

Engineering, Procurement & Construction Contract

**SRU K-1, K-2 AND 10K-1 WASTE HEAT
UTILIZATION FOR STEAM PRODUCTION
USING MECHANICAL VAPOR
RECOMPRESSION (MVR) TECHNOLOGY AT
PUBLIC COMPANY ORLEN LIETUVA
MAŽEIKIŲ ST. 75, JUODEIKIAI VILLAGE, LT-
89453 MAŽEIKIAI DISTRICT MUNICIPALITY,
LITHUANIA**

ANNEX No.3

DETAILED ENGINEERING DESIGN REQUIREMENTS

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ANNEX 3 – DETAILED ENGINEERING REQUIREMENTS

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Note:

The detailed TECHNICAL DOCUMENTATION to each discipline shall be composed by volumes. Each volume shall be divided into sections and subsections. These shall be bound into hard covers, each drawing protected by plastic envelopes. Each volume shall include detail documents index list. In list shall be provided information about each document included in volume (Document title, document number, document issue date, document revision number and number of pages in document. Document index list shall be included as first page in volume folder.

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3.1 GENERAL REQUIREMENTS

All standards and regulations shall be used of newest revision or edition.

CONTRACTOR shall be legitimated according Lithuanian law requirements and shall have all required permits and certificates according STR1.02.01 requirements.

3.1.1 CONTRACTOR shall appoint SPSC certified specialists or acknowledged by SPSC foreign (EU Countries) specialists:

- Design Manager
- Design Parts (Sections) Managers (i.e. Civil, Electrical, Instrumentation and etc.)
- Design and Design Parts (Sections) Supervision Managers
- Construction Works Manager
- Construction Works Managers for special parts of construction works (i.e. Civil, Electrical, Instrumentation and etc.)

3.1.2 System of measurement shall be in SI system or non-SI units accepted for use with the SI units if measurement units is not specified otherwise in ANNEX 4 (*ORLEN Lietuva Technical specification*) or annexes of this contract.

3.1.3 All drawings' and documents' shall be printed on ISO paper formats.

3.1.4 After construction works will be finished CONTRACTOR shall issue "As Built" DETAILED DESIGN revision with all design changes included in this revision.

3.1.5 Technical requirements for submission of soft copies of design documentation:

- CONTRACTOR shall submit duly signed, scanned design documentation in PDF files as well as in original files (MTOs and scope sheets shall also be presented in MS Excel files).
- CONTRACTOR shall present drawings in dwg/dxf file format.
- Drawings and text documents shall be scanned for minimum 200 dpi resolution.
- Each drawing shall be presented in a separate PDF file. The name of file shall consist of identification code (number) of drawing and number of revision.
Text documents shall be presented in PDF and DOCX file. The name of file shall consist of the name of document or acronym

3.1.6 The OWNER has Technical Documents Archive (further – TDA) in which are stored drawings and design documentation (further – TDA Documentation) of existing facilities. By request of CONTRACTOR OWNER can provide copies of particular TDA Documentation of existing facilities to CONTRACTOR for information purposes only. TDA Documentation will be provided by OWNER "as is" and can be obsolete. CONTRACTOR shall check on-site existing situation and verify TDA Documentation before use it for design or other purposes. OWNER won't accept any claims or delays because of any inaccuracy or improper data found in TDA document's provided by OWNER.

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3.2 DETAILED DESIGN

3.2.1 Design documentation of a construction works (further - DETAILED DESIGN) - means a set of documents, the composition of which are established by normative technical construction documents, which contain solutions of a construction works conceived by the builder (OWNER) (text, parts of a design documentation, calculations, drawings) and are intended for legalization and carrying-out of construction of a construction works.

3.2.2 The DETAILED DESIGN works has to be made in two stages:

- TECHNICAL DESIGN (Techninis projektas) - 1 stage of DETAILED DESIGN, Design package required to obtain Permit for Construction;
- WORK DESIGN (Darbo projektas) - 2 stage of DETAILED DESIGN, Complete Design package issued for construction;

The DETAILED DESIGN has to be made according to Best Engineering Practice and shall meet Codes and Regulations and legal acts effective in the Republic of Lithuania, specifications and technical requirements specified in the ANNEX 1 (BEDP) and ANNEX 4 (*ORLEN Lietuva Technical specification*). The most stringent requirements between local codes and LICENSOR requirements should be used. However if they contradict each other than local codes should be used.

3.2.3 All design drawings and text documents shall be made in black font/lines on white background. Any other colors or tones of grey are not allowed.

3.2.4 Design part shall consist of documents recommended in STR1.04.04 annexes 8, 9, 10.

3.2.5 Management of status and revisions of design documentation and drawings:

3.2.5.1 Revision and status must be specified for every design text document or drawing,

3.2.5.2 The status may be:

- For information. This status is used when drawings are issued before finalization when they are needed for intermediate agreements, presentation of main design solutions;
- For ordering. This status is used before finalization when the status of provided design documentation is sufficient to order long-lead materials or other materials and equipment critical in terms of delivery;
- For approval. This status is used for intermediary approval of documents;
- For obtain construction permit. This status is used to provide TECHNICAL DESIGN documentation to Municipality online over “INFOSTATYBA”;
- For construction. This status is used for final and OWNER approved design documentation revision which can be proceeded with construction. All revision clouds and revision numbers must be deleted. As well this status shall be used for expertise.
- As built. This status is used for design documentation issued at the last stage of designing after completion of construction which incorporates all changes of design solutions agreed by the designer.

3.2.5.3 Construction is allowed on the basis of design documents ‘For construction’ only.

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3.2.5.4 Any amendments, additions, corrections of design documentation are made in the form of new revision of design solutions with new revision number assigned. In case of multiple amendments, additions, corrections of design documentation, each time new revision of such documentation shall be assigned. Amendments, additions, corrections of design documentation are formalized as prescribed by LST 1516:2015. Areas of drawings that have been recently revised must be shown with revision cloud placing triangle with the number of revision next to it. Previous revision clouds and revision numbers must be deleted.

3.2.5.5 Minor changes of design solutions during construction may be made by hand in construction contractor's documentation. Changes made by hand must be agreed with the designer against its signature in the drawing. Agreement may be made in writing using electronic means of communication.

3.2.5.6 Revisions of all documents issued prior to the status 'For construction' shall be designated in figures 1, 2, 3, etc. Revisions of documents issued with the status 'For Construction' shall be revision "0", all previous revision clouds on revision "0" must be deleted. All further revisions and 'As built' revision shall be designated in Latin alphabet letters A, B, C, etc.

