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«Confirm»

Deputy General Director

Khalilov N.

“07” 01 2020y



## REQUIREMENTS SPECIFICATION

for procurement of a stationary shunting device (railway car transportation system) with a bogie and automatic coupling for moving a railway tank cars to/from loading racks of “Uzbekistan GTL” LLC

## 1. PRODUCT DESCRIPTION

The stationary shunting device with a bogie and automatic coupling (railway car transportation system) is designed for maneuvering up to 32 loaded railway tanks on loading racks.

## 2. PURPOSE OF PROCUREMENT

The stationary shunting device with a bogie and automatic coupling (railway car transportation system) is used to move empty tanks under loading racks and after the railway tanks with petroleum products are loaded up, to move the loaded tanks to empty places of the rack, as well as to perform all types of shunting works with tanks within the GTL Plant. There are 4 loading racks on site and 1 set of shunting device will be installed for each loading rack, that is, the stationary shunting device will perform all shunting works on the racks within 24 hours. The device for moving railway cars shall comply with U 1 standard according to GOST 15150-90, as well as GOST 22235-2010 "Freight cars for 1520 mm gauge main line railways".

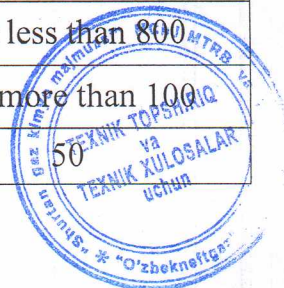
## 3. BASIS OF PROCUREMENT

3.1. Pursuant to the Decree of the President of the Republic of Uzbekistan No.PP-2706 dd. December 29, 2016 "On additional measures for implementation of "Production of synthetic liquid fuel based on purified methane of Shurtan Gas Chemical Complex" Investment Project" and on the basis of orders of the Cabinet of Ministers of the Republic of Uzbekistan No.868-F dated August 8, 2017, Attachment 1, p.7, "Construction of railway infrastructure, including installation of railway car transportation system". The financing will be at Shurtan GCC LLC's own cost and expense.

## 4. TECHNICAL REQUIREMENTS

Main technical characteristics of one stationary shunting device with a bogie and automatic coupling.

No.	Indicator name, unit of measurement	Value
1	Maximum traction force, kgf	Not less than 28,000
2	Maximum number of loaded tank cars (to move to one coupling), pieces.	Up to 32
3	Standard size of traction rope	37-G-1-C-H-P-1860 GOST 2688-80
4	Train movement way	Reverse (pull/push)
5	Maneuvering (rope) length (approx.), m	Not less than 800
6	Engine designed capacity, kW	Not more than 100
7	Network frequency, Hz	





8	Equipment material	Steel St 3Sp5, St15, St 3
9	Maximum weight of waggonage, t	Up to 2500
10	Maximum weight of 1 (one) loaded tank	75
11	Operating maneuvering speed, m/s	Not less than 0.2
12	Idle maneuvering speed, m/s (used to return the SA-3 bogie to the spur track), m/s	Not less than 0,4
13	Voltage, V	380
14	Class of explosion hazard	ExD
15	Climate control	Y
16	Rail gauge (track) width, mm	1520
17	Operating temperature range, °C	-30÷ +50

## 5. REQUIREMENTS TO THE EQUIPMENT

5.1 Approximate dimensions are shown in the attached diagram.

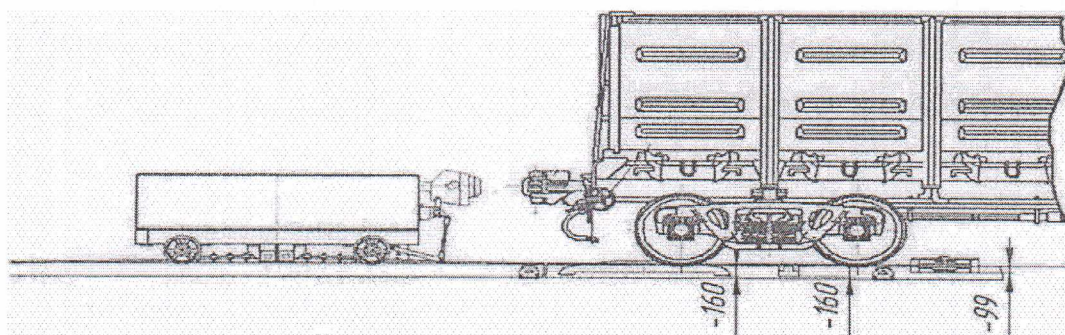


Fig. 1.

