PUBLIC COMPANY ORLEN LIETUVA

APPROVED BY
General Director

6 December 2017
Order No TV1(1.2-1)-466

OCCUPATIONAL HEALTH AND SAFETY PROCEDURE BDS-7
HOT WORKS

I. GENERAL

Purpose and Scope of Application

1. The purpose of this Occupational Health and Safety Procedure BDS-7 is to establish occupational health and safety (OHS) requirements for works involving flame and spark-producing operations, also for any other work posing fire or explosion hazard (hereinafter – hot works) at Public Company ORLEN Lietuva (hereinafter – the Company).

2. This Procedure applies to all Company's and contractor's (if so set forth in contract concluded between the Company and contractor) employees involved in organizing, planning and/or performing hot works.

3. The requirements established herein shall not apply to:

3.1. Hot works which are subject to respective process regulations (e.g. process preheating, ignition of heater burners and alike);

3.2. Use of non-explosion-proof electronic equipment (computers, mobile telephones, photo cameras, etc.), motor vehicles and motorized means of work (compressors, grass mowers, etc.) in potentially explosive atmospheres as requirements for these are established in the OHS Procedure BDS-10 ‘Use of Work Equipment in Potentially Explosive Atmospheres’;

3.3. When there are other conditions applicable to hot works specified in the permit issued for construction works pursuant to the requirements established in the Occupational Safety and Health Procedure for Contractors BDS-40 (section ‘Handover of Worksite to Contractor’);

3.4. In separate objects/facilities of the Company that are not directly related to any crude refining process, a different procedure for the execution of hot works may be established.

II. REFERENCES

4. This Procedure shall be used in conjunction with the below legal acts (as amended):

4.1. General Fire Safety Regulations approved by the Director of Fire Prevention and Rescue Department under the Ministry of the Interior;

4.2. Lithuanian Hygiene Norm HN 23:2011 'Limit Values of Occupational Exposure to Chemicals. General Requirements for Measurements and Exposure Assessments' approved by the Minister of Health and Minister of Social Security and Labor;

4.3. Standard S1 - Permits to perform hazardous work (including fire hazards) of PKN ORLEN S.A. of 28 February 2017.

III. TERMS, DEFINITIONS AND ABBREVIATIONS

5. Terms and definitions used herein:

5.1. **Lower explosive limit** (LEL) – the lowest concentration of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source.

5.1.1. **Personal protection equipment (PPE)** – any equipment to be worn or held by an employee to be protected against hazards that may endanger his/her health and safety. For the purpose of the present Procedure:

5.1.2. **Mandatory PPE** – PPE indicated in OHS signs displayed at entries to process units, buildings or any other facilities of the Company (safety helmet with a strap, goggles, protective work clothing, safety footwear, ear and respiratory protection equipment);

5.3. **Special PPE** – PPE selected in consideration of implemented safety measures and risks associated with the planned works (safety harness, lifelines, PPE resistant to chemicals, filtering gas masks, self-contained breathing apparatus, etc.);

5.4. **Occupational risk identification card** (**RI card**) – a document (in the form established in Annex 2 hereto) that helps the work manager to identify the hazards that workers can be exposed to and take measures to ensure the safety of works. Contractor may use any other form of RI card if it is pre-agreed with Occupational and Process Safety Control (OPSC) Department of the Company.

5.5. **Work coordinator** – employee of the Company's organizational unit that initiates hot works:

– an employee subordinate to Director of Maintenance who has passed a test on this OHS Procedure as prescribed by Employee Indoctrination Procedure and has been appointed by the Deputy Director of Maintenance or Chief Mechanical Engineer to organize and coordinate works carried out during maintenance of static and rotating equipment/facilities, structures/buildings of respective organizational unit;

– employee of Technology and Investment Department who has passed a test on this OHS Procedure as prescribed by Employee Indoctrination Procedure and has been appointed by the Director of Investment & Technology to organize and coordinate technical activities related to implemented projects.

When hot works are initiated by managers of other organizational units, work coordinator shall be an employee of respective organizational unit initiating hot works who has passed a test on this OHS Procedure as prescribed by the Employee Indoctrination Procedure and has been appointed by decree by the unit manager to organize and coordinate hot works.

Work coordinator must be appointed for category 1 hot works performed in process units, on OSBL pipelines and in protective zones of main pipelines and adjacent telecommunication networks.

5.6. **Work supervisor** – employee of organizational unit that issues a permit who has passed a test on this OHS Procedure as prescribed by the Employee Indoctrination Procedure and has been appointed by the permit issuer to supervise hot works (senior operator or operator of process units, oil product operator, etc.).

5.7. **Work manager** – a manager who has been appointed in writing by contractor for organizing and supervising hot works, has passed a test for work managers in OPSC Department according OHS Procedure for Contractors BDS-40 and holds a valid work manager’s certification card, or an employee who has been appointed by organizational unit manager and has passed a test on this OHS Procedure as prescribed by Employee Indoctrination Procedure. When a Company employee is appointed as work manager, s/he is also required to carry out the duties of work coordinator.

5.8. **Workers** – contractor's or Company's employees who execute hot works.

5.9. **Equipment** – any equipment, device, pipeline, etc. that may be dangerous to the health and safety of employees because of hazardous residual/stored energy or energy supplied from other sources.

5.10. **Tie-in** – cut into the pipeline, apparatus or vessel prepared for hot works using gas cutter, angle grinder, etc.

5.11. **Permit issuer** – manager of organizational unit that operates process facility (Head of Operations, Deputy Head of Operations, Head of Shop, Head of Unit, Head of Section or other relevant manager), engineer of that organizational unit appointed by decree by the manager of that organizational unit, also senior operators of process units appointed by decree by the manager of that organizational unit for issue of permits for category 2 hot works and for issue of permits for category 1 hot works only in case of emergency, at nights, weekends and public

holidays who have passed test on this OHS Procedure as prescribed by Employee Indoctrination Procedure. When on the basis of order of the Company's General Director or Deputy General Director for Operations process units are shut down for maintenance, upgrade or implementation of investment projects, the manager of the organizational unit by his/her decree may, where deemed necessary, appoint operators and senior operators of process units to issue permits. Permit issuer may issue permits only for hot works that are carried out in the organizational unit that operates respective process facility. In case of hot works in premises of electric units **permit issuer** – an employee appointed by decree by the Director of Maintenance who has the right to issue instructions or assignments for works in electric units (electrical engineer, automation engineer, etc.) who has passed a test on this OHS Procedure as prescribed by Employee Indoctrination Procedure.