3.2.6 In case of any ambiguities concerning the scope of or technical requirements for designing designer must address the OWNER for clarification in writing. The OWNER does not present any explanations on the application of legal acts or technical regulations for construction effective in the Republic of Lithuania.

3.2.7 Design documentation transferred for agreement must be compiled into design part file. Separate documents or design part, as long as it is not fully completed, are not accepted for agreement.

3.2.8 The OWNER shall accept the following separate preliminary documents for agreement:

3.2.8.1 PFD, P&ID;

3.2.8.2 Process equipment layout plan;

3.2.8.3 Electrical key one line diagram and single line diagrams of switchgears, panels (SLD);

3.2.8.4 Plot plan;

3.2.8.5 Layouts of electrical, instrument rooms;

3.2.8.6 Data sheet, specifications of LLI;

3.2.9 When new revision 'For Construction' of design part is issued and only part of design documentation was amended, only documents which were amended may be presented for agreement. In this case, updated design part deliverable list must be always presented.

3.2.10 Prior to presentation of design part for agreement the designer must perform all internal agreements of this part with other parts of the design and present a proof that such agreement was actually made (e.g. internal form of agreement with signatures of other DPM collected on this form or signatures of other DPM on the documents of design part presented).

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3.2.11 Where it is reasonable to break design part into separate subparts according to the location of designed area or other attributes, then design part shall be made in books/volumes and only fully completed book/volume shall be presented for agreement.

3.2.12 After the OWNER reports its approval to the design (design part/book/volume), the designer shall make 2 hard copies and soft copy signed by DM and DPM in Memory stick and shall transfer the same with transmittal to the OWNER.

3.2.13 WORK DESIGN (Darbo projektas) should satisfy the TECHNICAL DESIGN (Techninis projektas).

3.2.14 DETAILED DESIGN works shall be done in accordance with STR1.04.04 requirements.

3.2.15 DETAILED DESIGN prepared by CONTRACTOR shall be:

- Drawings and explanatory notes in Lithuanian and English languages. Translation can be on the same drawing.
- All other technical documentation and calculation in English and Lithuanian language.

3.2.16 Documentation for Building Permit and Operating Manuals shall be in Lithuanian language.

3.2.17 For Building permit shall be issued TECHNICAL DESIGN (Techninis projektas) and shall consist of documentation listed in Technical Regulation for Construction – STR 1.04.04 and ANNEX 4 (*ORLEN Lietuva Technical specification*)

3.2.18 TECHNICAL DESIGN is ready for permit when:

- Reviewed by OWNER including LICENSOR review;
- Duly signed by CONTRACTOR appointed certified designers;
- Pass Expert examination of design documentation and received positive conclusion;
- Approved by OWNER by separate approval document.

3.2.19 DETAILED DESIGN package prepared by CONTRACTOR shall meet the following regulations:

- Legislations of Republic of Lithuania;
- Law on construction of Republic of Lithuania;
- Codes of Republic of Lithuania for various technical areas;
- Technical Regulations for Construction;
- LICENSOR requirements specified in the BEDP;
- ANNEX 4 (*ORLEN Lietuva Technical specification*).

3.2.20 DETAILED DESIGN Review by LICENSOR

LICENSOR will review DETAILED DESIGN documents for conformance with BEDP requirements, and then advise any comments. To the extent possible, LICENSOR will provide any comments within ten (10) working days, otherwise, in the event that for any aspect that LICENSOR considers more than ten (10) working days will be required, the schedule shall be mutually agreed in writing between the parties. This statement must be considering by CONTRATOR when preparing the TIME SCHEDULE;

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- 3.2.21 Codes and Regulations of Republic of Lithuania are available in Lithuanian language only;
- 3.2.22 In case if it is necessary to use foreign Codes, except EU directives, CONTRACTOR shall get written permit from respective department of ministry. Procedure of request of permit described in Technical Regulations for Construction STR 1.01.02;
- 3.2.23 Each detailed layout drawing shall include a "KEY PLAN" indicating the actually detailed area with a scale layout sketch of the plant;
- 3.2.24 Each package of engineering design shall be accompanied by an "Issue Index", Hardware and software version, indicating list of contents, number and date of the respective "Transmittal Letter", and the latest revision numbers of the design document;
- 3.2.25 CONTRACTOR shall issue and maintain Design Master Document Index list (further – MDL) during all project implementation stages. In this list shall be provided information about each document/drawing:
- Document/drawing title;
 - Document number;
 - Document issue date;
 - Document revision number;
 - Document status;
 - Number of pages in document/drawing.
- 3.2.26 MDL shall be updated each time when CONTRACTOR issue new (or new revision of) documents/drawings and transmitted to OWNER electronically;
- 3.2.27 The recommended scales only in standard EN ISO 5455 shall be used;
- 3.2.28 CONTRACTOR shall prepare 2 hardcopies of design documents and drawings packages "As Build" on the basis of documents marked-up manually by OWNER. CONTRACTOR shall provide as well all "As Build" documents and drawings copies in native file format and in .pdf format on Memory stick. Each drawing shall be in separate file, file name shall consist of drawing number and revision e.g. "123-10140-rev0.dwg, 123-10140-rev0.pdf". Multipage text (specifications, explanatory notes and similar) documents shall be provided each in separate multipage native file (xls; doc; etc) and in .pdf file. File name shall consist of document number and revision, if document has it. Otherwise shall be used title of document as filename.
- 3.2.29 According to Lithuanian Civil Regulation design documentation should be designed and/or accepted by designer with Lithuanian authorization;
- 3.2.30 Steel structures for heaters and stack shall be approved regarding mechanical strength calculation by a designer with Lithuanian authorization as well;
- 3.2.31 All technical documentation issued by CONTRACTOR shall be authorized, dated, with indicated status (for example: "For information", "For review", "For approval", "For inquiry" or "For construction");
- 3.2.32 Design must meet all Lithuanian Hygienic Regulation;
- 3.2.33 Examination of design documentation by certified experts;

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Expert examination of a design documentation of a construction works' means evaluation of implementation in the design documentation of a construction works of the essential requirements for a construction work. Expert examination of a design documentation of a construction works of exceptional significance shall be mandatory. Construction works of exceptional significance means a construction works in which dangerous substances are used or stored (not exceeding the set limits of their amount); a construction works in which potentially dangerous equipment are situated or potentially dangerous works are performed; a construction works of complex structure and complex technologies (according to features of complexity and technical parameters set by normative technical construction documents); a building used for public needs in which more than 100 people are present at a time; a construction works of cultural heritage. A list of construction works assigned to the category of construction works of exceptional significance shall be approved by an institution authorized by the Government. The expert examination of design documentation shall be carried out by an institution authorized by the Government. More detailed explanation see in STR 1.04.04.

