

PUBLIC COMPANY ORLEN LIETUVA

APPROVED BY
General Director

6 December 2017
Order No TV1(1.2-1)-465

OCCUPATIONAL HEALTH AND SAFETY PROCEDURE BDS-6/1 EQUIPMENT DEPRESSURIZATION AND MAINTENANCE WORKS

I. GENERAL

Purpose and Scope of Application

1. Occupational Health and Safety Procedure BDS-6/1 'Equipment Depressurization and Maintenance Works' (hereinafter the Procedure) aims to define occupational health and safety (hereinafter OHS) requirements applicable to equipment depressurization and maintenance works carried out in Public Company ORLEN Lietuva (hereinafter the Company).

2. This Procedure applies to all Company and contractor (to the extent required by a contract concluded between the Company and contractor) employees involved in organizing, planning and/or performing equipment depressurization and maintenance works.

3. This Procedure does not apply to depressurization and maintenance works carried out in the Power Plant, which are governed by the 'Rules for Safe Operation of Heating Facilities' approved by the Minister of Energy of the Republic of Lithuania

II. REFERENCES

4. The Procedure applies in conjunction with the following legal acts (as amended to date):

4.1. 'Regulations on the Protection of Workers from Risks related to Exposure to Chemicals at Work' approved by the Minister of Social Security and Labor and Minister of Health of the Republic of Lithuania;

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, ABBREVIATIONS AND DEFINITIONS

5. Terms used herein shall be defined as follows:

5.1. **Personal protection equipment** (or **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:

5.1.1. **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);

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

5.2. **Occupational risk identification card** (hereinafter the **RI card**) – a document (in the form established in Attachment 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 the Occupational and Process Safety Control (OPSC) Department of the Company.

5.3. **Worksite** – a place where unsealing and maintenance works are performed.

5.4. **Workers** – Company or contractor employees that carry out equipment unsealing and maintenance works.

5.5. **Work coordinator** – employee of Company organizational unit that initiates the depressurization and maintenance works:

- an employee under the authority of Director of Maintenance that passed a test on this OHS Procedure as prescribed by Employee Indoctrination Procedure and was 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;

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

When unsealing and maintenance works are initiated by managers of other organizational units, work coordinator is the respective unit employee that passed a test on this Procedure as required by the Employee Indoctrination Procedure and is appointed by the unit manager to organize and coordinate the unsealing and maintenance works.

5.6. **Work supervisor** – organizational unit (issuing a permit) employee that passed a test on this Procedure as required by the Employee Indoctrination Procedure and is appointed by the permit issuer to supervise unsealing and maintenance works (senior operator or operator of process units, oil product operator, etc.).

5.7. **Work manager** – a manager that was appointed in writing by contractor for organizing and supervising depressurization and maintenance works, passed a work manager test in the OPSC Department compliant with the Occupational Health & Safety Procedure for Contractors BDS-40 and has a valid work manager card, or an employee that was appointed by organizational unit manager and passed a test on this Procedure as required by the Employee Indoctrination Procedure. When a Company employee is appointed as work manager, he is also required to carry out the duties of work coordinator

5.8. **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.

5.9. **Equipment depressurization works (or works)** – equipment dismantling works (e.g., opening pipeline flanges, vessel manholes, valves, vents, removing gaskets, installing blinds, etc) when confined space inside such equipment that contained, contains or may contain materials of different temperatures, pressures and state (e.g., petroleum products, water, steam, etc) is depressurized.

5.10. **Depressurization/maintenance permit (or permit)** – a document (in the form established in Annex 1) that authorizes equipment depressurization or maintenance activities.

5.11. **Permit issuer** – 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 other relevant manager), or engineer or senior process operators appointed by the unit manager, all of them having passed a test on this Procedure compliant with the Employee Indoctrination Procedure. When on the basis of order of the General Director or Deputy General Director for Operations process units are shutdown for maintenance, upgrade or implementation of investment projects, unit manager may, where deemed necessary, appoint process unit operators to issue

permits. Permit issuer may issue permits only for depressurization or maintenance works that are carried out in the organizational unit that operates process facilities.

5.12. **Last minute risk analysis** (or **LMR analysis**) – analysis conducted before depressurization or maintenance works in order to make sure the workers understand the assigned work, know possible hazards and have all mandatory PPE and other required means of work. LMR analysis is part of RI card (Attachment 2 hereto).