Diagram of shunting device with bogie and automatic coupling (railway car transportation system) on 1520 mm gauge

5. I. 1. Sample of equipment of railway car transportation system.

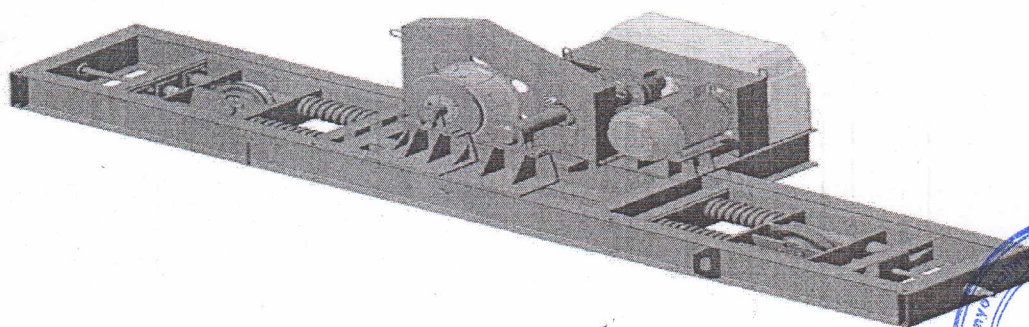


Fig. 2



Схема расположения внутриплощадочной ж/д завода GTL

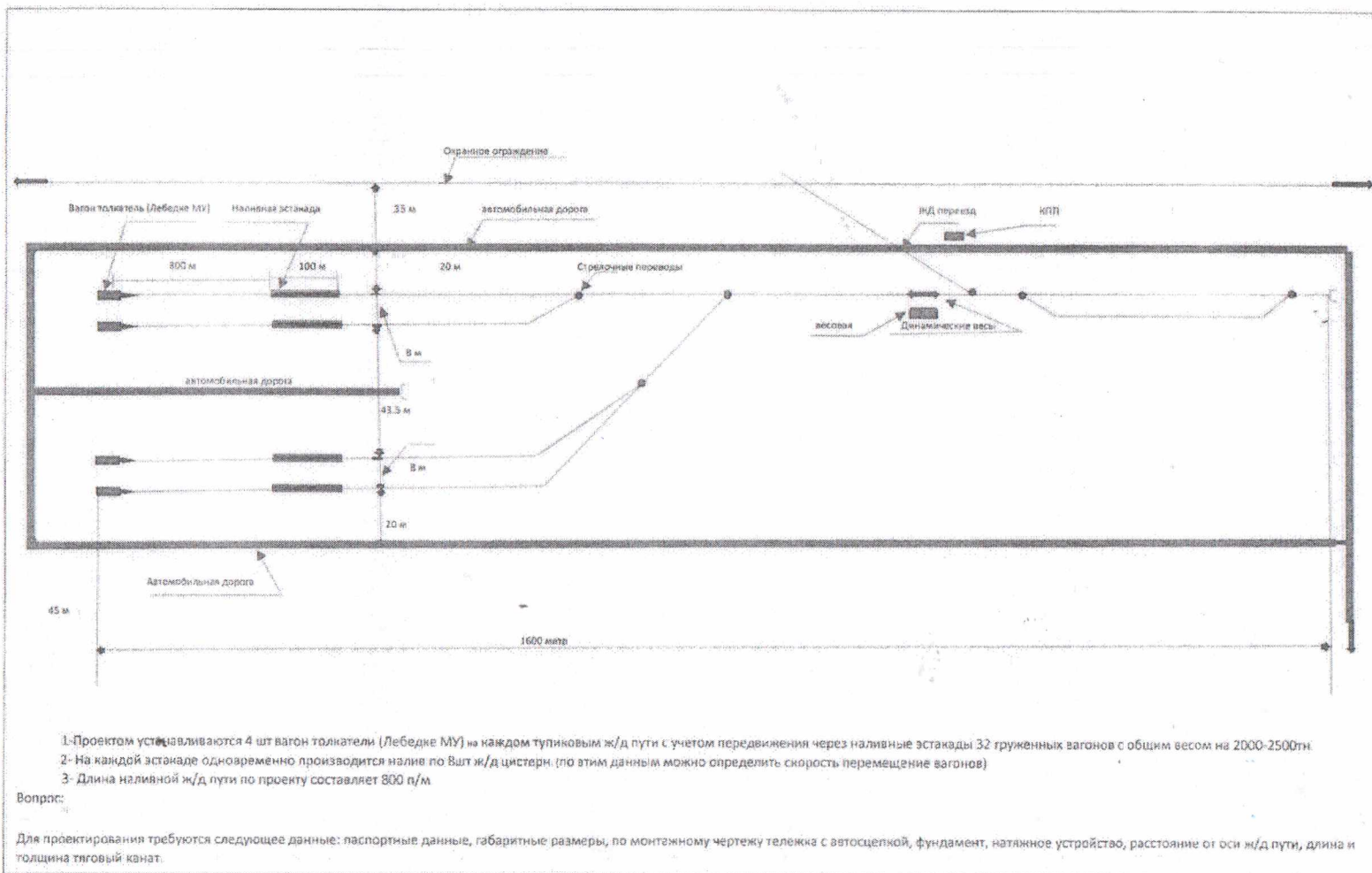


Fig.3



*Text inside the figure:*

*Layout of the GTL plant railway in the inside*

- 1. The Project provides for 4 shunters (winding gear MU) on each spur track, taking into account the movement of 32 loaded wagons through the loading racks with a total weight of 2000-2500 tons.*
- 2. Each loading rack simultaneously fills 8 railway tanks (this data can be used to determine railway car movement speed)*
- 3. The length of loading railway track as per the design is 800 linear meters*

*Question:*

*The following data is required for design: passport data, overall dimensions, according to installation drawing bogie with automatic coupling, foundation, tensioner, distance from the axis of the railway track, length and thickness of traction rope.*

*Охранное ограждение – guarding*

*Вагон толкатель (лебедка МУ) – wagon pusher (hoist)*

*Наливная эстакада – loading rack*

*Автомобильная дорога – motor road*

*Стрелочные переводы – switch*

*ЖД переезд – railway crossing*

*Весовая –weigh station*

*Динамические весы – dynamic balance (weighing machine)*

*КПП – check point*

5.2 The Manufacturer shall agree upon the detailed drawings with the Customer prior to manufacturing process of the shunting device (railway car transportation system).

5.3 The Manufacturer is also responsible for compliance of technical parameters with applicable steel and metal grades of the shunting device.

5.4 Prior to delivery of the equipment, the Manufacturer of the shunting device shall agree upon the list of equipment with the Customer.

5.6 The equipment shall be new, unused and unrestored before.