3.3 PROCESS ENGINEERING DESIGN PACKAGE REQUIREMENTS

3.3.1 Process Design Package;

3.3.2 Capacity of the Plan/Unit - Rated and minimum capacities of the Plant/Unit calculated as annual on stream time;

3.3.3 Battery Limit Connections - Interconnections between the Plant/Unit and other refinery units and systems, description of battery limits connections;

3.3.4 Characteristic of Feedstock, Products, Catalysts, Chemicals and Lubricants (to supplement and update Basic Design);

3.3.5 Specification of quality, properties and compositions for feedstock and products, indicating the standards to be applied for the respective laboratory test methods.

3.3.6 Specification of quality, quantity and other properties of catalyst, clay, chemicals, lubricants and other charges;

3.3.7 Detailed Description of Process and Control Systems;

- Detailed description of process and control systems, defining machinery and equipment and control loops by tag number and specifying typical process variables;
- Description of the function, interconnection and operation of all process equipment and instrument involved in primary and secondary processes;
- Description of all checking, sampling and analysis procedures required for the normal operation of the process;
- Detailed description shall be given for alarm and shut-down systems. A tabulation of alarm and shut-down functions shall be attached, including a specification of the set points for the respective process variables;
- Description of the process shall include, in addition to that, the primary and secondary processes to be used for the disposal and neutralization of wastes and contamination;
- A tabulation of process parameters for each operation case shall be attached.

3.3.8 Detailed description of Utility Systems - Detailed description of utility systems: steam, condensate, instrument air, fuel, plant air, inert gas, blow down, drainage and slops, heat

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- tracing, powering reliability and buck-up power requirements, grounding and equipotential bonding system including caustic solution, purges;
- 3.3.9 Material and Energy Balance (to supplement Basic Design)
- Complete balance for the process unit, within the battery limits, for the design (when necessary) feedstock cases. Process stream data at the inlet and outlet of each item of equipment will be presented. Multiple phase streams will be flashed and separate phases shown;
 - Every stream will show at least the following information: component rates for liquid and vapor phase; temperature, pressure, liquid and vapor phase enthalpies; vapor mole fraction; densities (for gas: on normal conditions and on operating conditions, for liquids: on 20°C and on operating conditions); specific gravity, flow rates on operating conditions, mol wt. viscosity and thermal conductivity on operating conditions, latent heat, comp. factor. ASCII-File, with the content specified above, should be provided;
- 3.3.10 Consumption of Utilities and other materials - Consumption values of utilities, electric power and auxiliary materials, lubricants, chemicals and catalysts, specified individually for each consumer and for each operating case in the section. Plant overall consumption summary for normal and peak consumption;
- 3.3.11 Safeguarding against over pressuring
- Description of processing sections to be operated within battery limits at various pressure levels as determined by process or by requirements for authority approval, with detailed information on the interconnections and sectioning provisions;
 - Detailed description of operating cases, blow down rates and simultaneous operations taking into consideration the sizing of safety relief valves;
 - Calculation methods for the sizing of relief valves, with reference to the respective codes.
 - Calculation methods for the sizing of flare header inside Battery Limit;
 - Summary of relief valves;
 - The table of the relief valves involved, their location, the determining cases, the routing of the fluid.
- 3.3.12 Description of Plant Layout. Description of plant lay-out which shall contain:
- access provision for the Plant;
 - access roads and paving;
 - draining and fire water system within battery limits;
 - service areas for maintenance activities within battery limits;
- 3.3.13 Manpower Requirement for Unit Operation - Required manpower determined on the basis of work time comprising 8-hour shift per day;
- 3.3.14 Principle Schemes of Instrumentation and Control Systems and Logic Diagrams. Detailed description of instrumentation functions. Description of individual Hardware and Software functionality and special control systems for each Unit. Detailed description the philosophy of Control System service by process operator. Description of main logic schemes as: heaters firing logic, recycle gas compressor logic, make-up gas compressor logic, electric heaters control logic, etc.;
- 3.3.15 Description of Operating Procedures for Equipment and Instrumentation according to VENDOR'S Documentation. Detailed description of operating procedures for Start-up and Shut-down operating of rotating machinery, heaters and instruments. Full description of Start-up and Shut-down procedures including Start-up and Shut-down schemes. CONTRACTOR shall provide the documentation in Lithuanian and English languages. Documentation in Lithuanian language has to be coordinated, agreed with OWNER. In case of different requirements in

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- mentioned here above documents CONTRACTOR should gain an approval from OWNER which requirement implement;
- 3.3.16 Equipment List. The equipment list shall include all the itemized equipment according to CONTRACTOR'S P&ID's and shall specify the data introduced in the Basic Design Package;
- 3.3.17 Safety Valves and Rupture disks List (part of piping documentation). The list of safety valve and rupture disks shall be given in a breakdown by equipment, indicating the tag, quantity, service, manufacturer type, nominal diameter and pressure rating (inlet/outlet), set pressure, test spring pressure, required/selected orifice, required/ max flow rate for each safety valve. Approved actual manufacturer certificates are required;
- 3.3.18 Control Valve List. List of all control valves shall consist: tag number, service, flow rates, the description of response mode in the case of power supply failure and value of set points required for normal operation. Control valve list also should represent min, normal and max conditions (flowrate, temperature, pressure, pressure before and after valve). Specification sheet should include calculated and actual Cv and catalogue reference;
- 3.3.19 Alarm and Shut-Down Set Points. List of set points for alarm and shutdown functions. This list shall be tabulated and listed all the set points for pre-alarm, alarm and shutdown functions. The list shall indicate: tag number, service and value of set points.
List of coverage switch POS and MOS.
- Cause and effect diagrams.
 - Description of interlock and shutdown systems.
- 3.3.20 List of Special Equipment. This list shall contain all the special equipment which cannot be fitted into any of the above specified lists.
Note: The Detail Engineering Package should include all operations (maintenance instructions and procedures from equipment manufacturers). Submitted documentation shall be in English and Lithuanian languages.
- 3.3.21 Laboratory Schedule.
- 3.3.22 General description of analytical control system. Specifications of all necessary analyses of raw and auxiliary materials, products, intermediate streams, utilities, wastes and waste waters, ambient atmosphere, etc. Specification shall include:
- number of samples;
 - determination of fluids being the subject of analysis, giving its composition and possible variations of individual components according to operating conditions;
 - required analysis (components) with range of accuracy;
 - points from which samples to be taken, giving the symbol of equipment, piping, etc. with mark on process flow diagram;
 - characteristic of sample;
 - way of sampling with description and list of devices used (where required), frequency of analysis (per hour, per shift, per day etc.) during start-up and normal operation;
 - list of standard methods of analysis ASTM or detailed description of nonstandard analytical methods with the list of necessary laboratory equipment and materials as well as determination of time required for performing the individual analysis.
- 3.3.23 List of On-line Analyzers. Specification of on-line analyzers giving type of equipment, name of manufacturer, technical data, description operation, operating conditions, etc. Operating and maintenance manuals for the individual types of analyzers. Necessary drawings and information required for proper installation for the supplied analyzers;
- 3.3.24 Atmospheric Pollution. Kind and quantity of emission into atmosphere as: normal emission. Yearly average rate, way, frequency irregularity of blow-downs:

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- emergency emission. Estimated rates, emission factors, fugitive emissions with number of places where leaks are possible to occur;
 - Kind and characteristic of equipment used to the emission control with calculations justifying its choice;
- 3.3.25 Technical characteristic of emitters with the following emission conditions:
- Kind of emission (chemical composition);
 - Quantity of emission E (MGC-megagram per second, m³/s, mg/Nm³, gram/s), flow - m/s;
 - Coordinates of emission source. Coordinates XYZ (meters), coordinate system LKS-94;
 - Emitter height H (meters) selected to provide required dissipation and safety work;
 - Emitter ID at outlet (meters);
 - Temperature of gases "T" (°C);
 - Specific heat of gases "Cp" [J/(m³ (normal)°C)];
 - Calculations justifying the choice of emitter heights;
- 3.3.26 Sewage. Kind and rate of sewer streams. Source, frequency and irregularity. Kind and concentrations of contaminants outgoing to sewers. Yearly and max. daily contaminant loads, physical and chemical properties of sewers, temperature, pH, content of salts and organic compounds.
- Type and characteristic of equipment used to clean sewer (if any).
- Following data should be given for Sewage System:
- quantity and sort of wastes;
 - source of formation;
 - If stream can be solid below +36 °C there should be provided pour point (°C), freezing point (°C) and required equipment or procedure to clean up the surrounding equipment;
 - impurities sent to sewage, their type and concentration;
 - temperature, pH, salts and organic compounds content;
 - physical and chemical characteristic (COD, BOD, HC, pH, suspension, heavy metals, sulphides, amine, caustic, NH₃);
 - material balance of process waters and effluent including specification of all injection and emission points;
 - equipment for effluent treating (if any).
- 3.3.27 Wastes (including also: spent catalysts, inserts, caustic, sand, filtration cartridges, active carbon etc.), (based on LICENSOR package and CONTRACTOR'S scope of supply). Kind and quantities of wastes, source location, way, frequency and irregularity of their disposal. Content, heat value, humidity, mineral parts, density and other properties of wastes. Fractional analysis of the waste as regards its dimension i.e. percent of 10-200 µm and other fractions.
- Morphological subdivision for heterogeneous wastes.
- Lithuanian regulations and standards should be followed when designing and calculating.
- All other parts of the plant engineering design should take into account the information included in this volume.
- Possible Methods of utilization of wastes.
- 3.3.28 Classifying of the explosion hazard areas and explosion risk assessment. Classifying of the explosion hazard areas should be performed in accordance with valid regulations, guidelines, norms and OWNER rules and specifications and standards LST-EN-60079-10, for zones extents can be used API 505 the latest edition. For explosion risk assessment must be used EN 1127-1 "Explosive atmospheres. Prevention and protection against explosion". Contractor should take into account: Regulation of the Ministry of Social Security and Labor of the Republic of Lithuania of 30 September 2005 Safety regulation of Employees on working places where

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explosive atmosphere can be present (Darbuotoju, dirbančių potencialiai sprogioje aplinkoje, saugos nuostatai, patvirtinti Lietuvos Respublikos socialinės apsaugos ir darbo ministro 2005 m. rugsėjo 30 d. įsakymu Nr. A1-262); Regulation of the Ministry of Economy of The Republic Of Lithuania 21 May 2002 on the Technical Regulation for the equipment and protection systems intended for use in explosion hazard areas (Įrangos ir apsaugos sistemų, naudojamu potencialiai sprogioje aplinkoje, techninis reglamentas, patvirtintas Lietuvos Respublikos ūkio ministro įsakymu 2002 m. gegužės 21 d. Nr. 184), LST EN 1127-1 Explosive atmospheres. Explosion prevention and protection. Basic concepts and methodology.

Documentation in Lithuanian language has to be coordinated, agreed with OWNER.

In case of different requirements in mentioned here above documents Contractor should gain an approval from OWNER which requirement implement.

3.3.29 Pre-Commissioning / Commissioning procedures (based on LICENSOR's package and CONTRACTOR's package added to LICENSOR package).

3.3.30 Description of Pre-Commissioning Activities and Tightness Test with Diagrams and Procedure. This documentation shall contain all detailed instruction, description, procedure requirements, drawings for the work which should be done during the period from mechanical completion and Pre-Commissioning, up to when Plant will be ready for introduction of hydrocarbons. Pre-Commissioning / Commissioning Documentation should be breakdown according to the category of work (electrical, mechanical, instrumentation, work for flushing, blowing, tightness test, mechanical running test of machinery with diagrams and system identification circuits for flushing, cleaning and tightness test).

For each category it shall be listed all works, additional installation materials prepared description and requirements as well as standardized hours and quantity of each activity.

3.3.31 Description of Commissioning Activities, Start-Up and Normal Operation including Start-up schemes;

3.3.32 Shut-Down Procedure Including shutdown schemes;

3.3.33 Process Upsets and Emergency Procedures;

3.3.34 Sampling Schedule for Test Run;

3.3.35 Interlock and Shutdown Function Chart and Interlock and Shutdown Logic Diagrams;

3.3.36 Procedures for Performance and Evaluation of Guarantee Tests for Utility Section;

3.3.37 Maintenance Activities;

3.3.38 Diagrams and drawings;

3.3.39 Process and Utility Flow Diagrams;

3.3.40 Piping and Instrument Diagrams for Process Systems and Machineries. The Piping and Instrument Diagrams (P&ID) shall include all process and utility equipment and piping lines, all bypass lines, valves and instruments required for start-up, shut-down and safe operation of the Plant.