5.12. **Air tester –** an employee of Mažeikiai Fire and Rescue Board for Protection of Facilities (MFRB) duly trained and appointed to test air samples, or an employee of organizational unit of the Company duly trained and appointed by a decree of the manager of organizational unit to perform the testing of air samples.

5.13. **Last Minute Risk Analysis** (**LMRA**) – analysis conducted before hot works in order to make sure the worker understand the assigned work, know possible hazards and have all mandatory PPE and other required means of work. LMRA is an element of RI card.

5.14. **Lockout/tagout initiator** – manager of organizational unit that operates process facilities (Head of Operations, Deputy Head of Operations, Head of Shop, Head of Unit, Head of Section or any other relevant manager) or engineer appointed by the manager of organizational unit as responsible for isolating the unit from any hazardous energy by means of energy-isolating devices (EID).

5.15. **Hazardous area of hot works** – a territory within the radius of 11 meters around the site of hot works.

5.16. **Potentially explosive atmosphere** – atmosphere that may become explosive due to the environment and operating conditions.

5.17. **Occupational exposure limit (OEL)** – the limit of the time-weighted average of the concentration of a chemical agent in the air within the breathing zone of a worker in relation to a specified reference period. Occupational exposure limits are presented in Lithuanian Hygiene Norm HN 23:2011 [4.2].

5.18. **Risk matrix** – matrix designed to determine the residual risk of hot works after all safety measures have been implemented. Risk may be low, medium or high depending on its likelihood and the severity of possible damage to human health (Annex 3 hereto).

5.19. **Explosive atmosphere** – mixture of combustible substances with air, under atmospheric conditions, in the form of gases, vapours, mist or dust in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

5.20. **Process unit** – the entirety of indoor or outdoor crude refining installations, mechanisms, machines, devices, instruments, and vessels installed on supporting structures and foundations and isolated or connected by pipelines.

5.21. **Hot works (work) –** works that produce an ignition source which can ignite combustible gas, liquids or solids. Depending on the source of ignition, hot works fall into category 1 and category 2.

5.21.1. **Category 1 hot works** – electric welding, gas arc welding, metal gas cutting, mechanical and thermal treatment works, works with blowlamp and any other works performed in any place of the Company where open flame is used, sparks are generated or materials are heated up to the temperatures likely to result in ignition.

5.21.2. **Category 2 hot works** – connection and use in potentially explosive atmospheres of manual electric equipment, tools, light fittings and portable lamps (hereinafter – temporary electrical equipment) that are not designed for use in potentially explosive atmospheres (except for those specified in Paragraph 3.2 hereof).

5.22. **Permit for hot works (permit)** – a document in the form provided in Annex 1 hereto authorizing to carry out hot works.

5.23. **Fire watcher** – contractor's or Company's employee appointed by work manager to monitor the site of hot works which is hazardous in terms of fire and, when needed, to extinguish fire using available primary firefighting equipment.

5.24. **Site of hot works** (**worksite)** – a specific location where welding, cutting, grinding or any other hot works are performed.

IV. DUTIES AND RESPONSIBILITIES OF EMPLOYEES

6. **Lockout/tagout initiator must:** organize the isolation of the unit from the existing or potential hazardous energy by means of EID as required by OHS Procedure BDS-29 'Equipment Isolation' and organize the preparation of unit for hot works following the requirements set forth herein.

7. **Permit issuer must:**

7.1. Issue or extend the permit as prescribed by this Procedure only when directly requested by the assigned work coordinator;

7.2. Before issue of permit, make sure that the equipment is properly isolated from all types of hazardous energy and that all safety measures have been implemented;

7.3. Before issue of permit, evaluate the safety measures required for the planned hot works as shown in the risk matrix, specify PPE and other safety techniques to be used during works in Section 9 of the permit and work supervision requirements in Section 10 of the permit;

7.4. Before issue of permit, organize the preparation of area for hot works as prescribed by the present Procedure;

7.5. Before issue of permit, evaluate the presence of substances or their residues in the equipment or site, identify required work environment air tests, sampling points and periodicity of sampling and testing, notify air tester of PPE required for sampling and organize the execution of air tests;

7.6. Fill out the permit in accordance with the requirements of this Procedure;

7.7. Register the permit in the log of hazardous works performed in the unit (sample form of log is provided in Annex 4 hereto);

7.8. If any tie-ins are planned, together with the work coordinator mark tie-in point(s) with a special tags (form is provided in Annex 5 hereto), enter permit registration number on the tag and sign it thus confirming that equipment is duly prepared for hot works;

7.9. If alarm systems are installed in the vicinity of hot works, notify MFRB dispatcher (phone number 30 04) of likely activation of alarm systems in the course of works, and indicate the contact person who in case of actual activation would notify MFRB dispatcher of any actual hazard;

7.10. Before issue of permit, check the work manager's certification card for its validity;

7.11. Issue and sign permit and give permission to start works only after making sure that airborne concentrations of substances meet the values indicated in Paragraph 31 hereof and that the permit has been signed by all persons indicated in it;

7.12. Appoint a work supervisor where needed. Act as work supervisor if none is appointed by the permit issuer;

7.13. In case works are suspended pursuant to Paragraph 8.2, allow resuming works only after identifying and removing the causes of unsafe work and only under conditions specified in the permit;

7.14. If permit needs to be extended, before extension make sure that conditions of work have not changed in the site and sign in the extension section of both counterparts of the permit.

