



**OUTDOOR LIGHTING IN
THE OIL AND GAS INDUSTRY.**

**JSC "GAZPROM"
JSC "ROSNEFT"
SC "KAZTRANSOIL"**

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AmiRA
ГРУППА КОМПАНИЙ

“AMIRA” Group of Companies

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“AMIRA” Group of Companies was founded in 1991 in Saint-Petersburg.

The group is comprised of design, manufacturing, sales and installation company. This allows a comprehensive approach to the solution of problems of outdoor lighting.

A comprehensive approach includes:

- Perform lighting calculation
- Design work on the selection of equipment
- Design of foundation
- Manufacturing of the metal products as well as lighting equipment
- Installation of foundations at the facility
- Delivery the products to the facility
- Assembly of masts
- Installation of metal products on the foundations
- Installation of additional equipment
- Installation of lighting equipment
- Targeting lighting products at the design solution

For the facilities of JCS “GAZPROM: compressor and gas distribution stations, UGS territory, ground storages of materials and equipment, fuel storages, the finished product warehouses, tank farms, production area and gas fields, driveways, camps, airports, helipads, sport facilities.

“AMIRA” Group of Companies offers the following list of equipment:

- Combined design for lightning protection and lighting: VMO, VGM, VGN, MVGMK, UP-MVGMK (reinforced constructions, taking into account the peculiarities of seismic regions, were designed special for “South stream”)
- The lightning rods in height up to 80m - MOGK, reinforces – MOGK.
- Hinged lighting poles, for installation in hard to reach places – OGKS, they can be serviced without using of special equipment.
- Polygonal conical poles for driveways lighting – OGK (for underground power supply), OGS (for air power supply and installation of the additional equipment).
- Lighting equipment, including LED and electronic ballasts.
- Poles for radio relay communication, flagpoles- SVNT.

All offered items are manufactured on the own factories. The products are certified.

The manufacturer has certification according to ISO 9001:2008 # 13.0894.026 from the May 2013.

The equipment made in AMIRA Group is intended for outdoor lighting and lightning protection. Now the production is successfully operated in such places as:

- | | |
|---|---|
| - Compressor station “Babaevskaya”, | - Compressor station “Portovaya”, Vyborg |
| - Compressor station “Sheksninskaya”, | - Compressor station “Pikalevskaya”, Vyborg |
| - Compressor station “Kazachiya”, | - Compressor station “Kubanskaya” |
| - Compressor station “Krasnodarskaya”, | - Compressor station “Novonuksenitskaya” |
| - Compressor station “Volhovskaya”, | - Compressor station “Novourdomskaya” |
| - Compressor station “Mikun”, | - Compressor station “Baidaratskaya” |
| - Line production department of main gas pipelines Pecherskoye | |
| - Line production department of main gas pipelines Vorkutinskoye | |
| - The gas extraction system Bovanenkovo-Uhta,- Bovanenkovskoye oil and gas condensate field | |
| - Surgut oil refinery, | - Rosneft oil refinery |
| - Gas distribution station “Rosneft”, | - Gas distribution station “Okulovka” |
| - Gas distribution station “Romanovka”, | - Gas distribution station “Svetogorsk” |

- Gas distribution station “Luban”

The brochure presents the objects selectively oil and gas industry.

FUNCTION:

Lightning rods are used for lightning protection of buildings and structures as well as for lighting of large areas.

The height of MVGMK- up to 70m, MOGK – up to 80m.

STRUCTURE:

- Combined design for lightning protection and lighting “MVGMK” are the steel polygonal poles (masts), with lighting equipment and lightning arrester (steel rod, protected from corrosion) on the top.
- The poles are made by bending sheet cold-resistant steel 09G2S, have higher strength characteristics, one or two longitudinal seams. The poles are protected from corrosion by hot dip galvanizing (GOST 9.307.-89). The thickness of the hot zinc is not less than 100mk. The zinc coating layer retains its properties about 15-20 years.
- The lighting equipment is located on the mobile crown.
- The pole with mobile crown has 3 cable system hoisting and lowering of crown. It excludes misalignment and jamming.
- In the working position the pole has the locking mechanism. This eliminates the constant influence of the weight of the crown on the cable system, the increased vibration and premature failure of the lamps during their operation.
- Fixing of lighting fixtures allows you to adjust the position of the lighting equipment in two planes, it allows to reach the uniform illumination.
- Lifting and lowering gear for lifting equipment up to 1500 kg can be in various modifications. For the pole operation can be used hand and portable power tools.

The design of the mobile crown is adjusted individually on the type and quantity of lighting equipment to be installed on the masts MVGMK.

For the installation of the masts MVGMK is required the installation of the base plate details (anchor bolts). Install the bolts allows you to adjust the amount of deviation of the pole from the vertical axis without dismantling of the constructions and without destroying the foundation. Adjusting the deflection of the pole is carried out by the adjusting the height of the screws of the base plate details.