Connections to existing piping system shall also be indicated.

The following details shall be indicated:

- Each equipment with the indication of heating and insulation requirements, typical operating data and design data;
- Catalyst, absorbents, distillation plates, impellers and other internals implementation, replacement and loading procedures (including all necessary schemes and related equipment);
- Auxiliary equipment and their connections and instrumentation;
- Identification data and overall dimensions of equipment;
- Identification and size data and pipe class of piping lines;

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- Information of insulation and heat tracing by appropriate codes/symbols;
- Shut-off, throttle, needle, check and other valves. Valves symbol shall represent the required valve types (gate, ball, needle etc.), for safety valves and rupture disks incl. set values;
- All measurement, control (local, remote and automatic), alarm and regulation functions;
- Instrumentation symbols and tag numbers shall be in accordance with ISO 3511/1 specifications and final agreement with Owner on DETAILED DESIGN stage;
- Differentiated symbols for conventional instrumentation functions and Distributed Control System (DCS) functions;
- Connections between detectors and actuators of alarm and shutdown functions, signal types (electric or pneumatic), requirements for additional provision and protections (e.g. heat tracing);
- Operating failure conditions of control valves (Normal Open or Normal Closed);
- Drain, sample, vent and blow down points;
- Location data in accordance with process requirements (e.g. minimum or maximum elevation for erection), if there are special requirements. Branch-off connections, detection and control means, block valves, blinds, installed in piping lines shall be indicated in the sequence required by the operating process.

Provisions shall be made for isolating, draining or venting and calibrating during operation of each instrumentation item in direct contact with process streams by the use of appropriate blocking valves with exception on the standard solution.

3.3.41 Piping and Instrument Diagrams for Utility Systems. Utility Systems and distribution systems shall be illustrated by separate P&ID for each kind of utility with the indication of entrance and exit to and from processing section and of connections to existing headers.

Steam supply and condensate return for steam tracing shall be as follows:

- Steam and condensate manifolds shall be indicated on the respective Utility P&ID together with numbers of tracers connected to this manifold;
- The distribution of tracers exiting from steam manifolds and entering condensate manifolds, respectively shall be indicated in separate drawings;
- Sufficient information shall be provided to enable for any tracer the determination of:
 - the steam outlet and condensate inlet nozzle,
 - the reference number of the piping line or line section or instrument to be traced,
 - the size of the tracer.

3.3.42 Plot Plans.

Overall plot plan at scale of 1:250 which will indicate:

- Location of equipment within the Battery Limits (BL);
- Road location, inside BL;
- Maintenance access roads inside BL;
- Routes for overhead pipe bridges, channels for water and drainage;
- Electrical networks routes in relation to the equipment and building foundations;
- Underground piping layout;

The data for the Plot Plan will include all details indicating both the exact location and vertical and cross section of all the equipment in order to ensure the correct operation of the Plant, as well as the definition of noxious, explosion and fire hazard areas.

Final Plot Plan document shall include the table of all equipment and machinery showing the coordinates x-y-z dimensions L.H and dry weight of and specification for utility stations as a separate document.

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Plot Plan Review by Licensor. After determining the location of all equipment, but before making any irreversible construction commitments, CONTRACTOR must furnish to OWNER for LICENSOR review one copy of the first complete plot plan of the UNIT. LICENSOR will review the general equipment arrangement in the plot plan for conformance with LICENSOR guidelines and process requirements, and then advise any comments. To the extent possible, LICENSOR will provide any comments within ten (10) working days, otherwise, in the event that for any aspect that LICENSOR considers more than ten (10) working days will be required, the schedule shall be mutually agreed in writing between the parties. This statement must be considering by CONTRATOR when preparing the TIME SCHEDULE.

When preparing the final plot plan, the CONTRACTOR shall verify, and may modify, the indicated equipment locations and elevations to accommodate the piping arrangement, final equipment sizes construction sequence, etc. the CONTRACTOR is responsible for the final plot plan and shall confirm that all LICENSOR process requirements specified in ANNEX 1 are met.

3.3.43 Identification of fire risk zones:

3.3.43.1 Possible sources of fire, types of fire and parameters shall be identified for the designed facility;

3.3.43.2 Fire risk zones shall be indicated on the plot plan of the UNIT;

3.3.43.3 Fire risk shall be identified according to the OWNER's and normative documents.

3.3.44 Hazardous Area Classification. Hazardous area classification shall be done according OWNER rules and specifications and according LST EN 60079-10 standard (or standard shown as usable in this standard as example as API Recommended Practice 505, but it should be agreed by Owner).

Designer shall provide at least:

- Short description of process;
- Substances table (according LST EN 60079-10);
- Table of sources of release (according LST EN 60079-10);
- Hazardous zone identification analysis;
- Plan of hazardous area (elevations and sections) in scale. In plan shall be clearly marked extends of zones, dimensions of zones in horizontal and vertical directions and types of zones, temperature classes and gas groups;
- Explosion Risk Assessment shall be done according OWNER rules and specifications and according LST EN 1127-1 (if needed used risk matrix it must be AB "ORLEN Lietuva" matrix).

3.3.45 Layout Plan of Safety and Fire Protection Equipment;

3.3.46 Road And Paving Plan;

3.3.47 Electrical Layout Plan;

3.3.48 Underground Piping Layout;

3.3.49 Layout of Gas Detectors and Fire Detectors;

3.3.50 Layout of Tapping Analyzers and Analyzer Shelters;

3.3.51 Datasheets.

3.3.51.1 Heat Exchangers;

3.3.51.2 Pumps and Drivers with curves of performance;

3.3.51.3 Compressors;

3.3.51.4 Columns;

3.3.51.5 Reactors and Vessels;

3.3.51.6 Absorbers and towers;

3.3.51.7 Heaters;

3.3.51.8 Other Equipment and Machines;

3.3.51.9 Specification of Process Lines;

3.3.51.10 Specification of Instrumentation Equipment's;

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- 3.3.52 Final HAZOP study. Complete HAZOP study. HAZOP should be performed in accordance with valid European norms, standards, directives, CEI/IEC 61882:2016, IEC 61511-2016, OWNER rules and specifications. In case of different requirements in mentioned here above documents CONTRACTOR should gain approval from OWNER which requirement take into account. HAZOP study have to be done separately with LOPA study.

Before HAZOP study CONTRACTOR have to agree with OWNER:

- HAZOP execution time and agenda;
- preliminary arrangement of Nodes on P&ID;
- cause and effect diagram;
- risk assessment matrix;
- frequency of failure sources of equipment and safeguards;
- deviation terms;
- HAZOP group composition;
- HAZOP worksheet;
- SIL determination (by LOPA method).