8. **Work supervisor must:**

8.1. Get familiar with the requirements, safety measures indicated in the permit and confirm this by signing in section 12 of both counterparts of the permit;

8.2. Control hot works in progress and if they are executed unsafely or become unsafe due to changed conditions suspend them withdrawing the permit. Immediately report such suspension to permit issuer, workers and/or work manager;

8.3. Upon receipt of notice from work manager, organize periodic work environment air testing;

8.4. Upon completion of works specified in the permit, check if the worksite has been cleaned and is orderly and only then sign in section 'Worksite clean' of both counterparts of permit;

8.5. If all works under the permit have been completed and requirement set out in Paragraph 8.4 has been fulfilled or when permit does not have any free lines for its extension, close the permit by signing and entering a closing date and time in section 13 'Permit closed' of the permit.

9. **Work coordinator must:**

9.1. Prior to work, coordinate the date, time, place, scope and sequence of works with work manager, discuss the suitability of tools, equipment and other work means that will be used for works and planned OHS measures;

9.2. Notify the permit issuer of the need to issue/extend the permit indicating the date and time of works and the contractor, if any, the worksite (territory or the name and tag number of process facility) and planned hot works;

9.3. Get familiar with the requirements and safety measures indicated in permit and confirm this by signing in section 12 of both counterparts of the permit;

9.4. Coordinate the execution of works;

9.5. If any tie-ins are planned, together with permit issuer mark tie-in point(s) with special tag(s) of established form, sign them thus confirming that marked correctly and inform work manager accordingly;

9.6. Participate during the first tie-in operation;

9.7. If permit is extended, make sure that the scope and nature of works have not changed and confirm this by signing in the extension section of the first counterpart of permit.

10. **Work manager must:**

10.1. Prior to commencing work, contact the work coordinator and agree with him the date, time, place, scope and sequence of works, the appropriateness of tools and equipment that will be used for the works as well as planned OHS measures;

10.2. Get familiar with the requirements indicated in permit and confirm this by signing in section 12 of both counterparts of the permit;

10.3. Identify the risks that may arise in the course of works, pre-plan safety measures and fill out the RI card;

10.4. Make sure that work tools and equipment are appropriate, in good repair as well as inspected and tested in accordance with OHS regulations of the Republic of Lithuania;

10.5. Appoint adequately qualified workers for the performance of works. Workers must be trained to provide first aid to the injured;

10.6. Indoctrinate the workers on hot works to be performed and their course, safe methods of work, the results of work environment air tests, required mandatory and special PPE, fire safety and other protective equipment against signed acknowledgment in the second counterpart of permit and RI card;

10.8. Enter the workers and fire watchers in work permit, in section 'Familiar with works, work conditions and PPE'.

10.9. Inform the permit issuer or work supervisor, if any, about the number of workers and fire watchers indicated in the work permit. In case of any changes to the number of workers during the validity of permit, indicate the new number of workers;

10.10. Before hot works enclose the hazardous area of hot works as prescribed by the Company's OHS Procedure BDS-40 'Enclosures';

10.11. Make sure that the workers and fire watchers do not start any work before the permit is issued, they are indoctrinated and sign RI card;

10.12. Ensure that workers refrain from any tie-in operations if tie-in point(s) is/are not marked with tag(s) of established form and work coordinator is absent from the site of hot works;

10.13. Provide the worksite with primary firefighting means specified in the permit;

10.14. Provide the worksite with gas analyzer to monitor airborne concentrations of explosive gas in working environment, if so required by the permit;

10.15. Prior to work, perform LMRA and make sure that the workers understand that all worksite risks are under control and required preventive measures have been implemented;

10.16. During work, in periodicity prescribed by the permit request permit issuer or work supervisor to organize working environment air testing and, if works have been suspended for more than 30 minutes, make sure that works are resumed only after air testing is made to satisfy that the conditions of work have not changed;

10.17. According to the level of risk at worksite, control execution of works periodically or continuously.

10.18. Ensure the compliance by the workers with the requirements established in the permit, card and other OHS Procedures of the Company, apply safe work methods for execution of works, use mandatory and special PPE and other safety means;

10.19. If sparks are or may be generated during the hot works, provide with means (fire retardant cloths, metal shields or other means) to protect the employees, equipment, power cables, etc. from falling sparks;

10.20. Make sure that permit and RI card are always held in the site of hot works;

10.21. Make sure that the worksite is always in proper order, i.e. waste and irrelevant items are removed from the site, required materials are stored orderly, etc.;

10.22. Upon completion of works under the permit, before the expiry of permit, organize the worksite cleanup and notify permit issuer or work supervisor of completion of works and confirm that the site is clean by signing in section 12 'Worksite clean' of the permit;

10.23. If permit is extended, make sure the type and scope of work have not changed, indoctrinate newly assigned workers and sign in the extension section of both counterparts of the permit.

11. **Workers must:**

11.1. Commence works only after getting familiar with potential worksite hazards, obtaining all required mandatory PPE as well as special PPE and collective protective equipment specified in the permit and RI card (fire proof blanket, mechanical ventilator, warning barrier tape, etc.), being indoctrinated by work manager and giving positive answers in LMRA checklist and getting satisfied that all required safety measures have been implemented and all hazards are under control (by signing the second counterpart of the permit and RI card);

11.2. Carry out hot works specified in the permit only and comply with the requirements indicated the permit, RI card and applicable OHS Procedures of the Company;

11.3. Refrain from any hot work if the fire watcher (if appointed) is not present at the worksite;

11.4. Always maintain the worksite in proper order, i.e. keep it free from any irrelevant items, store and keep materials required for hot works properly, etc.;

11.5. During breaks, disconnect welding apparatuses and any other mechanisms from power supply, close gas cylinders, visually check hazardous area of hot works for any smolder and after completion of hot works cleanup the site, remove any equipment and materials used for works, waste, etc.