5.13. **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 as responsible for isolating the unit from any hazardous energy by means of energy-isolating devices (EID).

5.14. **Maintenance works** (or **works**) – dismantling, washing, cleaning and assembling of depressurized equipment (e.g., demounting, washing or assembling of heat exchanger tube sheets, closing manholes, installing shutoff valves, vents, etc.) and other works that require implementing certain safety measures but are not classified as equipment depressurization works, hot works or works in confined spaces.

5.15. **Risk matrix** – matrix designed to evaluate the preparation of depressurization and maintenance works and to determine the residual risk. Risk may be low, medium or high depending on its likelihood and the severity of possible damage to human health (Attachment 3).

5.16. **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.

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 prepare the equipment for depressurization and maintenance following the requirements laid down 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 depressurization or maintenance works as shown in the risk matrix and specify in section 9 of permit the PPE and other safety devices to be used during the works and in section 10 – work supervision requirements;

7.4. Prior to issue of permit, coordinate the planned depressurization works with the managers or senior operators of organizational units operating adjacent process facilities that may be adversely affected by the depressurization works, including persons working or staying in such facilities;

7.5. Prior to issue of depressurization permit, evaluate the presence of hazardous substances in the equipment and if their vapors or gas may be released during depressurization perform continuous monitoring of the workplace air;

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 Attachment 4);

7.8. Inform the FRB dispatcher (phone No.3004) about alarm systems (if any) installed at/nearby the site of depressurization works and specify a person that will contact the dispatcher if alarm goes off;

7.9. Before issue of depressurization permit, tag out all depressurization points (sample tag is provided in Attachment 5) and inform the work manager about them;

7.10. Before issue of permit, check the work manager's certification card and make sure that it is valid;

7.11. Issue a permit, sign it and allow commencing the works only after making sure that all persons indicated in the permit have signed it;

7.12. Make sure that no hot works and other activities will be carried out during depressurization if they may be dangerous to employees and/or depressurization activities;

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

7.14. 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;

7.15. If permit has to be extended, before extending it make sure that the worksite conditions have not changed;

7.16. Sign in the extension section of both counterparts of extended permit.

8. Work supervisor must:

8.1. Confirm familiarization with the requirements and safety measures indicated in the permit by signing in section 12 of permit (both counterparts);

8.2. Control the depressurization or maintenance works and suspend them (by taking the permit) if they are performed unsafely or when it becomes unsafe to proceed with the work due to changed conditions. Suspension of works must be immediately reported to permit issuer, workers and/or work manager;

8.3. If permit (section 10 'Work supervision') states that flange spreading operation must be attended responsible persons, upon work manager's notice stay at the worksite and control the flange spreading operation;

8.4. Upon completion of works specified in the permit, check if the worksite has been cleaned and if it is clean sign in section 'Worksite cleaned' of both counterparts of permit and where necessary inform the heads or senior operators of organizational units operating adjacent process facilities about the end of depressurization operations and remove the tags;

8.5. After all works specified in the permit are completed and the requirement set out in Paragraph 8.4 is fulfilled or when no empty lines are left for a new extension date, close the permit by signing and entering a closing date and time in section 13 'Permit closed'.

9. Work coordinator must:

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

9.2. Inform the permit issuer about the need to issue / extend a work permit by indicating the date and time of works and the contractor, if any, the worksite (name and tag number of process facility) and planned 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 permit is extended for another period, 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. If depressurization works are planned, familiarize himself and the workers with the depressurization points;

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

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

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

10.7. Familiarize the workers with the works, their sequence, safe work methods, mandatory & special PPE and other safety measures against their signatures on the second counterpart of permit and the RI card;

10.8. Enter the workers in the permit 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 attendants/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. Prior to commencing work, enclose the dangerous depressurization site as required by the Company's Occupational Health and Safety Procedure BDS-20 „Enclosures“;

10.11. Furnish the worksite with gas analyzers if continuous air monitoring is required by the permit;

10.12. Make sure that works are not commenced by the workers until a permit is issued and workers have been instructed and signed the permit and the RI card.