Risk Assessment Chairman shall hold the certificate issued by the institution providing training to specialists in HAZOP risk assessment field for at least 5 years. If Risk Assessment Chairman services are purchased, the Chairman shall have at least 5 years of experience in process equipment risk assessment.

3.4 START-UP AND OPERATING MANUAL

- 3.4.1 The latest issue Operating Manual for each Process Unit should comprise:

- Chemistry;
- Process variables;
- Detailed description of process flow;
- Catalyst, clay loading;
- Detailed operating procedures;
- Detailed emergency procedures;
- Catalyst Regeneration;
- Commissioning Manual (According to API 700 and British Standard IP -Model Code of Safety Practice);
- Preliminary operations;
- Unloading and Handling of catalyst containing iron pyrites (if any) for period of reactors maintenance;
- Laboratory schedule;
- Safety requirements;
- Protection of Alloy steel;
- Purging and neutralizing;
- Descaling of process Heater tubes;
- Special Procedures.

- 3.4.2 Start-up and shut-down procedures for each Process Unit;

- 3.4.3 Procedures shall be prepared by CONTRACTOR in the Pre-Commissioning time;

3.5 INSTRUMENT ENGINEERING DESIGN PACKAGE REQUIREMENTS

Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*).

3.6 MECHANICAL ENGINEERING DESIGN PACKAGE REQUIREMENTS

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Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*).

3.7 PIPING DESIGN PACKAGE REQUIREMENTS

- 3.7.1 Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*);
- 3.7.2 These are minimum requirements for composition of documents to be observed by the designer for pressure piping part of the design. Designer may add any other documents which, in its opinion, are required to make design solutions clear. Minimum requirements for composition of documents may be changed upon written agreement with the Company. Design documents must be prepared according to requirements set forth in LST 1516:2015.
 - 3.7.2.1 Composition (non-exhaustive) of pressure piping part of design:
 - 3.7.2.1.1 Design part deliverable list;
 - 3.7.2.1.2 Design part explanatory note. In addition to other information, in explanatory note the following must be provided:
 - 3.7.2.1.2.1 Risk assessment of designed pressure equipment;
 - 3.7.2.1.2.2 Justification for selection of elements and materials under pressure;
 - 3.7.2.1.2.3 Assessment of failure mechanisms and corrosion;
 - 3.7.2.1.2.4 References to codes and standards the design is based on;
 - 3.7.2.1.2.5 Justification for selection of piping strength calculation (assessment) technique or method;
 - 3.7.2.1.3 Piping layout on plot plan. Piping layout must be shown on geodetic survey or excerpt of master plan received from the Company. Scale 1:500 or 1:200;
 - 3.7.2.1.4 Vertical and horizontal projections, cross-sectional, 3D views of more complex elements must be provided;
 - 3.7.2.1.5 Numbers of load-bearing structure supports must be provided in piping layout plan;
 - 3.7.2.1.6 Piping layout plan must show piping battery limits based on information provided by the OWNER.
 - 3.7.2.1.7 Piping isometric drawings. Isogen or any other equivalent piping isometric drawing production solution is recommended. Detailed list of elements shown must be provided in each isometric drawing, location of temperature sensors for heat tracing.
 - 3.7.2.1.8 Piping technical specifications.
 - 3.7.2.1.9 Summary list of designed piping to be provided as separate document of the design and in MS Excel format. The list must include the following details:
 - 3.7.2.1.9.1 Piping number assigned by the designer (if not assigned by the OWNER);
 - 3.7.2.1.9.2 Piping Ps and Ts, also piping test pressure;
 - 3.7.2.1.9.3 Steel grade and/or specification number piping design is based on;
 - 3.7.2.1.9.4 Piping heat tracing method and parameters (if applicable) – tracing temperature, steam cleaning temperature, insulation type and size, etc.;
 - 3.7.2.1.9.5 Piping PED classification;
 - 3.7.2.1.9.6 Name of substance/medium transmitted;
 - 3.7.2.1.9.7 Requirements for heat treatment (if applicable);
 - 3.7.2.1.9.8 Other special requirements, if any;
 - 3.7.2.1.10 Material take off (MTO);

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3.7.2.1.11 Stress analysis reports. Calculations must be made in International System of Units (SI). Designer shall evaluate flexibility of equipment or pressure vessels the piping is connected to. Stress analysis shall be done using dedicated pipe stress analysis software (e.g., Bentley Autopipe, Intergraph Ceasar II, etc.) in cases given in Item 5 of Specification OL-TR-MPR-001.

3.7.2.1.12 Designer shall prepare all necessary design documentation required for PED assessment and certification (when applicable). At least shall be provided: Result of the hazard analyses; Design and fabrication drawings and other relevant technical documentation; Particular Material Appraisal; List of applied harmonized standards; Design calculations / results of examination related to the design.

3.8 ELECTRICAL ENGINEERING DESIGN PACKAGE REQUIREMENTS

Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*). General explanatory note of the Project electro technical part shall have a detailed description of the designed power supply system, main and redundant power supply sources, decisions ensuring the required power supply reliability, automatic load transfer functions and their application, description of electric motor self-restarting, other electro technical decisions ensuring proper power supply to power users, protection of the designed object from lightning, high potentials, wandering current limitation decisions, grounding, lighting, cable routing, protection of electrical installations from fire, other decisions.

Designed object 3D model shall show cable routes, power panels, junction boxes of power, control and electrical heating circuits, electric actuators, local control stations.

Cable routes shall be installed avoiding fire sources; in case of necessity to cross them - respective fire protection measures shall be designed to ensure minimum 30 min. protection for cables and structures.

3.9 CIVIL ENGINEERING DESIGN PACKAGE REQUIREMENTS

Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*). Below listed regulations and rules must be considered:

- STR 2.06.04:2014 „GATVĖS IR VIETINĖS REIKŠMĖS KELIAI. BENDRIEJI REIKALAVIMAI“;
- KTR 1.01:2008 „AUTOMOBILIŲ KELIAI“;
- KPT SDK 19 „AUTOMOBILIŲ KELIŲ STANDARTIZUOTŲ DANGŲ KONSTRUKCIJŲ PROJEKTAVIMO TAISYKLĖS“;
- Regulations for vertical and horizontal marking of roads, rules for the installation of road signs and other normative documents of the Lithuanian Road Administration;
- Rules for selection, design and installation of road sign supports PJT KŽA 08.