12. **Fire watcher must:**

12.1. Before work, visually check if primary firefighting equipment is in good technical condition and ready for use;

12.2. During hot works:

12.2.1. Always be present at the worksite and watch performed hot works;

12.2.2. Stay as close as possible (within a safe distance) to places posing ignition hazard;

12.2.3. Keep fire extinguishers and other primary firefighting equipment within easy reach for immediate access in case of fire;

12.2.4. Make sure that that no flammable substances are kept on the site;

12.3. In case of emergency, take actions described in Paragraphs 69, 70 and 71 of this Procedure;

12.4. Wear signal vest and have sound device (e.g. whistle) to draw the attention of workers.

13. **Manager of organizational unit that issues permits for hot works** must organize and ensure that hot works under the permit are performed following the requirements established in this Procedure.

14. **Any person who is subject to this Procedure** must report any noticed irregularity, in particular unsafe execution of hot works or potential risk of emergency, incident, occupational accident, etc. posed by hot works to permit issuer or work supervisor.

V. PREPARATION OF EQUIPMENT FOR HOT WORKS

15. Before any hot work, equipment which will undergo maintenance operations must be isolated by the means of EID from the existing or potential hazardous energy as required by OHS Procedure BDS-29 'Equipment Isolation'.

16. For isolation of equipment from other units and/or utilities, whether in service or not, blinds shall be used.

17. Steam and steam condensate, water, air, nitrogen pipelines as well as steam and hot water tracings can be isolated using shut-off valves only (i.e. without blinds) if concentration of explosive substances in sections of pipelines isolated for maintenance operations is below the lower explosive limit (LEL). Repaired pipeline must be depressurized down to atmospheric pressure, drain valves must be open. If shut-off valves do not ensure required revel of tightness, where possible double isolation should be used when drain valve between two closed shut-off valves is kept open, otherwise repaired pipeline should be isolated from other operating pipelines with blinds.

18. Prior to hot works, any harmful substances and substances hazardous in terms of explosion and fire risks must be removed from repaired equipment down to concentrations specified in Paragraph 32 of this Procedure, including any residues of combustible products and/or sediments. For this purpose, equipment must be flushed with water, steamed out or purged with inert gas (depending on the type of substances equipment contained).

19. Requirements established in Paragraph 18 shall not apply to high-risk works (tie-ins for operated pipelines, tanks or any other units using drilling (milling) machines, repair of partly prepared (not steamed out) pipelines using special plugs as well as installation of temporary clamps (bondage) on operated pipelines). These works shall be subject to requirements established in OHS Procedure BDS-27 'High-Risk Works'.

20. Tie-in point(s) must be marked with tags of established form (see Annex 5 hereto).

21. If hot works are performed in the vicinity of ventilation installations where ventilator may catch sparks and carry them over to ventilated premises where combustible substances are or may be present, such ventilation piping must be isolated (shut/blinded off) to prevent any entry of sparks.

VI. PREPARATION OF TERRITORY FOR HOT WORKS

22. If possible, all flammable and combustible substances/materials must be removed and cleaned from the area of hot works (within the radius of at least 11 m around the site of hot works). Otherwise, they must be reliably covered with fire blankets or metal shields, covered with sand, watered or otherwise protected against ignition.

23. Gutters/ducts, channel outlets, wells and any other sewer (wastewater) facilities within the radius of 11 meters around the site of hot works must be tightly closed and covered with a sand layer of at least 10 cm or sealed up using special means designed for this purpose.

VII. FIRE-FIGHTING MEASURES

24. Each site of hot works must be provided with primary firefighting equipment of good condition, in particular powder or carbon dioxide fire-extinguishers (containing minimum 4 kg of extinguishing medium) and optionally with fire blanket, rubber hose connected to a steam tap, etc.

25. Fire extinguisher must be selected according to substances/materials that are present and may ignite in each specific site of hot works.

VIII. AIR MONITORING AND REQUIREMENTS FOR CONCENTRATIONS

26. If work environment air testing is required before the works, permit issuer shall notify air tester accordingly indicating the site, time and description of hot works and required air tests.

27. Air shall be sampled before the start of hot works or before resuming hot works that have not been completed in previous shift or working day.

28. If hot works are not started in 30 minutes after air sampling, also where a break longer than 30 minutes is taken in the course of hot works, new air samples shall be taken (unless continuous monitoring is prescribed). Air tester shall enter the findings of periodic air tests into Air Test Results Record Sheet (see Annex 7 hereto). This Sheet shall be filled out by air tester in two copies, one going to permit issuer and another to work manager. During and after completion of works, Air Test Results Record Sheet must be kept together with the permit.

29. Air samples from vessels and pipelines shall be taken from as many points as required to ensure the safety of hot works.

30. In case of category 1 hot works in process units where liquefied petroleum gas is produced and/or kept (e.g. LK-2 Complex S-400 Section, Oligomerization Unit, MTBE/ETBE Unit, LPG Farms, etc.) as well as in case of any risk of entry of flammable and/or explosive gases into the hazardous area of hot works, continuous air monitoring using portable gas analyzer must be prescribed in the permit.

31. Hot works are allowed when the concentration of substances hazardous in terms of explosion in the prepared equipment and work environment air does not exceed 5% of LEL and the concentration of oxygen in the ambient air is minimum 19.5 % to the maximum of 23.5 %.

32. To ensure adequate respiratory protection, concentrations of hazardous substances and mixtures that may be present in the air of work environment must be tested and kept down to prescribed OELs.

IX. MAIN CASES WHEN FIRE WATCHERS ARE NECESSARY

33. Fire watcher must be appointed in the following cases:

33.1. For hot works at height when sparks are or may be produced;

33.2. For hot works performed closer than 11 m from units which contain or transport flammable petroleum products or any other flammable substances;

33.3. If flammable substance is closer than 11 meters from the executed hot works;

33.4. If heat generated by hot works poses the risk of ignition of combustible substances/materials behind metal or any other partitions (walls, ceilings, roof, etc.);

33.5. In all other cases where at least minimum risk of fire or danger to the safety of people exists.

34. Fire watcher may be appointed to watch several points of hot works at the same time if such points are located close to each other and it is reasonably possible to keep such under a proper watch.

X. ISSUE OF PERMIT FOR HOT WORKS

35. Hot works within the territory of the Company shall be allowed only under permit issued as prescribed by this OHS Procedure. During the startup and shutdown of process unit, issue of permits for hot works and execution of hot works is forbidden with the exclusion of emergencies when issue of such permit is agreed with higher-level manager (Head of Operations, Deputy Head of Operations, Head of Shop, etc.) and the latter signs in the section 'Other requirements and agreements' of work permit.

