**1. General.**

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| 1.1. During preparation of Operations Subdivision No 2 FCC Unit S-200 reactor section for repairs it is required to remove residual catalyst and catalyst dust from reactor section and other equipment related to this section so that this catalyst could be reused. The biggest quantity of catalyst is unloaded from regenerator R-202 via standpipes to hopper B-201. When minimum level is reached, unloading through standpipes becomes impossible. Hence, residual catalyst must be unloaded manually or with vacuum truck. Catalyst from the vessels must be vacuumed with hose equipped with special tip to prevent the entry of refractory debris. Larger pieces of refractory must be removed manually. After separating refractory debris from the collected catalyst, catalyst must be sieved and weighed. Further, suitable catalyst must be transferred into special containers and then reloaded into a hopper. Catalyst dust and unsuitable catalyst waste must be placed into 1 m³ big bags provided by the Owner and transported to a disposal site in the territory of ORLEN Lietuva. When FCC Unit is shut down, heat recovery boilers KU-401/1 and KU-401/2 together with electrostatic precipitator ESN-1 and catalyst dust collection hopper B-208 are shut down as well for inspection and extension of service life. Dust collected from them, after separation from refractory debris, must be collected, weighed and transported to a disposal site in the territory of ORLEN Lietuva which is in the distance of 1.5 km from the site of works. |
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**2. Attachments.**

2.1. R-202 catalyst collection diagram with comments in pdf format.

2.2. R-201 upper part and R-201 riser (lower part) catalyst collection, R-201 lower stripping steam header nozzle cleaning diagrams with comments in pdf format.

2.3. B-206 cyclone nozzle cleaning and catalyst collection diagrams with comments in pdf format.

2.4. T-202 cyclone cleaning and catalyst collection diagrams with comments in pdf format.

2.5. B-201 catalyst loading diagram with comments in pdf format.

2.6. Heater KR-201 catalyst collection diagram with comments in pdf format.

2.7. Heat recovery boiler KU-401/1 cleaning and catalyst dust collection diagram with comments in pdf format.

2.8. Heat recovery boiler KU-401/2 cleaning and catalyst dust collection diagram with comments in pdf format.

2.9. KU-401/1 and KU-401/2 flue gas duct cleaning and catalyst dust collection diagram with comments in pdf format.

2.10. Electrostatic precipitator ESN-1 bottom dust collection zone cleaning diagram with comments in pdf format.

2.11. Electrostatic precipitator ESN-1 hopper B-208 cleaning diagram with comments in pdf format.

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**3. Description and specifics of work.**

**3.1. General requirements.**

3.1.1. Unload residual catalyst from R-202 with vacuum truck, expected quantity from 30 to 50 m³;

3.1.2. Collect residual catalyst deposited on reactor R-201 cyclones in the upper part of reactor from 55 m mark, expected quantity 1- 2 m³;

3.1.3. Collect detached concrete refractory debris from R-201 structural packing upper part at 38 m mark, expected quantity 1 m³;

3.1.4. Clean clogged lower stripping steam header nozzles ¾“ (up to 30 pcs) from solidified catalyst and collect it, expected quantity 1 m³;

3.1.5. Collect residual catalyst in R-201 riser, in its lower part and R-202 transport line according to attached diagram. Expected quantity of residual catalyst up to 4 m³;

3.1.6. Clean vessel T-202 cyclone outlet nozzles (max quantity 153 pcs) according to attached diagram.

3.1.7. After cyclone cleaning, collect residual catalyst with refractory debris from T-202 using vacuum truck: expected quantity up to 3 m³;

3.1.8. Clean B-206 cyclone outlet nozzles (max quantity 12 pcs) clogged with catalyst according to attached diagram.

3.1.9. Collect residual catalyst with refractory debris from B-206 using vacuum truck according to attached diagram: expected quantity up to 2 m³;

3.1.10. Collect residual catalyst from fired heater KR-201 using vacuum truck according to attached diagram. Expected quantity 10-15 m³;

3.1.11. Purge catalyst dust from heat recovery boiler KU-401/1 tubes (diameter 50 mm, wall thickness 3 mm, length 7300 mm, quantity 1032 pcs) and collect using vacuum truck. Expected quantity of catalyst dust and ash 2 m³;

3.1.12. Purge catalyst dust from heat recovery boiler KU-401/1 tubes (diameter 50 mm, wall thickness 3 mm, length 7300 mm, quantity 1032 pcs) and collect using vacuum truck. Expected quantity of catalyst dust and ash 2 m³;

3.1.13. Collect catalyst dust and ash from KU-401/1 and KU-401/2 flue gas ducts (especially in the zone of dampers) using vacuum truck and, if needed, manually, according to attached diagram. Expected quantity of dust up to 2 m³;

3.1.14. Collect catalyst dust using vacuum truck and clean electrostatic precipitator ESN-1 bottom cone hoppers (8 pcs) and inlet chamber according to attached diagram. Expected quantity of catalyst dust with ash 12 m³;

3.1.15. Collect catalyst dust using vacuum truck from electrostatic precipitator ESN-1 hopper B-208 and clean it according to attached diagram. Expected quantity of catalyst dust with ash 5 m³.