3.10 UNDERGROUND / ABOVE GROUND FACILITIES PIPING ENGINEERING DESIGN PACKAGE REQUIREMENTS

Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*).

3.11 FIRE-FIGHTING AND SAFETY DESIGN

Design requirements specified in the BEDP and ANNEX 4 (*ORLEN Lietuva Technical specification*). Below listed regulations and rules must be considered:

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- 3.11.1 For the selection of installation area, consider the following NFPA-30 standard, Section 17;
- 3.11.2 Evaluation of the Company's fire-water supply system (pump house No.10, firewater pump stations No.1, No.2), required calculation of firewater flow rate. The whole UNIT territorial block shall be connected to the existing system valves/shut-off valves. Number of firefighting system hydrants, firewater piping diameter not smaller than 300Ø, number and capacity of fire monitors - based on API-2001.
- 3.11.3 If process equipment is at 30 m height or higher, then cooling systems have to be installed as per below listed requirements:
- NFPA-15,16
 - LST EN 12845 Stacionariosios gaisro gesinimo sistemos. Automatinės purkštuvų sistemos. Projektavimas, įrengimas ir techninė priežiūra;
 - LST EN 12259 Stacionariosios gaisrų gesinimo sistemos. Purkštuvų ir vandens purškimo sistemų sudedamosios dalys;
 - LST CEN/TS 14816 Stacionarios gaisrų gesinimo sistemos. Vandens purškimo sistemos. Projektavimas, įrengimas ir techninė priežiūra;
- 3.11.4 Design fire and gas detection alarm with the connection to the Central Control Room of the unit and to FRB Dispatcher's office. Design shall comply with the following norms and regulations:
- NFPA-72;
 - "Gaisrinės saugos pagrindiniai reikalavimai", patvirtintos Priešgaisrinės apsaugos ir gelbėjimo PAGD prie Vidaus reikalų ministerijos direktoriaus 2010m. gruodžio 7d. Įsakymu Nr. 1-338; "Gaisro aptikimo ir signalizavimo sistemų projektavimo ir įrengimo taisyklės". Patvirtinta priešgaisrinės;
 - PAGD prie vidaus reikalų ministerijos direktoriaus 2009m. gegužės 22d. įsakymo Nr. 1-168; "Bendrosios priešgaisrinės saugos taisyklės";
 - "Elektros įrenginių įrengimo taisyklės" (EĮIT);
 - LST 1516 "Statinio projektas. Bendrieji įforminimo reikalavimai". Vadovautis Gaisro aptikimo ir signalizavimo sistemos projektavimo ir įrengimo taisyklės patvirtinta Priešgaisrinės apsaugos ir gelbėjimo departamento prie Vidaus reikalų ministerijos direktoriaus 2007 m. vasario 22 d. įsakymu Nr. 1-66.

3.12 ERECTION ORGANIZATION DESIGN PART

Design requirements specified in ANNEX 4 (*ORLEN Lietuva Technical specification*).

3.13 CONSTRUCTION PERMIT

- 3.13.1 Procedure of request of permit for construction described in Technical Regulations for Construction STR 1.01.02;
- 3.13.2 Contractor shall prepare or obtain from other subjects all documents required to obtain permit for construction;
- 3.13.3 OWNER will issue Power of Attorneys to CONTRACTOR to authorize CONTRACTOR obtain all required documents for permit for construction from other subjects and provide all documents for permit for construction over Government Information management system "INFOSTATYBA" on behalf of OWNER;
- 3.13.4 To obtain permit for construction CONTRACTOR shall provide documents specified in paragraph 5 of Article 27 of REPUBLIC OF LITHUANIA LAW ON CONSTRUCTION:
- 3.13.4.1 An application;
 - 3.13.4.2 TECHNICAL DESIGN documentation, signed by SPSC certified designers;

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- 3.13.4.3 Design examination report with positive conclusion done by SPSC certified experts, (Design examination contractor will be hired by OWNER);
- 3.13.4.4 Power of Attorney provide documents on behalf of OWNER;
- 3.13.4.5 Land owning documents (OWNER will provide to CONTRACTOR copies of such documents);
- 3.13.4.6 Environmental Impact Assessment documents approval (the final report of EIA will be provided by OWNER prior before contract effective day);
- 3.13.4.7 Sanitary protection zones plan (drawing)(will be provided by OWNER upon request);
- 3.13.4.8 Designer's mandatory insurance document copy;
- 3.13.4.9 Design documentation handover to OWNER act;
- 3.13.4.10 Overall process of obtaining permit for construction typically can take about from 25 to 45 working days after all documents will be submitted over "INFOSTATYBA".

3.14 CONSTRUCTION COMPLETION

- 3.14.1 Procedure of request of Certificate of Construction Completion described in Technical Regulations for Construction STR 1.05.01;
- 3.14.2 Contractor shall prepare or obtain from other subjects all documents required to obtain Certificate of Construction Completion;
- 3.14.3 OWNER will issue Power of Attorneys to CONTRACTOR to authorize CONTRACTOR obtain all required documents from other subjects and provide all documents to obtain Certificate of Construction Completion over Government Information management system "INFOSTATYBA" on behalf of OWNER;
- 3.14.4 To obtain Certificate of Construction Completion CONTRACTOR shall provide documents specified in Construction Technical Regulation STR 1.05.01:2017 "Construction permits. Construction completion. Construction suspension. Elimination of effects of unauthorized construction. Elimination of effects of construction under illegal permit." section two:
- 3.14.5 An application;
- 3.14.6 Last revision of DETAILED DESIGN if design changes were made;
- 3.14.7 A free form statement signed by the constructor confirming that no changes were made (if they have not been made) to the solutions of the construction design for which the construction permit was issued;
- 3.14.8 A free form statement signed by the constructor on the construction design changes describing the changes to the major design solutions and the explanations why such changes did not require obtaining a new construction permit;
- 3.14.9 The list of documents to be provided to the commission (as required by Annex 10 of the Construction Technical Regulation STR 1.05.01:2017)
- 3.14.10 Construction design (hard copy) with an indication of 'As-built', name and surname of construction manager and construction technical supervisor or construction design (hard copy) and certificate of conformity to construction design with its formal requisites approved by the Head of the Inspectorate. 'As-built' must be indicated in the technical specifications of the basic design and drawing of DETAILED DESIGN or technical specifications and drawings of the detailed engineering design. 'As-built' must be indicated in the DETAILED DESIGN drawings in cases specified in Articles 45 and 46 of Construction Technical Regulation STR 1.04.04:2017 'Construction Design. Expert Examination of Design Documentation'.
- 3.14.11 Geodetic survey according GKTR 2.01;
- 3.14.12 Copies of documents confirming the qualification (certificates, etc.) of the participants in the construction process.