10.13. Prior to work, perform LMR analysis and make sure that the workers understand all worksite risks are controlled and required preventive measures have been implemented;

10.15. Control the works and, where required by the permit, always stay at the worksite;

10.16. If permit (section 10 'Worksite supervision') states that flange spreading operation must be attended responsible persons, inform the permit issuer or work supervisor (if any) before flange spreading and make sure that flanges are not spread (separated) if responsible persons are not present;

10.17. Make sure the permit and RI card are available at the worksite at all times;

10.18. 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.;

10.19. Upon completion of works specified in the permit, before the expiry of permit, organize the worksite cleanup and inform the permit issuer or work supervisor about completed works as well as confirm that the site is clean up by signing in section 12 'Worksite clean' of the permit;

10.20. If permit is extended for another period, make sure the scope and nature of works have not changed, instruct newly appointed workers and sign in the extension section of both counterparts of the permit.

11. Workers must:

11.1. Commence the depressurization or maintenance works only after getting familiar with the workplace hazards, obtaining all mandatory PPE, special PPE indicated in the permit and RI card and other required safety equipment, receiving instructions from the work manager, giving positive answers to LMRA checklist and making sure that all required safety measures have been implemented and all hazards are under control (by signing the second counterpart of permit and RI card);

11.2. Not perform any flange spreading if:

11.2.1. If depressurization points are not marked:

11.2.2. Permit issuer or work supervisor is not present at the worksite although the permit (section 10 'Work supervision') requires the presence of responsible persons;

11.3. Perform works specified in the permit only and comply with the requirements indicated in the permit, RI card and the applicable OHS procedures of the Company;

11.4. Use respiratory protective devices if gas analyzer gets activated during the works;

11.5. Always keep the worksite clean, i.e. remove all irrelevant items, and orderly store the depressurization or maintenance materials;

12. Managers of organizational units operating adjacent process facilities must:

12.1. After considering potential risks associated with the planned depressurization activities, evaluate the possibility to perform depressurization in terms of possible impact on their own (subordinate) facilities;

12.2. After consenting to (approving) the planned equipment depressurization in the adjacent facilities by email, phone or any other means of communication:

12.2.1. Inform related shift staff about the depressurization works planned in the adjacent facilities and the end of such works;

12.2.2. At the time of depressurization performed in the adjacent facilities, not to carry out any works that can be dangerous to the workers and/or depressurization activities.

13. Manager of organizational unit that issues depressurization and/or maintenance permits must organize and ensure that depressurization and/or maintenance works for which the permit is issued are performed following the requirements established in this Procedure.

14. If **any other person that is subject to this Procedure** notices that depressurization and/or maintenance works are performed unsafely and may result in accidents or incidents, he **must** inform the permit issuer or work supervisor.

V. SAFETY MEASURES APPLIED TO EQUIPMENT

15. It is required to identify the hazardous substances present in the depressurized equipment and the risks associated with such substances. Process diagrams, pipeline labels, safety data sheets, etc. are used for this purpose.

16. Depressurized equipment must be isolated with EID from the existing or potential hazardous energy as required by the Occupational Safety and Health Procedure BDS-29 'Equipment Isolation'.

17. Pressure in the depressurized equipment is reduced to atmospheric pressure.

18. All hazardous substances present in the equipment must be removed. For this purpose, the equipment is drained, vented, flushed with water, steamed, purged with inert gas, etc. Any liquid hazardous substances are removed to closed systems (underground tanks), gas – to the flare line.

19. The equipment is cooled to a temperature below 40°C.

20. The prepared equipment is inspected by checking first the indications of pressure and level gauges and other metering instruments. Later the space inside the confined equipment is verified through the draining, venting, sampling points by slowly opening their shutoff valves.

21. Where it is not possible to fully prepare the equipment as required by Paragraphs 15-19 and it is not possible to check if the equipment has been prepared, additional OHS measures must be applied during the depressurization operations:

21.2. Use of covers, enclosures or shields that are resistant to chemical substances and protect workers against spills and directing the spilled products to spill collectors;

21.3. Workers must be provided with and wear chemical resistant clothing, panoramic safety glasses, protective face shields, etc.;

21.4. In case of possible contact with corrosive materials (acid or alkali) during depressurization, an emergency shower and eyewash station must be installed within a distance of 50 meters. In case no stationary emergency washing equipment is available within the said distance, other alternatives (e.g., portable washing equipment, container with water, water hose, etc.) must be provided. Prior to commencing work, washing equipment must be checked to see if they are operational, can be easily accessed, etc).