3.1.16. Transfer the unloaded and collected catalyst into 1 m³ big bags, weigh and transport to a site located in the territory of Operations Subdivision No 3 (in the distance of 2 km) for sieving and storing.

3.1.17. Sieve the collected catalyst to remove any foreign matter using mesh with eyes sized 5x5 mm.

3.1.18. Place the sieved and suitable catalyst into big bags or other containers acceptable to the Contractor, weigh and transfer to a cement truck designed to carry dry and bulk cargoes, at time agreed with the Owner transport to the FCC Unit (distance of 2 km), load into hopper B-201 according to attached diagram.

3.1.19. Place sieved catalyst dust, cement debris into 1 m³ big bags, weigh, label with respective waste code and deliver to disposal site within the Owner’s territory in the distance of 1.5 km from the work site.

3.1.20. Place catalyst dust with ash collected from KU-401/1 and KU-401/2, KU-401/1 and KU-401/2 flue gas duct, ESN-1 and B-208 as well as collected concrete refractory debris into 1 m³ big bags provided by the Contractor. Aster big bags are weighed and labeled with respective waste code, deliver them to ORLEN Lietuva disposal site in the distance of 2 km from the work site.

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**3.2. Work description.**

Unload catalyst using two vacuum trucks. Install suction hoses from trucks to R-202 header in the height of 17 m. Fabricate suction tips (nozzles) with air supply for catalyst cooling and with a mesh to prevent suction hoses against clogging with sized refractory debris. Unload catalyst using two vacuum trucks equipped with analogous suction hoses with special tips (nozzles) on the ends. Some catalyst may be discharged onto the ground and then collected. It will be required to collect residual catalyst with refractory debris in B-206 and T-202 manually, to place into buckets, take out and put into big bags. After collection, it will be required take down the big bags with motor crane.

Vacuum catalyst dust deposited on R-202 cyclones and cyclone holders.

Weigh the unloaded catalyst and transport to a site indicated by OL for temporary storage, after completing the work place the catalyst into big bags.

Catalyst must be collected, vacuumed in the shortest time possible, maximum 2.5 days or 60 hours.

Catalyst sieving, sorting and transfer to a cement truck (suitable for dry and bulk products) and transportation to the catalyst hopper B-201 in the FCC Unit must take no longer than 6 days following the catalyst collection. The above applies to operations done during scheduled shutdown. The exact loading time will be set in consideration of the unit startup schedule.

Catalyst sieving, sorting and transfer to a cement truck (suitable for dry and bulk products) and transportation to the catalyst hopper B-201 in the FCC Unit must take no longer than 15 days following the catalyst collection. The above applies to operations done during a turnaround. The exact loading time will be set in consideration of the unit startup schedule.

The sieved and good for further use catalyst shall be loaded into Hopper B-201 before putting the Unit back to operation.

At the same time when catalyst is collected from R-201, R-202, T-201, B-206, KR-201, at least one more vacuum truck must be used to collect catalyst dust with ash and refractory debris from heat recovery boilers KU-401/1, 401/2, their flue gas duct, electrostatic precipitator ESN-1 and its hopper B-205 to prepare them for maintenance. The duration of this works is the same as in FCC reactor section, i.e. 2.5 days or 60 hours.

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**3.3. Special requirements (if any).**

3.3.1. Before submitting its proposal, the contractor shall visit the work site to see the working conditions, equipment arrangement, access roads, etc.

3.3.2. The Contractor shall collect catalyst and catalyst dust using at least three vacuum trucks:

3.3.3. The Contractor shall fabricate catalyst suction nozzles with air supply as catalyst may, in certain cases, be as hot as 40°C.

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| 3.3.4. The Contractor shall provide spare hoses in the event that the hoses become damaged due to high temperature or get plugged with catalyst or refractory debris.  3.3.5. The Contractor shall fabricate 5x5 mm mesh sieves or nozzles for a vacuum truck needed to collect the catalyst.  3.3.6. In its proposal, Contractor should take into account that full scope of work defined herein will have to be done two times in the period of five years during turnarounds which are preliminarily scheduled for 2027 and 2030.  3.3.7. In its proposal, Contractor should take into account that in the period of five years (2026-2030) during planned inspections scheduled for 2026, 2028, 2029 (i.e. three times as estimated) it will be required to collect catalyst dust with ash and clean ESN-1 and B-208 in one day according to work schedule agreed one month before the start of works. |
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**3.4. Requirements for work execution and documentation.**

3.4.1. The works described herein are to be performed during the refinery shutdowns and turnarounds according to approved annual schedules. Work mode shall be 2x11x7.