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- 3.14.13 Copies of mandatory insurance documents of the participants in the construction process, i.e. copies of insurance policies for the civil liability of construction designer, contractor for design (or part thereof) expertise (if expertise services contract was concluded after 31 December 2016) and construction technical supervisor for construction, reconstruction, maintenance, upgrade (modernization), demolition as well as maintenance of cultural heritage objects (if construction works started after 31 December 2016, for construction works that started before 31 December 2016 - contractor civil liability) in accordance with the laws of the Republic of Lithuania (if insurance is required under Article [8.3] of the Law on Construction). Copies of payment documents must be submitted together with the copies of mandatory insurance policies.
- 3.14.14 Construction log completed in accordance with applicable procedures, reports of hidden works and load tests for load-carrying frameworks, reports of visual inspection and testing of engineering systems and utility networks (where required by law), also supplementary construction logs (if any maintained). In case of installation of gas lines and their inlets, technical passport of the gas line can provided instead of construction log.
- 3.14.15 Geodetic survey maps of the land according GKTR 1.01 requirements;
- 3.14.16 Declarations of performance for used construction products that affect the conformity of the construction to the basic requirements (declaration of conformity – for construction products available on the market before 1st September 2013 for which no harmonized technical specifications exist and construction products available on the market before 1 July 2013 for which harmonized technical specifications exist).
- 3.14.17 A copy of passport of groundwater well registered in accordance with applicable procedures as a source of drinking water or documents of drinking water tests performed by an accredited laboratory or laboratory authorized to perform water (drinking or underground) tests (not mandatory in case of connection to utilities) and the conclusion of the National Public Health Care Center under the Ministry of Health with regards to the compliance of the test results with the requirements of the public health protection legislation.
- 3.14.18 Documents of measurements of chemical substances (contaminants), ionizing and non-ionizing radiation, noise, infrasounds and low frequency sounds that cause body vibration, microclimate, illumination and other agents performed by certified or accredited bodies when such measurements are required by the construction design and the program of laboratory measurements (or updated program of laboratory measurements in case of changes made to the construction design).
- 3.14.19 Noise classification protocol [8.29] for two-apartment and multi-apartment houses, healthcare buildings, educational buildings, hotel buildings.
- 3.14.20 Energy performance certificate (where mandatory)
- 3.14.21 Certificate of construction waste transfer to a waste management company or of construction waste management in ways established by law for constructions that started after 20 January 2006.
- 3.14.22 Test reports for buildings containing energy equipment indicated in Article 15 of Annex 9 to the Construction Technical Regulation STR 1.05.01:2017.
- 3.14.23 Expert report of the construction (or part thereof) proving that the construction (part thereof) complies with the basic construction requirements laid down in Article 4 of the LAW ON CONSTRUCTION or constructor's certificate (with formal requisites approved by the Head of the Inspectorate) on its responsibility for the compliance with the construction requirements – can be provided as alternatives to documents listed in Articles 4, 5, 6 (except for visual inspection and test reports of the construction's engineering systems and utility networks); these alternatives are possible if construction started no later than 20 November of 2011, also in case

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of legalization of unauthorized construction, in case the construction contractor is bankrupt (or under bankruptcy proceedings); in all other cases, expert report for the construction (or part thereof) proving its compliance with the basic construction requirements set out in Article 4 of the LAW ON CONSTRUCTION can be provided as alternative.

- 3.14.24 Conclusion of the authorized inspection body confirming that the potentially hazardous facilities are suitable for operation.
- 3.14.25 Certificate of the registration of potentially hazardous facilities in the public register of potentially hazardous equipment.
- 3.14.26 A copy of the list of persons that have (or must have) checked the construction design issued by the institution that also issued a construction permit (if no such information is available on IS INFOSTATYBA).
- 3.14.27 Documents of tests performed by appropriate accredited laboratories proving the compliance of thickness and composition of fire-proof coating (paint, plaster, wool, etc.) of steel structures with applicable technical specifications (certificates of conformity, declaration of conformity etc.).
- 3.14.28 Conclusion of the body authorized to inspect potentially hazardous facilities and certificate of the registration of potentially hazardous facilities in the public register of potentially hazardous equipment are provided if the potentially hazardous facility is included in the list of potentially hazardous equipment that are controlled by authorized institutions and recorded in the public register (by indicating their parameters) approved by, respectively, the Minister of Social Security and Labor, or Minister of Economy or Minister of Energy.
- 3.14.29 Written construction design approvals referred to in Annex 6 to the Construction Technical Regulation STR 1.05.01:2017;
- 3.14.30 Contractor's performance bond for the warranty period, i.e. suretyship insurance certificate issued by an insurance company (together with payment proof), payment deferral document or a copy of guarantee issued by a credit institution for ensuring the contractor's performance during the warranty period (if any such security is mandatory under the Law on Construction of the Republic of Lithuania [8.3]). Requirements applicable to the suretyship insurance certificate by insurance company, payment deferral document or guarantee by credit institution:
 - 3.14.30.1 Surety insurance certificate, payment deferral document or guarantee must be valid for not less than the period of 3 years;
 - 3.14.30.2 The value of the suretyship insurance, payment deferral document or guarantee must be not less than 5 percent of the construction price (VAT included).
- 3.14.31 Cadastral data file (or files) of the construction; the file does not have to be submitted in case of upgrade (modernization) of buildings;
- 3.14.32 Copy Power of Attorneys to submit application (if application is filed by authorized person);
- 3.14.33 Written construction design approvals referred to in Annex 6 to the Construction Technical Regulation STR 1.05.01:2017;
- 3.14.34 Contractor's performance bond for the warranty period, i.e. suretyship insurance certificate issued by an insurance company (together with payment proof), payment deferral document or a copy of guarantee issued by a credit institution for ensuring the contractor's performance during the warranty period (if any such security is mandatory under the LAW ON CONSTRUCTION OF THE REPUBLIC OF LITHUANIA). Requirements applicable to the suretyship insurance certificate by an insurance company, payment deferral document or guarantee by a credit institution:

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- 3.14.34.1 Surety insurance certificate, payment deferral document or guarantee must be valid for not less than the period of 3 years;
- 3.14.34.2 The value of the suretyship insurance, payment deferral document of guarantee must be not less than 5 percent of the construction price (VAT included).