5.7 The equipment shall be manufactured not earlier 2019.

5.8 The shunting device shall comply with regulatory documents in the field of technical regulation, including GOST32885-2014 "Automatic Coupling, model SA-3", GOST 9246-2013 "Two-axle three-element bogie of freight cars of 1520 mm gauge railway", GOST 12.2.020-76 "System of labor safety standards", environmental and sanitary standards.

5.9 The shunting device shall comply with requirements of safety and fire safety regulations.





5.10 Marking shall meet the Manufacturer's requirements for marking, taking into account regulatory technical documents.

5.11 The shunting device during transportation and storage shall be packed and reliably protected from external factors.

5.12 The shunting device shall be insured.

5.13 The Manufacturer is responsible for supply/installation of the equipment.

5.14 Installation supervision, commissioning and training of the operating organization's personnel will be performed by the Supplier.

## 6. REQUIREMENTS TO EACH SET

Shunting device shall consist of next complete set:

6.1. Power-drive station — 1 unit:

6.1.1. Spring-loaded belt tensioner;

6.1.2. Friction drum has a lining of wear-resistant steel;

6.1.3 Explosion-proof engine

6.1.4. Brake of explosion-proof version.

6.2. Drive protective shelter - 1 set.

6.3. Bogie with automatic coupling SA- 1 unit.

6.4. Deflecting block - 4 pcs.

6.5. Pressure roller - 2 pcs.

6.6. Carrier roller for the rope (with attachment directly to the rails) - 30 pcs.

6.7. Rope cleaner - 4 pcs.

6.8. Electrical equipment.

6.8.1. Power supply cabinet with frequency-controlled drive in general industrial version IP54 - 1 pc.

6.8.2. Stationary local control panel with emergency shutdown in explosion-proof version (in the loading area) - 1 pc.

6.8.3. Stationary local control panel with emergency shutdown in explosion-proof version (in the shunting device drive area) - 1 pc.