3.4.2. The Contractor should quote fixed price for collection, transportation, sieving of 70 tons of residual catalyst and reloading into FCC Unit hopper B-201, catalyst dust and refractory debris collection, sorting and delivery to disposal site within ORLEN Lietuva territory. Proposal should be submitted for year 2027 and 2030 and one emergency collection. Quoted fixed price must include mobilization-demobilization.

3.4.3. In case the actual quantity of catalyst and catalyst dust, including refractory chippings, exceeds 70 tons, additional payment for such shall be made at the unit or hourly rates specified in the contract based on the actual weights of catalyst, catalyst dust or refractory chippings.

3.4.4. The Contractor shall specify a unit rate per ton of unloaded/collected catalyst using a vacuum truck.

3.4.5. The Contractor shall specify a unit rate per ton of manually unloaded/collected catalyst.

3.4.6. The Contractor shall specify a unit rate per ton of sieved catalyst. The price must include the costs for transporting, sieving and transferring the catalyst into big sacks.

3.4.7. The Contractor shall quote a unit rate for transportation of 10 tons of catalyst after sieving and reloading into FCC catalyst hoppers. The rate shall include the costs of cement truck, crane or forklift.

3.4.8. The Contractor shall specify a unit rate per ton of collected, weighed and transported refractory to ORLEN Lietuva disposal site.

3.4.9. The Contractor shall specify a unit rate per ton of collected, weighed and transported catalyst dust to ORLEN Lietuva disposal site.

3.4.10. The Contractor shall quote a fixed price for KU-401/1 and KU-401/2, their flue gas cleaning, sorting of waste (up to 6 tons) and delivery to the Owner’s disposal site for the year 2026, 2027, 2028, 2029, 2030 and one emergency cleaning including mobilization.

3.4.11. The Contractor shall indicate unit rates for all equipment, machinery and workers (based on specialization) to be used for all the above works.

3.4.12. The Contractor shall quote fixed price for collection of catalyst dust (17 tons) from ESN-1 and B-208 into big bags, weighing and delivery to disposal site in the distance of 1.5 km from the work site. The price should be quoted for the year 2026, 2027, 2028, 2029, 2030 and one emergency collection. Quoted fixed price must include mobilization-demobilization.

3.4.13. The Contractor shall have its own certified electrical engineer authorized to perform electrical connections/disconnections of Contractor’s equipment to/from Owner’s power networks/facilities.

3.4.14. The Contractor shall install temporary illumination >300Lx inside all pressure vessels indicated in this Work Package in accordance with the established procedure. Illumination is required for cleaning, repair and inspection works.

3.4.15. The Contractor shall appoint an entry attendant for inspections and repairs inside pressure vessels, and fire watcher for repairs of piping, pressure vessels by welding as prescribed by OHS Procedures BDS-6/2, BDS-7.

3.4.16. Office and tool trailers (including mobilization / demobilization thereof) shall be included into the price of works. The Owner will provide a designated space for such containers and the possibility to connect utilities.

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**3.5. Qualification and Technical Requirements for Contractor.**