36. Permit for hot works is required for:

36.1. Category 1 hot works performed at any place within the Company;

36.2. Category 2 hot works performed in potentially explosive atmospheres.

37. Permit shall be issued for each specific unit (e.g. tower, vessel, piping, etc.) or specific territory (e.g. repair of steel structures, servicing platforms, power installations, grounding, installation of new pipelines, etc.) individually.

38. Permit shall be executed in two counterparts: the first (top) counterpart (white) is original, the second (pale yellow) – a carbon copy. Electronic permits are also possible (in this case both counterparts are original).

39. The permit must include such details as the name of organizational unit where hot works will be performed, contractor, the site of hot works (territory or name and tag number of equipment), substance/medium that was present in equipment, required hot works (e.g. electric welding, gas cutting, connection of temporary power equipment, etc.), completed preparations of equipment and territory for hot works, requirements applicable to execution of hot works, mandatory and special PPE, required air tests and their periodicity.

40. Depending on completed preparations and potential hazards, additional OHS measures must be also specified in the permit.

41. After sections 1, 3-11 are filled in, the permit must be registered in the log of hazardous works maintained by respective organizational unit and registration number and date must be entered in the permit.

42. In section 12 of the permit its validity date and time, work environment air test results must be specified and permit must be signed by all persons indicated in it.

43. Date and time fixed in the permit must not extend beyond the end of shift of the work supervisor or permit issuer.

44. A copy of EID diagram with boundaries of area prepared for hot works shown in it must be enclosed to the permit. If it is not possible to show the boundaries in the EID diagram or if EID list is not prepared, the boundaries of area prepared for hot works shall be shown in a diagram drawn on a separate sheet.

45. The diagram shall specify the registration number of permit and show the points of hot works and sampling. The diagram must be signed by the permit issuer.

46. Permit shall enter into force after the signature by permit issuer, work supervisor (if any), work coordinator (except for cases described in Paragraph 52), work manager, workers and fire watchers.

47. The first counterpart of permit shall be kept by the permit issuer in the control room or other established place of issue of permits and the second counterpart shall be handed over to the work manager. This counterpart must be kept at the site of hot works for the duration of hot works.

48. Registered permit may be extended for a total of seven 12-hour shifts from the date of issue of permit provided that the nature of works and working conditions will remain the same.

49. Permit for hot works shall cease to be valid if any of responsible persons who signed the permit (i.e. permit issuer, work supervisor (if any), work coordinator and/or work manager) has been replaced. In such cases a new validity date and time, ambient air test results signed by the individual who performed such tests and other responsible persons must be entered and signed on both counterparts of the permit.

50. If work manager is replaced, a new work manager must read RI card, specify additional safety measures as required in it and sign. For the same type of works, it is recommended to issue separate permits for shifts from 8 AM to 8 PM and from 8 PM to 8 AM.

51. Issue or extension of permit for hot works at night (from 8:00 PM to 8:00 AM), weekends and public holidays shall be allowed only upon prior written agreement with higher-level manager (Head of Operations, Deputy Head of Operations, Head of Shop, etc.) against his/her signature in the section 'Other requirements and agreements' of the permit. Such agreement is not required for issue or extension of permits if process units are shut down for turnaround, maintenance, upgrade or implementation of investment projects as ordered by the Company's General Director or Deputy General Director for Operations.

52. In emergency cases (e.g. risk of emergency shutdown of process unit) permit for hot works at night, weekends and public holidays may be issued/extended by an employee appointed as permit issuer under decree of the manager of organizational unit. In such a cases

permit issuer must enter contact details of work coordinator and manager of organizational unit who instructed to perform the works in section 'Other requirements and agreements' of the permit.

53. In case of hot works to OSBL piping and/or process piping in other process unit permit shall be issued by the permit issuer of organizational unit that operates respective piping. If piping is within the area of other organizational unit, the permit must be agreed in writing with the manager of the unit where hot works will be performed and such manager shall:

53.1. Specify in the permit, if needed, what additional preparations of the territory are required to ensure the safety of hot works;

53.2. After assessing the completed preparations of the territory, authorize proceeding with hot works by signing the permit in the section 'Other requirements and agreements';

53.3. During the execution of hot works, refrain from any operations related to equipment unsealing as well as any other operations that can pose hazard during the hot works.

54. Permits for hot works to be carried out on OSBL cable structures (cable racks) and OSBL cable routes shall be issued by the permit issuer of organizational unit in the area of which the hot works will be performed.

55. Permits for hot works in newly constructed/installed OSBL pipelines shall be issued by the permit issuer of organizational unit in the area of which the works are performed. In such cases preparations of the territory for hot works as required by this Procedure shall be organized by work coordinator.

56. If the point of connection of temporary electrical equipment located in potentially explosive atmosphere is within the territory prepared for category 1 hot works, no separate permit for category 2 hot works for the connection of such equipment shall be required.

57. If the point of connection of temporary electric equipment located in a potentially explosive atmosphere is outside the territory prepared for category 1 hot works, the equipment shall be connected under the same permit for hot works however air samples must be taken at the point of connection of such equipment.

58. Temporary electric equipment shall be connected to the power network of the Company following the requirements of the Procedure for Temporary Powering of Electrical Equipment BE-16.

XI. REQUIREMENTS DURING WORKS

59. Hot works in potentially explosive atmospheres shall be permitted in exclusive cases only when it is impossible to perform them in special workshops intended for hot works.

60. In case of hot works in confined spaces (tower, storage tank, etc.), a permit for works in confined spaces shall be obtained according to OHS Procedure BDS-6/2 'Works in Confined Spaces'.

61. In case of welding, additional measures shall be undertaken to prevent exposure to rain and moist to ensure the safety of work (e.g. special shelters made from fire-retardant materials, dielectric mats, etc.).

