

PUBLIC COMPANY ORLEN LIETUVA

APPROVED BY
General Director

11 may 2018
Order No TV1(1.2-1)-193

OCCUPATIONAL HEALTH AND SAFETY PROCEDURE BDS-27 HIGH-RISK WORKS

I. GENERAL

Purpose and Scope of Application

1. The purpose of Occupational Health and Safety Procedure BDS-27 High-Risk Works (hereinafter – the Procedure) is to establish the procedure for decision-making to allow the performance of high-risk works in other ways than provided in the Public Company ORLEN Lietuva (hereinafter – the Company) Occupational Health and Safety (hereinafter – OHS) Procedures applicable for hazardous works (maintenance of units, unsealing, hot works and works in confined spaces), also requirements applicable to such works.

2. This Procedure shall apply to each employee of the Company as well as to each employee of contracting organization (hereinafter – Contractor), if respective works fall within the scope of contract concluded with the Company, who arranges, plans and/or performs high-risk works at the Company.

II. TERMS AND DEFINITIONS

3. Terms used herein are defined as follows:

3.1. **Equipment** – any equipment, machine, 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.

3.2. **High-Risk Works** – repair works at extreme, non-standard conditions and ways, using other methods than provided in the Company OHS procedures applicable for hazardous works (maintenance of units, unsealing, hot works and works in confined spaces). Also high-risk work examples may be:

- Tie-in (hot tapping) into unit by milling machine (minimum OHS requirements are set in Attachment No.2 hereto);

- Repair of partly prepared (not steamed-out) pipeline using special plugs (cameras) (minimum OHS requirements are set in Attachment No.3 hereto);

- Installation of temporary clamps (bandage) on operating pipelines;

- Non-regenerated catalyst unloading from reactor in nitrogen environment.

Other terms and definitions used herein correspond with terms and definitions specified in general OHS procedures of the Company.

III. RISK MANAGEMENT GROUP, ITS COMPETENCE, DECISION FORMALIZATION PROCEDURE

4. The right to make decisions to allow high-risk works is granted to the Risk Management Group (hereinafter – RMG).

5. RMG consists of:

5.1. Chairperson – the Company's Director of Production;

5.2. Members:

Head of Subdivision, where high-risk works are required (RMG Initiator);

Deputy Director of Maintenance;

Chief Specialist of Equipment Technical Supervision;

Occupational and Process Safety Control Manager.

6. If the employees included in the RMG are absent, their substitutes shall participate in decision-making as per Company's procedures.

7. If necessary to perform high-risk works, RMG Initiator shall prepare a draft decision of Risk Management Group in the form of protocol (the protocol form is included in Attachment No.1 hereto) (hereinafter – RMG Protocol).

8. RMG Initiator in the draft RMG Protocol shall enter the place and name of worksite by indicating tag number of the unit, the existing or previously present product therein, current pressure and temperature, clearly define the reason for initiation to adopt RMG decision, list all potential work execution hazards, list organizational and technical measures proposed, and enter start and finish dates of the high-risk works in the RMG Protocol.

9. All the documents referred to safe execution of high-risk works (a list of power isolating devices, maintenance log sheet, sketch, process diagram, etc.) and, if applicable, the ones indicated in Attachment No.2 hereto shall be attached to the draft RMG Protocol by RMG Initiator.

10. RMG Initiator shall prepare the draft RMG Protocol and submit it to RMG Chairperson and members, and in case of their absence – to their assigned substituting employees as per Company procedures, but not later than 1 (one) day before the start of high-risk works, except the cases, when they shall be executed immediately, because delay can cause operations upset, incident or emergency. In this case RMG Initiator shall have the right to submit a draft RMG Protocol to the Company's employees listed here a little later than 1 (one) day before the start of works, but in any case the high-risk works can only be performed after the decision is made as per RMG procedure allowing performance of high-risk works.

11. RMG Chairperson and members must:

11.1. Get familiar with high-risk works planned in the RMG Protocol and with safety measures necessary for safe work execution proposed by RMG Initiator;

11.2. Invite other specialists of the Company, managers of Mažeikiai Fire and Rescue Board for Protection of Facilities to provide recommendations, when necessary (considering the type and specifics of the planned high-risk works);

11.3. Provide comments to RMG Initiator for planned measures within his/her competence or indicate additional measures, which shall be included in the Protocol by RMG Initiator.