22. If release of flammable substances is possible during the depressurization operation, the below extra requirements must be followed:

22.1. The hazard area must be free from any sources of ignition (hot works in progress, machinery with internal combustion engines, temporary electrical connections, etc.);

22.2. Only the means of work, including work equipment, tools and protective equipment, designed for potentially explosive atmospheres (as specified in the manufacturer's documentation) must be used;

22.3. Work tools must be made from non-sparking metal, or coated with non-ferrous metal;

22.4. Workers are required to wear anti-static and fire-retardant clothing.

23. Prior to transferring equipment to other organizational units for maintenance, equipment must be depressurized and prepared (washed, cleaned, steamed, etc) by removing all hazardous substances (flammable, toxic, noxious, corrosive, etc) from it.

24. Prior to delivering the equipment to the place of preparation for maintenance, it must be properly prepared/packed to prevent any leaks of hazardous substance (e.g., by blinding off open sections, wrapping the equipment or its parts with a leak-proof cover, etc)

25. The manager of organizational unit that owns the respective equipment is responsible for implementing Paragraph 23. Contractor that organizes its delivery to the place of preparation for maintenance is responsible for implementing Paragraph 24.

VI. ISSUE OF EQUIPMENT DEPRESSURIZATION AND MAINTENANCE PERMIT

26. A work permit must be issued for equipment depressurization and maintenance activities.

27. A separate permit is issued for each specific piece of equipment (e.g., tower, vessel, piping, etc.).

28. It is issued in two counterparts: the first counterpart (white) is original, the second (yellow) – a copy. Electronic permits are also possible (in this case both counterparts are original).

29. Permit must state the organizational unit where the works will be performed, contractor, equipment and its tag number, substance/medium that was/is present in the equipment, required works, implemented safety measures, OHS requirements applicable to works and required special PPE.

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

31. After filling sections 1, 3-11 of the permit, it is registered in the log of hazardous works maintained by the respective organizational unit with the registration number and date entered in the permit.

32. Section 12 must specify the date and time of validity. Permit has to be signed by all persons mentioned in the permit.

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

34. Depressurization permit must be enclosed with a copy of EID diagram with indicated permit registration number and depressurization point/points. The diagram must be signed by the permit issuer.

35. Permit for depressurizing OSBL piping and/or another process unit piping that contained, contains or may contain hazardous chemical substances or their mixtures must be agreed in writing with the manager of organizational unit where depressurization works will be carried out. The manager is required not to perform any hot works and other works that may be dangerous to workers performing depressurization.

36. The first counterpart of permit is kept by the permit issuer in the control room or another fixed place of issue of permits. The second counterpart is handed over to the work manager. This counterpart must be always kept at the worksite while performing the works.

37. Permit enters into force after it is signed by the permit issuer, work supervisor (if any), work coordinator (except for cases described in Paragraph 41), work manager and workers.

38. Permit for depressurization and/or maintenance works ceases to be valid in case of replacement of any responsible persons that signed the permit, i.e. permit issuer, work supervisor (if any), work coordinator and/or work manager. In such cases a new validity date and time and other responsible persons must be indicated in both copies of the permit.

39. If work manager is replaced, a new work manager must read the RI card and where necessary specify additional safety measures and sign the card. 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.

40. 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.

41. In emergency situations (e.g., imminent process unit shutdown) with work coordinator absent from work (after his working hours, on weekends, holidays, etc.), permit issuer specifies in the permit the work coordinator's contact data (name, surname and mobile phone number) based on information received from the work coordinator.

VII. OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS APPLICABLE TO WORKS

Equipment depressurization

42. Depressurized equipment (e.g., flanged connections) must be treated as if it contains pressure.

43. Flanges must be depressurized with the back turned to the wind.

44. To depressurize the equipment the worker must first loosen (by approx. three turns of the nut) the furthest bolt and then other adjacent bolts (with approx. two turns of the nut).

45. If flanges are not fully depressurized after loosening the bolts referred to in Paragraph 44, the flanges are unsealed by spreading them.

46. Nuts may not be completely unscrewed from bolts until flanges are fully depressurized.

47. In case of release of dangerous chemical substances from depressurized equipment or if it still contains pressure, the equipment must be immediately sealed by tightening its bolts by reporting this to the permit issuer or work supervisor (if any).

