristics of vessels, machines and equipment.

4.3.3 Guidelines for the selection of materials.

4.3.4 Guideline drawings of vessels.

4.4 Documentation of pipelines:

4.4.1 Line list (In Microsoft Excel - in Polish language) according to Specification 6600 - attachment 8.

4.4.2 Piping layout

4.4.3 Pipeline material class specification (in Polish language)

4.4.4 List of pressure safety valves for piping protection (In Microsoft Excel – in Polish language)

4.4.5 Supports standards

4.5 Construction documentation and documentation of steel structures:

4.5.1 A technical description of the basic solutions.

4.5.2 A plot plan showing the arrangement of all building objects and steel structures in a scale of 1:100.

4.5.3 Conception drawings in a scale of 1:50 for all building objects and steel structures, showing the main dimensions and heights, and the maximum dimensions of the main elements such as columns, beams, foundations etc. These drawings should include all projections, views and sections required for working out the detailed engineering of building objects and steel structures. The above-mentioned drawings should contain information about the maximum design loads on foundations from vessels, machines and pipelines for an inactive plant and during its operation. The drawings should also show surfaces necessary to ensure access for repair equipment, disassembly and assembly, as well as stairs, ladders and service and repair platforms.

4.6 Documentation of instruments:

4.6.1 P&I diagrams.

4.6.2 Description of control and protection systems.

4.6.3 Specifications of control and measuring instruments (including the DCS).

4.6.4 The arrangement of control and measuring instruments.

4.6.5 Instruments supply systems.

4.6.6 UPS (uninterrupted power supply) systems.

4.6.7 The arrangement of the control room equipment.

4.6.8 A technical description of the system for detection of hazardous substances and, for closed facilities containing process installations, oxygen-in-air concentration measurement.

4.7 Electrical documentation.

4.7.1 A list of motors and other consumers together with the necessary technical data

4.7.2 The balances of installed power, demanded power and energy.

4.7.3 Calculations of power and short-circuit currents.

4.7.4 The location of consumers and motors together with cable routes.

4.7.5 Cable list.

4.7.6 A full single line diagram of consumers supply

4.7.7 A single line diagram of the medium-voltage switchboard.

4.7.8 Single line diagrams of low-voltage switchboards and switch-houses.

4.8 Telecommunications documentation:

4.8.1 A technical description of applied fire-signaling systems with connections to existing systems.

4.8.2 A technical description of the telephone network together with its connection with the existing network

4.8.3 A technical description of the loudspeaker system and local communications.

4.8.4 A technical description of the closed-circuit television.

4.8.5 A technical description of access control devices and their connection with the existing network.

4.8.6 A technical description of burglar signaling devices and their connection with the existing network.

4.9 Documentation of work safety and fire protections:

4.9.1 Drawings and a description of explosion hazard zones.

4.9.2 A general characteristic of the object with respect to health and safety at work.

4.9.3 A list of occurring toxic, dangerous and harmful substances.

4.9.4 A description of the fire protection systems taking into consideration the need to possess certificates of Polish certifying institutions for these systems.

5 Codes and standards

- Specification 1170 – Environment and safety.

6 Record of changes

No.	Date	Description	Introduced by
1	22.03.2006.	This specification entirely replaces the specification rew. 0. Cancelled point 4.4.2.	B. Kowalewski
2.	14.11.2006	Changed point: 4.4.1 and title of specification added points: from 4.4.2, to 4.4.5	B. Kowalewski
3.	12.05.2011	Changed point: 4.4.1 and 4.4.4.	Z. Nowakowski
-	31-08-2015	Page layout corrections, no contents changes.	T. Wróbel