12. RMG Chairperson and members can express their agreement or disagreement to the contents of the RMG Protocol by signing the Protocol or sending an e-mail to RMG Initiator's business e-mail indicating "Agreed with" (if agree) and "Not agreed with" (if disagree). If there is a disagreement on the contents of the RMG Protocol, the reason for disagreement shall be indicated in the Protocol.

13. RMG decision allowing the performance of high-risk works as per terms and conditions indicated in the Protocol shall be considered approved, if it is approved by RMG Chairperson and all RMG Members.

14. If RMG Chairperson or at least one RMG Members does not agree on the Protocol, it is prohibited to execute high-risk works.

15. When the decision is made by RMG to allow the performance of high-risk works, the RMG Protocol shall be signed. If the decision making was performed via e-mail, RMG Initiator shall indicate this fact in the RMG Protocol, sign it and enclose the copies of agreement letters of the RMG Members.

16. The original RMG Protocol with enclosed documentation and copies of agreement letters shall be submitted to Occupational and Process Safety Control Department and registered in the Register of RMG Protocols prior to the start of the planned works.

17. If high-risk works have to be performed immediately because the delay would cause operations upset, incident or emergency during public holidays or weekends, the properly agreed and RMG Initiator signed RMG Protocol with all enclosed documentation and the copies of agreement letters shall be sent by e-mail to Occupational and Process Safety Control Department prior to work commencement, and the original can be handed-over and registered on the first working day following the public holiday or weekend.

18. The original RMG Protocols shall be stored in the Company Occupational and Process Safety Control Department as per Company procedures.

19. Occupational and Process Safety Control Department shall distribute the electronic copies of registered RMG Protocol to RMG Initiator, RMG Chairperson and RMG Members.

20. RMG Initiator shall submit the copies of RMG Protocol to the persons in charge of execution of organizational and technical measures listed therein.

III. REQUIREMENTS FOR HIGH-RISK WORKS

21. **RMG Initiator must:**

21.1. Prior to the start of planned high-risk works, he/she shall inspect and verify that all measures indicated in RMG Protocol are fulfilled, following the requirements established in the Company OHS procedures applicable to hazardous works (maintenance of units, unsealing, hot works and works in confined spaces), he/she shall issue a Work Permit and in the section "Other requirements and agreements" therein shall indicate that the measures listed in RMG Protocol are fulfilled;

21.2. The Work Manager shall get an attached copy of RMG Protocol together with the issued Work Permit;

21.3. Supervise the high-risk works and ensure all safety measures set in RMG Protocol are followed;

21.4. Suspend high-risk works if they are performed in unsafe manner or their performance becomes unsafe, or measures provided in RMG Protocol are not followed.

22. **Work Manager must:**

22.1. Prior to high-risk work commencement, get familiarized and familiarize workers (against signature in the Work Permit) with the high-risk works, organizational and technical measures for safe performance of high-risk works specified in RMG Protocol;

22.2. Ensure that during the high-risk works a copy of RMG Protocol is attached to the Work Permit and kept together at the worksite;

22.3. Continuously be present at the worksite and ensure the execution of measures set in RMG Protocol;

22.4. Suspend high-risk works if they are performed in unsafe manner or their performance becomes unsafe, or measures provided in RMG Protocol are not followed.

23. **Workers must:**

23.1. Sign RMG Protocol only upon familiarization and full understanding of high-risk works as well as safety measures to be followed;

23.2. During the high-risk works follow the measures set in RMG Protocol.

IV. FINAL PROVISIONS

24. Responsibility for periodic review and updating of this Procedure, if needed, shall lie with Director of Quality, Labour Safety and Environmental Control.

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2018-04-24

Document owner
Director of Quality, Labour Safety and Environmental Control
Arkadiusz Marcin Pawlak

2018-05-11

(Protocol form)
**RISK MANAGEMENT GROUP
MINUTES OF MEETING**

_____, 201____, No. _____
Juodeikiai vill., Mažeikiai distr. municipality

Chairperson – Director of Production (full name)

Members:

Initiator - (position, full name);

Deputy Director of Maintenance (full name);

Chief Specialist of Equipment Technical Supervision (full name);

Occupational and Process Safety Control Manager (full name).

DISCUSSED:

Worksite (specify the facility, process unit name, tag number of apparatus, pipeline, the existing or previous product therein, existing pressure and temperature).