62. It is prohibited to perform hot and gas works at the same time in the same area (e.g. to open pipelines, to perform finishing works using glue, paint, tar or resin or any other flammable substances).

63. It is prohibited to weld or cut tight containers, double-wall vessels without prior check if they are free from any explosive substances.

64. It is prohibited to perform any welding or cutting without sufficient ventilation. Natural ventilation is insufficient and exhaust ventilation must be used when:

64.1. Works are performed in spaces of volume less than 284 m^3 per welder;

64.2. Works are performed in spaces less than 5 m in height;

64.3. In confined spaces where adequate air circulation is restricted or affected by inside partitions, trays or any other barriers.

XII. REQUIREMENTS FOR PERMANENT WORKSHOPS OF HOT WORKS

65. For permanent workshops of hot works fire safety and other requirements shall apply.

66. Permanent workshop for hot works shall be arranged on the basis of permanent workshop arrangement plan prepared by work manager concerned which must be agreed with the manager of respective organizational unit and Control and Prevention Group Manager of OPSC Department of the Company.

67. Such plan must be registered in OPSC Department and shall be effective for the period indicated in the plan to the maximum of one year.

68. For hot works in such workshops permits for hot works shall not be required.

XII. EMPLOYEES' ACTIONS IN CASE OF EMERGENCY

69. In case of release of hazardous (harmful, flammable, highly flammable) substances, fire, accident at work or any other incident, activation of emergency alarm or gas detector (analyzer) and if instructed by the fire watcher, hot works must be immediately terminated, and all ignition sources turned off/suppressed.

70. In case a fire during hot works, fire watcher, workers shall immediately arrange evacuation of all non-involved persons from the hazardous territory and extinguish the fire with available firefighting equipment.

71. All incidents must be immediately reported by the workers, work managers and supervisors to the Company's dispatcher by phone number 3333 (for fixed-line calls) or +370 443 92510 (for any calls) and the staff of the unit where the works were carried out. If works are performed in Būtingė Terminal, all incidents must be immediately reported by the workers, work managers and work supervisors to the Terminal Operations Group shift supervisor by phone number +370 443 93459 or +370 686 78112. If works are performed in Biržai and Joniškis Oil Transshipment Stations – to the Main Pipelines Service Group dispatcher by phone number +370 443 93483 or +370 689 89845.

72. In case of fire, accident at work or any other incident during hot works, the permit for hot works shall become no longer effective and all its counterparts shall be transferred to incident investigation committee.

XIII. DOCUMENT CUSTODY

73. Upon completion of hot works, the first counterpart of permit (original) shall be retained for 30 (thirty) calendar days in organizational unit of the Company where it was issued.

74. The second counterpart shall be retained by the contractor.

75. Log of hazardous works shall be kept in the organizational unit for the period of its validity and for another 5 (five) years after it is fully completed.

76. Original of the permanent workshop arrangement plan (permit to perform hot works) shall be kept in OPSC Department of the Company for the period of its validity and for 1 (one) more year after its expiry.

XIV. EMPLOYEE TRAINING

77. Company employees (permit issuers, work supervisors, work coordinators, work managers, workers and fire watchers) are required to pass a test on this Procedure as required by the Company's Occupational Health and Safety Indoctrination Procedure.

78. Contractor's work managers shall be required to pass a test under this Procedure prior to commencing works in the Company and thereafter on a periodic basis at least every 12 months. After passing a test, work manager's certification card shall be issued to work manager containing the following information: employee's full name, organization and expiry date. During the execution of hot works, work manager shall be required to have this card at the work site.

79. Contractor's staff (workers and fire watchers) shall be indoctrinated on requirements established herein according to procedure established in the contractor's company.

XV. FINAL PROVISIONS

80. This Procedure establishes only basic and minimum occupational safety and health requirements for hot works therefore all employees organizing or performing hot works shall undertake additional measures as may be needed to ensure safety and health at work.

81. Responsibility for periodic review and, where necessary, updating of this Procedure shall lie with Director of Quality, Labour Safety and Environmental Control.

Prepared by
Control and Prevention Group Manager
Egidijus Luomanas

2017-11-15

Agreed with:
Director of Quality, Labour Safety and Environmental Control
Arkadiusz Pawlak

2017-11-

(form)

RISK IDENTIFICATION CARD

Contractor:
Work permit registration # and date:
Enter hazard abbreviation in column 'HAZARDS': F – fire/explosion HS – hot surface P – poisoning N – noise V – vibration II – inadequate illumination FTH – fall of things from height FT – fall of things ML – manual lifting of loads FH – falling from height E – hazard related to electricity SS – slippery surface TE – thermal environment UET – hazard related to use of equipment and tools M – hazard related to use of materials MLL – mechanical lifting of loads Other hazards (enter potential hazards and abbreviations):

OPERATIONS (ACTIONS)	HAZARDS	SAFETY EQUIPMENT

Work manager _____
(Name, Surname and signature)

(reverse side of card)

LAST MINUTE RISK ANALYSIS		
Prior to commencement of work, make sure that the risk you have estimated beforehand as well as safety measures you have taken are consistent with the situation you encounter at the worksite and all risks are under control. **Ask each worker to answer these questions:**	**YES**	**NO**
Do I know what I need to do?		
Do I know and understand the requirements set in the work permit and the card?		
Do I have the right tools?		
Do I have proper safety equipment (PPE)?		
Is the workplace safe?		
If anything goes wrong, do I know what I'm supposed to do? Memorize ORLEN emergency phone number: **+370 443 9333**		
If you think that risk is acceptable, indicate YES. If you do not think that risk is acceptable, indicate NO. If at least one NO, do not start work - go to your work manager and discuss the situation.		