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| |  |  |  | | --- | --- | --- | | Item No. | **Qualification criteria** | **YES/NO** (if marked YES, necessary supporting documentation must be attached; otherwise, the proposal will be withdrawn from further evaluation) | | 1. | Valid certificate issued by the National Energy Regulatory Council (NERC) of the Republic of Lithuania authorizing maintenance/operation of crude processing facilities: maintenance of crude processing units (irrespective of their operating parameters); maintenance of tanks and their appurtenance (irrespective of volume) designed for storage of crude oil and/or petroleum products (except LPG) and other liquid fuels. In case of absence of a valid certificate, a letter of commitment shall be presented stating that, in case of contract award, a valid certificate will be submitted not later than 2 weeks before the start of works; otherwise, the proposal will be withdrawn from further evaluation. | YES/NO | | 2. | List of subcontractors (if any). Where subcontractors are indicated, it shall be required to present their valid (NERC) certificates for respective works. Where it is indicated that subcontractors are going to be engaged but they are either not named and/or their valid NERC certificates are not attached, the proposal will be rejected or, in case of necessity, requested to revise it. | YES/NO | | 3. | List of analogous works – cleaning, dry collecting performed at crude processing, chemical, energy enterprises in the recent 5 years. If the list is not provided, or the works are not analogous and / or were performed in other than crude processing, chemical, energy enterprises, the proposal will be withdrawn from further evaluation. | YES/NO | | 4. | The number of work managers. The requirement from OL is 1 work manager per 15 workers in a shift. A work organization chart based on shifts shall be presented for the purpose of this requirement. In the absence of such information, the proposal will be withdrawn from further evaluation. | YES/NO | |  | **Technical requirements** |  | | 1. | Certificate of compliance with EN ISO 90001:2015 (LST EN ISO 90001:2015). |  | | 2. | Certificate of compliance with EN ISO 14001:2015 (LST EN ISO 14001:2015). |  | | 3. | Proof that Contractor’s OHS management system complies with ISO 45001:2018 (LST ISO 45001:2018) or other EU occupational health and safety standards. |  | | 4 | List of company employees with employment contracts and rigger qualification. |  | | 5. | List of company employees with employment contracts and crane operation manager (supervisor) certificates. |  | | 6. | A work schedule developed and signed by the Contractor. The schedule shall be based on two 11-hour shifts. 7 days a week in consideration of the operation durations specified in the Scope of Work. Note: in case of failure to submit such signed Schedule, the proposal will be withdrawn from further evaluation. |  | | 7. | Confirmation that the contractor will provide minimum three vacuum trucks for collection of catalyst and catalyst waste. |  | | 8 | Confirmation that the Contractor will provide its own or rented cement truck for the transportation and loading of cleaned catalyst into the hopper B-201. The truck must be suitable to carry dry and bulk products and for performing the works described herein, have working pressure safety devices (pressure gauges, safety valves etc.) |  | | 9. | Confirmation that the Contractor will provide the containers required to collect, sieve and load the catalyst into the cement truck. |  | | 10. | Confirmation that the Contractor will provide the vehicle required to transport sacked catalyst and waste in the territory of ORLEN Lietuva, also means to load/unload the sacks to/from the vehicle in the place of storage. |  | |
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**4. Materials, equipment, and services to be provided by the Owner.**

4.1. Cranes, forklifts needed to take down, transfer or load the packed catalyst into transport in the Operations Subdivision No 2;

4.2. Installed scaffolding, rope ladders required for catalyst vacuuming, sieving, loading;

4.3. Weighing and storing of collected, sieved or otherwise sorted catalyst in the territory of Operations Subdivision No 3;

4.4. Checking of the sieving quality of collected catalyst;

4.5. Checking of the sorting quality of waste generated during catalyst collection and sieving;

4.6. Organizing the disposal of waste sieved from the catalyst; waste code labels for big bags.

**5. Materials, equipment, and services to be provided by the Contractor.**

5.1. All the equipment and work means required for catalyst collecting, sorting and sieving;

5.2.Spare hoses to be used in case vacuum truck hoses wear out due to exposure to high temperature;

5.3 Cement truck for dry and bulk products capable of generating pressure up to 1.5 bar and equipped with verified pressure safety devices.

5.4. 1 m³ sacks for collection of catalyst into such;

5.5. Forklifts or cranes for reloading/relocating of big bags in the sieving site, waste disposal site.

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**6. Requirements for work completion.**

Upon work completed, the contractor shall tidy up the work site where catalyst and catalyst residue were collected, also the area where catalyst was stored before sieving and reloading.

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**7. Requirements for work acceptance.**

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| 7.1. Unloaded catalyst shall be weighed before sieving; a weighing report shall be issued.  7.2. Unloaded and sieved catalyst must be weighed before loading into the hopper B-201, with a weighing report issued. This can be done by weighing the vehicle before and after loading the catalyst.  7.3. All catalyst dust and refractory in the catalyst must be sorted, weighed and transported to a waste disposal site indicated by ORLEN Lietuva. |
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**8. Requirements for work schedule.**

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| 8.1. Work period: 2026 to 2030.  8.1. The nearest shutdown is estimated from 2 March 2026 to 17 March 2026.  8.3. The nearest turnaround is estimated from 26 April 2027 to 30 May 2027.  8.4. Shutdown 2028 scheduled for March-April 2028.  8.5. Shutdown 2029 scheduled for March - April 2029.  8.6. Shutdown 2030 scheduled for March - April 2030.  Works shall be performed in two 11-hours shifts 7 days a week. This shall apply to all types of shutdowns. Preliminary dates of each specific Shutdown shall be provided 1 year in advance of the planned commencement of works and shall be updated in more detail 1 month prior to the commencement of works.  ESN-1 and B-208 catalyst and ash collection works may be performed also in May-June, irrespective of the timing of shutdowns. |
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**Other information required for procurement *(information provided in this Item will not be sent to contractors).***

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| Conclude a long-term contract for the period of 2026-2030 (inclusive). In the contract, provision the possibility of 1 non-scheduled shutdown. |
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