Work description (describe the planned works).

Reason for RMG initiation (justify why such works cannot be performed according to standard OHS requirements).

Potential hazards (list any hazards than may occur during the works).

DECIDED:

1. To allow the aforementioned works after the following measures are implemented:

Description	Responsible for implementation (position, full name)

2. Apply the following measures during the work:

Description	Responsible for implementation (position, full name)

Comments, additional measures and persons responsible for execution

High-risk work start _____ **end** _____
(year, month, day) (year, month, day)

Attachments to Protocol

(maintenance log sheet, process diagram, sketch, schedule, etc. (please write in))

Initiator _____
(position, full name and signature)

Chairperson _____
(position, full name and signature)

Members

1. _____
(position, full name, signature)

2. _____
(position, full name, signature)

3. _____
(position, full name, signature)

Minimal OHS requirements for hot tapping into the operating pipeline, vessel or other unit by milling machine.

1. Description of Type

A nozzle is welded to the operating pipeline, vessel or other unit, a valve is attached to the nozzle, and specific milling machine is fixed on the valve. A cavity of required diameter in operating pipeline/vessel is tightly cut out by the milling machine and a formed patch is extracted.

2. Requirements before start of works:

2.1. Measure wall thickness of operating pipeline or vessel at nozzle welding points and receive a conclusion regarding possibility of nozzle welding works from Chief Specialist of Equipment Technical Supervision of Mechanical Department (or authorized person). The above conclusion shall be enclosed to RMG Protocol.

2.2. Wall thickness of pipeline or vessel shall be considered and welding method selected such as to avoid welding throughout the pipeline and its rupture.

2.3. Liquid level in a vessel shall be at least 1 m above tie-in point or product circulation shall be ensured.

2.4. Product circulation (flow) in operating pipeline must be ensured; product pressure and temperature must be decreased to the extent allowable by process operation procedure.

3. Safety requirements applicable to work:

3.1. Milling machine must be operated by employees adequately qualified and trained.

3.2. Milling machine must be operated in compliance with all the requirements (conditions) specified in the machine operating manual.

3.3. Communication means shall be used during hot works for coordination of actions.

4. Hot tapping is prohibited in the following cases:

4.1. If the unit wall thickness is below the allowed minimum wall thickness depending on alloy composition, specifications and operation conditions;

4.2. If the unit is operating in hydrogen medium or medium containing high hydrogen concentration (30 % or higher) due to likely leakage through stuffing box and potential metal hydrogen-induced cracking (embrittlement);

4.3. If the unit contains flammable substance and air or oxygen, due to potential detonation;

4.4. Into compressed air lines or air headers, because residual lubricant can ignite;

4.5. Into hydrocarbon systems operating in vacuum, due to potential detonation;

4.5. Into any vacuum tanks;

4.6. If the unit contains acids, alkalis, amines or elemental sulfur, because these substances can cause changes in metal;

4.7. If the unit contains substances, which are easily degradable or become hazardous if exposed to heat.

Minimal OHS requirements for repair of not fully prepared (not steamed-out) pipeline using special plugs (cameras)

Description of Method

1. The method of not steamed-out pipeline repair using special plugs (cameras) is usually applied when it is necessary to install a valve, tie-in, etc. into a pipeline, and due to the pipeline being very long, it is impossible and not reasonable to fully prepare the pipeline (drain the whole product from the line, flush it with water and steam it out). In this case a part of pipeline to be repaired is cut out by means of cold shear and the ends of pipeline are sealed using specific plugs (cameras).

Requirements

2. Oil products must be removed from the repaired pipeline to the extent possible; pipeline must be isolated by valves, and blinded, if possible.

3. A part of pipeline shall only be cut out by cold shear, i.e. intrinsically safe pneumatic saw, manual metal saw or special manual pipe cutter.

4. Cutting point shall be prevented from becoming hot, and shall be watered (irrigated), if necessary.

5. Cut off pipeline parts shall be sealed by specific plugs of respective size following manufacturer's manual.

6. Tightness of plugged pipeline ends shall be checked, ambient air sampling shall be made next to the plugs.

7. During hot works it shall be ensured that the pressure in the plugged pipeline parts does not exceed 70 % of pressure inside the plug (e.g. by opening air vents, drains, using pressure gauge, etc.).