The work I need to do as well as hazards and all safety procedures have been explained to me and I am sure that everything possible to minimize the risk and ensure the safety at work has been done (worker):

Date	Full name	Job title	Signature

RISK MATRIX		LIKELIHOOD OF RISK MATERIALIZING		
		LOW This risk is unlikely and has never materialized in execution of works	**MEDIUM** Most likely that this risk may materialize in execution of these works	**HIGH** This risk has materialized in the past, will materialize in execution of these works and may repeat
SEVERITY OF DAMAGE TO HEALTH	**LOW** Slight personal injuries not requiring medical treatment (superficial wounds, minor cuts, minor abrasions)	LOW	LOW	MEDIUM
	MEDIUM Minor injuries requiring medical treatment (fractures, dislocations, muscle sprains, burns or other minor traumas), poisoning	LOW	MEDIUM	HIGH
	HIGH Serious injury or fatality (multiple fractures, concussion and other effects dangerous to life), acute poisoning	MEDIUM	HIGH	HIGH

MEASURES APPLICABLE TO IDENTIFIED RISK LEVEL	
LOW	Worksite and environment are safe, only periodic work supervision is required.
MEDIUM	Work environment may change and therefore it is necessary to specify in Section 9 'Requirements applicable to works' of permit the safety measures that must be applied during works. If severity of damage to health is low but the likelihood of risk materializing is high work manager must be always present in the place of work.
HIGH	Works may be performed if section 9 of permit ('Requirements applicable to works') sets safety measures that allow reducing the risk to medium or low, the work manager is always present at the worksite or if ORLEN Lietuva OHS Procedure BDS-27 'High-Risk Works' is applied.

(form)

Log of Hazardous Works

Start of Work						End of Work	
Work Permit Reg. No.	Date and time of issue of work permit	Hazardous work (MW, EDW, HW, EW)*	Worksite (unit or other facility, tag No.)	Contractor	Permit issuer (full name, signature)	Date and time of expiry of work permit	Permit issuer (full name, signature)

*MW – maintenance works, EDW – equipment depressurization works, HW – hot works, WCS – works in confined space, EW - earthworks

Tag used to mark the point of hot works (example)

<table>
<tr><td colspan="2">ĮSIPJOVIMO Į ĮRENGINĮ VIETA
TIE-IN POINT</td></tr>
<tr><td> 
DĖMESIO!
ATTENTION!</td><td>NEPRADĖKITE DARBŲ, JEI:
- ŠIS ŽYMEKLIS NĖRA PASIRAŠYTAS!
- NETURITE DARBŲ LEIDIMO!
- NĖRA DARBŲ KOORDINATORIAUS!

DO NOT START WORKING IF:
- THIS TAG IS NOT DULY SIGNED!
- WORK PERMIT IS NOT POSSESSED!
- WORK COORDINATOR IS ABSENT!</td></tr>
<tr><td>Darbų leidimo reg. Nr.
Work Permit Reg. No.</td><td>(enter registration number of work permit)</td></tr>
<tr><td rowspan="2">Įrengimas paruoštas, įsipjovimo vieta pažymėta
Equipment is ready, tie-in point is marked</td><td>(full name and signature of permit issuer)</td></tr>
<tr><td>(full name and signature of work coordinator)</td></tr>
</table>

(form)

AIR TEST RESULTS RECORD SHEET

Work permit registration # ___________ Work permit registration date: ___________________

Date	Time	LEL, %	O_2, %	H_2S, mg/m^3	Air tester (n., surname, signature)

ORLEN Lietuva

1 Permit for:

☐ **MAINTENANCE** ☐**EQUIPMENT DEPRESSURIZATION** ☐ **HOT WORKS OF CATEGORY __** ☐ **WORKS IN CONFINED SPACES**

2 Reg. No. _____

Date _____

3 Organizational unit_____ **Equipment No/location** _____ **Product/medium removed from equipment** _____

Contractor _____ **Works** _____

4 Preparation of equipment:	**Yes**	**No**	**NA**
Isolated as per EID list No. _____	□	□	□
Hazardous substances removed	□	□	□
Purged with steam/nitrogen	□	□	□
Pressure reduced to atmospheric	□	□	□
Cooled to ≤ 40 °C	□	□	□
Tie-in points marked	□	□	□
Depressurization points marked	□	□	□
Equipment de-energized	□	□	□

5 Preparation of territory:	**Yes**	**No**	**NA**
Flammable substances removed	□	□	□
Ignition sources removed	□	□	□
Gas release hazard eliminated	□	□	□
Sewer facilities tightly closed	□	□	□
Ventilation ports isolated	□	□	□

6 Ambient air testing:

LEL: □ ≤ 5 vol %

O_2: □ 19.5 – 23.5 vol %

H_2S □ ≤ 7 mg/m3

Othe □ _____

Frequency of testing:

□ Not required

□ Before start of work

□ Periodic, every _ hours

□ Continuously

7 Potential hazards:

□ Fall from height □ Gas leak

□ Fire □ Hot surfaces

□ Other: _____

8 Risk matrix:

Severity of damage to health	**Likelihood of materializing: Low**	**Medium**	**High**
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

10 Worksite supervision

	Yes	**No**
Works must be watched by fire watch	□	□
Works must be watched by a sufficient number of entry attendants	□	□
Flange spreading operation must be watched by responsible persons	□	□
Works must be continuously supervised by work manager	□	□

9 Safety requirements applicable to work:	**Yes**	**No**
Fire extinguisher: □ Power □ CO2	□	□
Protections against fall from height required	□	□
Gas analyzers required	□	□
Face mask with ABEK gas filter: □ Have □ Use	□	□
Dust masks required	□	□
Self-contained breathing apparatus required	□	□
Chemical-resistant PPE required	□	□
Use of harness and lifeline in confined space required	□	□
Mechanical ventilation required	□	□
Use of Ex equipment required	□	□
Other: _____		

11 authorizations:

12 Permit valid until		Air testing results					Air tester (full name, signature)	Permit issuer		Work supervisor (signature)	Work coordinator (full name, signature)	Work manager (full name, signature)	Worksite clean	
Date	Time (from - to)	Time	LEL%	O_2,%	H_2S, mg/m^3	Other		I authorize the works (full name, signature)	I appoint as work supervisor (full name)				Work manager (signature)	Verified by (signature)

13 Permit closed: Permit issuer or work supervisor _____ Date and time _____

ABBREVIATIONS: NA – not applicable, PPE– personal protective equipment, EID – energy isolating devices, LEL – lower explosion limit, O2 – oxygen, H2S – hydrogen sulphide

14 Familiar with works, working conditions and PPE (worker, entry attendant/fire watch):

Name, surname	Job title	Signature	Date 1	2	3	4	5	6	7	Name, surname	Job title	Signature	Date 1	2	3	4	5	6	7

Each shift, in the column 'Date', work manager enters **X** for workers and attendants/watchers working in a shift that has been issued the permit.