6.8.4. Explosion-proof sound / light alarm on the drive of the shunting device - 1 set.

6.8.5. Explosion-proof sensors of end positions (operating and emergency) - 2 sets.

6.8.6. Explosion-proof intermediate stop sensors - 2 units.

With the view of integration into the existing control system and for data exchange with the automated process control system, the shunting device control system shall be approved by the GTL plant.

## 7. PACKAGE OF TECHNICAL DOCUMENTATION.

In order to ensure long-term and stable operation of the shunting device, the Supplier shall provide a package of engineering and process control documentation, including, but not limited to:

❖ Bill of sale;





- ❖ Consignment;
- ❖ Passport and operating instructions;
- ❖ List of packaged parts;
- ❖ Specification of materials;
- ❖ Certificate of origin, certificate of conformance;
- ❖ Results of dimensions inspection
- ❖ Assembly and erection drawings;
- ❖ Spare parts for 2 years.

## 8. SCOPE OF DELIVERY

4 complete sets of the shunting device with a bogie and automatic coupling (railway car transportation system) for moving railway tank cars to/from loading racks of the GTL Plant according to Fig. 3 above.

The set and marking shall meet the requirements ensuring safety and security of the shunting device during transportation and loading and unloading operations and reliable delivery of the cargo to the destination - Kengsoy station 732602, "Uzbekistan Railways" JSC, Consignee – "Shurtan GCC" LLC, cargo code - 4198.

### *Terms of delivery:*

<b>Delivery by railway cars</b>	DAP - Kengsoy railway station (station code 732602, "Uzbekistan Railways" JSC
<b>Delivery by automotive transport</b>	DAP — the Republic of Uzbekistan, Kashkadarya Region, Guzar District, settlement Shurtan, 180300

## 9. EXPERIMENTAL INDUSTRIAL TEST

1. The bench test of equipment in the presence of the Customer's (operating organization) representative and all transportation costs shall be reimbursed by the Equipment Supplier.
2. In-situ test of the railway shunting device with a bogie and automatic coupling (railway car transportation system) is carried out at a maximum rated thrust after installation works (the GTL Plant).

## 10. REQUIREMENTS TO SERVICE AND OPERATING LIFE OF EQUIPMENT

Requirements to the guaranteed terms are as follows:

- 10.1 Warranty operating life after commissioning is 24 months.
- 10.2 The service life of the equipment is determined by a producer or manufacturing plant, taking into account energy consumption and operating costs in accordance with regulatory and technical documentation, but shall not be less than 5-10 years.



## **11. DELIVERY TERM**

The Supplier shall manufacture and deliver the goods within 92 (ninety-two) calendar days from the date when the notification of equipment manufacturing is received.

## **12. REQUIREMENTS TO THE RULES OF ACCEPTANCE OF THE GOODS**

Upon arrival of the cargo (the shunting device), the acceptance certificate shall be issued and acceptance conditions shall be met under the contract concluded with the Supplier, including:

- visual inspection of the equipment package;
- equipment completeness shall be accepted according to sections 6 and 7;
- the certificate shall be issued in two copies;
- each copy shall be certified with original signatures;
- in the event of a loss or damage to the equipment completeness of the equipment, the Supplier shall remedy it within 10 calendar days from the date of submission of the claim by the Customer or operating organization (the GTL Plant).

## **13. ADDITIONAL REQUIREMENTS**

Each bidder shall include the following information in the technical proposal:

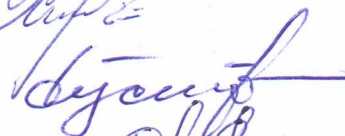
- the submitted technical proposal shall be written in Uzbek or Russian language and duplicated in English;
- the submitted technical proposal shall have a copy on electronic media (CD/DVD disks or USB storage media);
- certificates shall be provided (international certificates ISO-9001, ISO-14001, ISO-45001, ISO-50001, manufacturer's quality certificate and/or other certificates of international recognized laboratories and test centers).

**Chief mechanic of SGCC:**



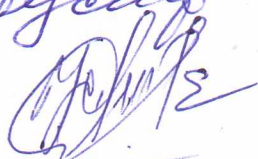
**Kh. Allayorov**

**Chief power engineer of SGCC:**



**A. Beknazarov**

**Head of the railway transport service:**



**E Jovliev**

**Agreed with (Uzbekistan GTL JSC):**



**Leading railway specialist of GTL:**