Collection of released hazardous chemical substances

48. If hazardous chemical substances may escape from the depressurized equipment, it is necessary to provide for means of collecting them and preventing from dripping onto equipment platform, seeping into the ground or the sewage system, etc. Various containers, trays, mats, screens, etc. can be used for this purpose.

VIII. EMPLOYEES' ACTIONS IN CASE OF EMERGENCY

49. 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 8443 92510 (for any calls) and the employees of the unit where the works are carried out. If works are performed in Būtingė Terminal, 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. If fire, accident or other incident occurs during the depressurization works, the permit ceases to be valid and all its counterparts are transferred to the respective incident investigation committee.

50. In the event of accident caused by release of hazardous substances, information about such substances (safety data sheets, written procedures and other documents) are immediately presented to the healthcare facility providing medical treatment to the casualties.

IX. DOCUMENT CUSTODY

51. After completing equipment depressurization and maintenance, the first counterpart of permit (original) is retained by the organizational unit that issued the permit for 30 (thirty) calendar days.

52. The second counterpart is retained by the contractor.

53. A log of hazardous works is kept in the organizational unit for the period of its validity and for another 5 years after it is fully completed.

X. EMPLOYEE TRAINING

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

55. Contractor's work managers are required to pass a test on 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 receives a work manager card containing the following information: employee's full name, organization and expiry date. When performing equipment depressurization or maintenance works, contractor's work manager must always have the card with him.

56. Contractor's workers must be indoctrinated on this Procedure in accordance with the contractor procedures.

XI. FINAL PROVISIONS

57. This Procedure sets the basic and minimum OHS requirements for depressurization and maintenance works and therefore all employees involved in organizing and/or performing equipment depressurization and maintenance must take additional OHS measures if necessary to ensure the safety of works.

58. Director of Quality, Labour Safety and Environmental Control is responsible for the periodic review, and where necessary updating, of this Procedure.

Prepared by
Control and Prevention Group Manager
Egidijus Luomanas

2017-11-03

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

___-11-2017

(Specimen card)

RISK IDENTIFICATION CARD

Contractor:																					
Work permit registration # and date:																					
<p>Enter hazard abbreviation in column 'HAZARDS':</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">F – fire/explosion</td> <td style="width: 33%;">FTH – fall of things from height</td> <td style="width: 33%;">UET – hazard related to use of equipment and tools</td> </tr> <tr> <td>HS – hot surfaces</td> <td>FT – fall of things</td> <td>M – hazard related to use of materials</td> </tr> <tr> <td>P – poisoning</td> <td>ML – manual lifting of loads</td> <td>MLL – mechanical lifting of loads</td> </tr> <tr> <td>N – noise</td> <td>FH – falling from height</td> <td></td> </tr> <tr> <td>V – vibration</td> <td>E – hazard related to electricity</td> <td></td> </tr> <tr> <td>II – inadequate illumination</td> <td>SS – slippery surface</td> <td></td> </tr> <tr> <td></td> <td>TE – thermal environment</td> <td></td> </tr> </table> <p>Other hazards (enter potential hazards and abbreviations):</p>	F – fire/explosion	FTH – fall of things from height	UET – hazard related to use of equipment and tools	HS – hot surfaces	FT – fall of things	M – hazard related to use of materials	P – poisoning	ML – manual lifting of loads	MLL – mechanical lifting of loads	N – noise	FH – falling from height		V – vibration	E – hazard related to electricity		II – inadequate illumination	SS – slippery surface			TE – thermal environment	
F – fire/explosion	FTH – fall of things from height	UET – hazard related to use of equipment and tools																			
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OPERATIONS (ACTIONS)	HAZARDS	SAFETY EQUIPMENT

Work manager _____
(Name, surname and 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 'Safety 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 ('Safety 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.