INSTRUCTIONS FOR FILLING THE WORK PERMIT

A permit must be filled in legible handwriting by entering appropriate information in each section of the permit and marking the right boxes with the cross mark '**X'**.

Section 1. Mark the appropriate box depending on the type of planned works. For hot works that will be performed in confined spaces, mark the boxes 'HOT WORKS OF CATEGORY I/II' and 'IN CONFINED SPACES'. For earthworks that are performed at depths greater than 2 meters, mark the boxes 'IN CONFINED SPACES' and 'EARTHWORK'.

Section 2. Enter the permit registration number and date from the logbook for registration of hazardous works.

Section 3. Specify the organizational unit and its tag number or the site where the works will be performed, product/media removed from equipment, contractor and the works.

Section 4. Mark 'Yes', 'No' or 'NA' (not applicable) for the listed equipment preparation activities. 'Yes' is marked for activities that have been implemented. If ‘No’ is marked for any box, specify additional safety measures in section 9 'Requirements applicable to works' of the permit or works must be performed following the OHS Procedure BDS-27 'High-Risk Works'. 'NA' is marked for activities that are irrelevant.

Section 5. Mark ‘Yes', 'No' or 'NA' (not applicable) for the listed territory preparation activities. 'Yes' is marked for activities that have been implemented. If If ‘No’ is marked for any box, specify additional safety measures in section 9 'Requirements applicable to works' of the permit or works must be performed following the OHS Procedure BDS-27 'High-Risk Works'. Mark 'NA' for activities that are irrelevant.

Clarification of some expressions: 'Removed ignition sources' means no hot works of categories I and II are performed, 'Gas release hazard eliminated' means that no depressurization, draining or steaming of equipment are performed.

Section 6. Enter the required air tests and their frequency. If no air testing is required, enter 'Not required', If periodic air testing is required, specify the intervals between tests with test results provided in a separate sheet kept at the worksite during the work.

Section 7. Indicate possible work hazards in consideration of completed preparation activities.

Section 8. Describe the work risks determined using the risk matrix and the safety measures selected in consideration of the risk level:

RISK MATRIX		**LIKELIHOOD OF RISK MATERIALIZING**		
		LOW This risk is unlikely and has never materialized in execution of works	**MEDIUM** Most likely that this risk may materialize in execution of these works	**HIGH** This risk has materialized in the past, will materialize in execution of these works and may repeat
SEVERITY OF DAMAGE TO HEALTH	**LOW** Slight personal injuries not requiring medical treatment (superficial wounds, minor cuts, minor abrasions)	LOW	LOW	MEDIUM
	MEDIUM Minor injuries requiring medical treatment (fractures, dislocations, muscle sprains, burns or other minor traumas), poisoning	LOW	MEDIUM	HIGH
	HIGH Serious injury or fatality (multiple fractures, concussion and other effects dangerous to life), acute poisoning	MEDIUM	HIGH	HIGH

MEASURES APPLICABLE TO IDENTIFIED RISK LEVEL	
LOW	Worksite and environment are safe, only periodic worksite supervision is required.
MEDIUM	Work environment may change and therefore it is necessary to specify in Section 9 'Requirements applicable to works' of permit the safety measures that must be applied during works. If severity of damage to health is low but the likelihood of risk materializing is high work manager must be always present in the place of work.
HIGH	Works may be performed if section 9 of the permit ('Requirements applicable to works') sets safety measures that allow reducing the risk to medium or low, the work manager is always present at the worksite or if Company OHS Procedure BDS-27 'High-Risk Works' is applied.

Section 9. Mark ‘Yes’ for safety devices that are mandatory during the work or 'No' for devices that are irrelevant/not required. Specify other precautions that must be taken during the work.

Section 10. Mark 'Yes' if works must be watched by the specified persons or 'No' if no watch is required. Requirement 'Flange spreading operation must be watched by responsible persons' means that the permit issuer or his appointed work supervisor must watch the spreading of flanges when depressurizing the equipment.

Section 11. Specify additional OHS requirements (if required) that must be observed during the work and the persons (if applicable) that must approve the permit (e.g., in case of hot works on OSBL piping, cable trays and other engineering networks, the permit must be coordinated with the manager of unit where hot works are performed).

Section 12. Enter the validity date and time (permit may be issued for a period not longer than a 12-hour shift). Air testing results are entered and signed by the air tester. Enter responsible persons in other columns (to be signed by them): permit issuer, work supervisor (if any), work coordinator and work manager. Each shift, after completion of works for which the permit has been issued, the work manager or person that checks the worksite (permit issuer or work supervisor) signs in the section 'Work completed' of both counterparts of the permit. If permit is extended, the below lines are completed as described above.

Section 13. This section is filled after no empty lines are left or all works indicated in the permit are completed by entering the closing date and time in the first counterpart of permit that must be signed by the permit issuer or work supervisor.

Section 14. To be signed by all workers and appointed attendants/watchers after the indoctrination given by the work manager before the start of work. If permit is extended, it must be signed only by newly appointed workers and attendants/watches after are indoctrinated before the start of work. In the column 'Date', the work manager places X for workers and attendants/watchers working in a shift that has been issued the permit.

Distribution of permit: original (white) – retained by the organizational unit that issued the permit, copy (yellow) – submitted to the work manager (must be kept at the worksite).

After closing the permit, its first counterpart (original) is retained for 30 days by the organizational unit that issued the permit. After the expiry of the retention period, permits are destroyed at the unit manager’s decision in accordance with the Company Rules for Document Preparation and Management.

Permit issuer is responsible for the implementation of requirements set forth in sections 4, 5 and 6 of the permit and work manager – in sections 10 and 11.