Specimen log of hazardous works

Work permit registration No.	Date and time of issue of work permit	Hazardous work (MW, EDW, HW, WCS, EW)*	Start date			End date	
			Worksite (Equipment 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

Specimen tag for depressurization points

IŠSANDARINIMO VIETA DEPRESSURIZATION POINT	
 DĒMESIO! ATTENTION!	IŠSANDARINTI FLANŠUS LEIDŽIAMA TIK TURINT ŠIAI VIETAI IŠDUOTĄ DARBŲ LEIDIMĄ
	FLANGES MAY NOT BE DEPRESSURIZED UNLESS A WORK PERMIT HAS BEEN ISSUED FOR THIS POINT

	1 Permit for: <input type="checkbox"/> MAINTENANCE <input type="checkbox"/> EQUIPMENT DEPRESSURIZATION <input type="checkbox"/> HOT WORKS OF CATEGORY ___ <input type="checkbox"/> 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			6 Ambient air testing:			7 Potential hazards:			9 Safety requirements applicable to work: Yes No																		
Isolated as per EID list No. _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Hazardous substances removed _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Purged with steam/nitrogen _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Pressure reduced to atmospheric _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Cooled to ≤ 40 °C _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Tie-in points marked _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Depressurization points marked _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Equipment de-energized _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			LEL: <input type="checkbox"/> ≤ 5 vol % O ₂ : <input type="checkbox"/> 19.5 – 23.5 vol % H ₂ S <input type="checkbox"/> ≤ 7 mg/m ³ Othe <input type="checkbox"/> _____ Frequency of testing: <input type="checkbox"/> Not required <input type="checkbox"/> Before start of work <input type="checkbox"/> Periodic, every _ hours <input type="checkbox"/> Continuously			<input type="checkbox"/> Fall from height <input type="checkbox"/> Gas leak <input type="checkbox"/> Fire <input type="checkbox"/> Hot surfaces <input type="checkbox"/> Other: _____			Fire extinguisher: <input type="checkbox"/> Power <input type="checkbox"/> CO ₂ Protections against fall from height required _____ <input type="checkbox"/> <input type="checkbox"/> Gas analyzers required _____ <input type="checkbox"/> <input type="checkbox"/> Face mask with ABEK gas filter: <input type="checkbox"/> Have <input type="checkbox"/> Use _____ <input type="checkbox"/> <input type="checkbox"/> Dust masks required _____ <input type="checkbox"/> <input type="checkbox"/> Self-contained breathing apparatus required _____ <input type="checkbox"/> <input type="checkbox"/> Chemical-resistant PPE required _____ <input type="checkbox"/> <input type="checkbox"/> Use of harness and lifeline in confined space required _____ <input type="checkbox"/> <input type="checkbox"/> Mechanical ventilation required _____ <input type="checkbox"/> <input type="checkbox"/> Use of Ex equipment required _____ <input type="checkbox"/> <input type="checkbox"/> Other: _____																		
5 Preparation of territory: Yes No NA			8 Risk matrix:			10 Worksite supervision Yes No																					
Flammable substances removed _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Ignition sources removed _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Gas release hazard eliminated _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Sewer facilities tightly closed _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Ventilation ports isolated _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			<input type="checkbox"/> Not required <input type="checkbox"/> Before start of work <input type="checkbox"/> Periodic, every _ hours <input type="checkbox"/> Continuously			8 Risk matrix: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Severity of damage to health</td> <td style="padding: 2px;">Low</td> <td style="padding: 2px;">Low</td> <td style="padding: 2px;">Low</td> <td style="padding: 2px;">Medium</td> </tr> <tr> <td style="padding: 2px;">Medium</td> <td style="padding: 2px;">Low</td> <td style="padding: 2px;">Medium</td> <td style="padding: 2px;">High</td> <td style="padding: 2px;">High</td> </tr> <tr> <td style="padding: 2px;">High</td> <td style="padding: 2px;">Medium</td> <td style="padding: 2px;">High</td> <td style="padding: 2px;">High</td> <td style="padding: 2px;">High</td> </tr> </table>			Severity of damage to health	Low	Low	Low	Medium	Medium	Low	Medium	High	High	High	Medium	High	High	High	Works must be watched by fire watch _____ <input type="checkbox"/> <input type="checkbox"/> Works must be watched by a sufficient number of entry attendants _____ <input type="checkbox"/> <input type="checkbox"/> Flange spreading operation must be watched by responsible persons _____ <input type="checkbox"/> <input type="checkbox"/> Works must be continuously supervised by work manager _____ <input type="checkbox"/> <input type="checkbox"/>			
Severity of damage to health	Low	Low	Low	Medium																							
Medium	Low	Medium	High	High																							
High	Medium	High	High	High																							
11 authorizations: _____																											
12 Permit valid until _____																											
Date		Time (from - to)		Time		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												
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							Name, surname	Job title	Signature	Date											
			1	2	3	4	5	6	7				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 '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/watchers 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.