The set of the poles MVGMK includes all cable products and switchboard equipment. Therefore it does not require additional equipment.

The power to the projectors is carried out using special frost resistant flexible cables. There are three possible connection options (operating mode lighting, emergency lighting mode, additional powered obstruction lights). Equipment cable products are carried out by the manufacturer.

According to the customer's requirement in the set of poles MVGMK can be included the equipment for the lightning protection.

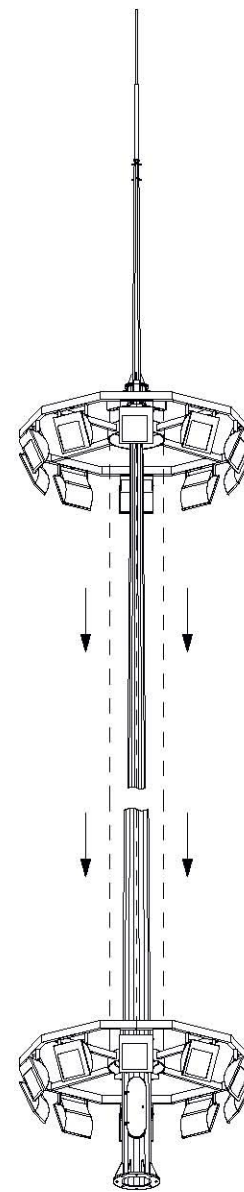
ADVANTAGES:

Maintenance is carried out from the ground by one electrician and do not required the special equipment.

The supporting structures of the poles MVGMK are made by bending sheet cold-resistant steel 09G2S or analogue, according to specifications (TU). To be installed on the gas pipeline "South stream" in various wind and seismic conditions was proposed standardized equipment Ups-MVGMK and MOGKs.

The poles MVGMK have the locking mechanism. This eliminates the swinging of the lighting equipment by the wind and the constant influence of the weight of the crown on the cable system. This mechanism allows using this pole MVGMK in the regions with increased wind load. The axis of the pulley and the rope hoist is made of stainless steel. Convenience and ease of delivery and installation. The poles are manufactured by segments of length up to 12,5 m. It allows using the standard trucks, excluding the special transport. Installation of segments between them takes place on the basis of the cone to cone.

The set of the poles MVGMK includes all cable products and switchboard equipment. Therefore it does not require additional equipment.



Lightning rod "VGM, MVGMK"



Lightning rod "VGN"

Compressor station
"Novonuksenitskaya"



The main gas pipeline
"UHTA - TORZHOK"

The type of equipment:

MOGK - 41

Compressor station
KS-12 "MIKUN"

The main gas pipeline
"UHTA - TORZHOK"



Airport "BOVANENKOVO". High Masts VMO-25, VMO-30
Bovanenkovskoye oil and gas condensate field

Compressor station
"Baidaratskaya"
the main gas pipeline
"UHTA - TORZHOK"





Compressor station
"PORTOVAYA"

the gas pipeline
"GRYASOVETS-VYBORG"

Compressor station
"BABAEVSKAYA"

the gas pipeline
"GRYASOVETS-VYBORG"

The type of equipment
MVGMK-41 (II)



AMIRA GROUP delivered equipment for lightning protection and outdoor lighting of compressor's areas

The type of equipment

Combined design for lightning protection and lighting type MVGMK, projectors, lightning rods MOGK with height up to 40M

Compressor station
"SHEKSNINSKAYA"

the gas pipeline
"GRYASOVETS-VYBORG"



Compressor station
"BABAEVSKAYA"

the gas pipeline
"GRYASOVETS-VYBORG"

The type of equipment
MVGMK-41 (II)



"SURGUT OIL REFINERY", SURGUT



AMIRA GROUP delivered equipment for lightning protection and outdoor lighting of compressor's areas

Complex preparation of tank wagons for loading on the Surgut oil refinery
The customer JSC "Gazprom" transgas Surgut



SURGUT OIL REFINERY, SURGUT



The type of equipment
- High Masts
VMO-20/10
Lightning rods
MOGK-20



The gas pipeline "SOUTH STREAM"



Compressor station
"KUBANSKAYA"

The western route

Type of equipment:
MOGKs-41
UP-MVGMK-41 (II)

Compressor station
"KAZACHIYA"

Western and Eastern
routes



Compressor station
"KUBANSKAYA"

The western route

Compressor station "KAZACHIYA" >



BLUE STREAM. THE GAS PIPELINE RUSSIA-TURKEY AT ISOBILNOE - DZHUBGA. CS "KRASNODARSKAYA". THE OUTDOOR AREA'S LIGHTING.



Compressor station
"KRASNODARSKAYA"

Type of equipment:
MOGKs-41
UP-MVGMK-41 (II)

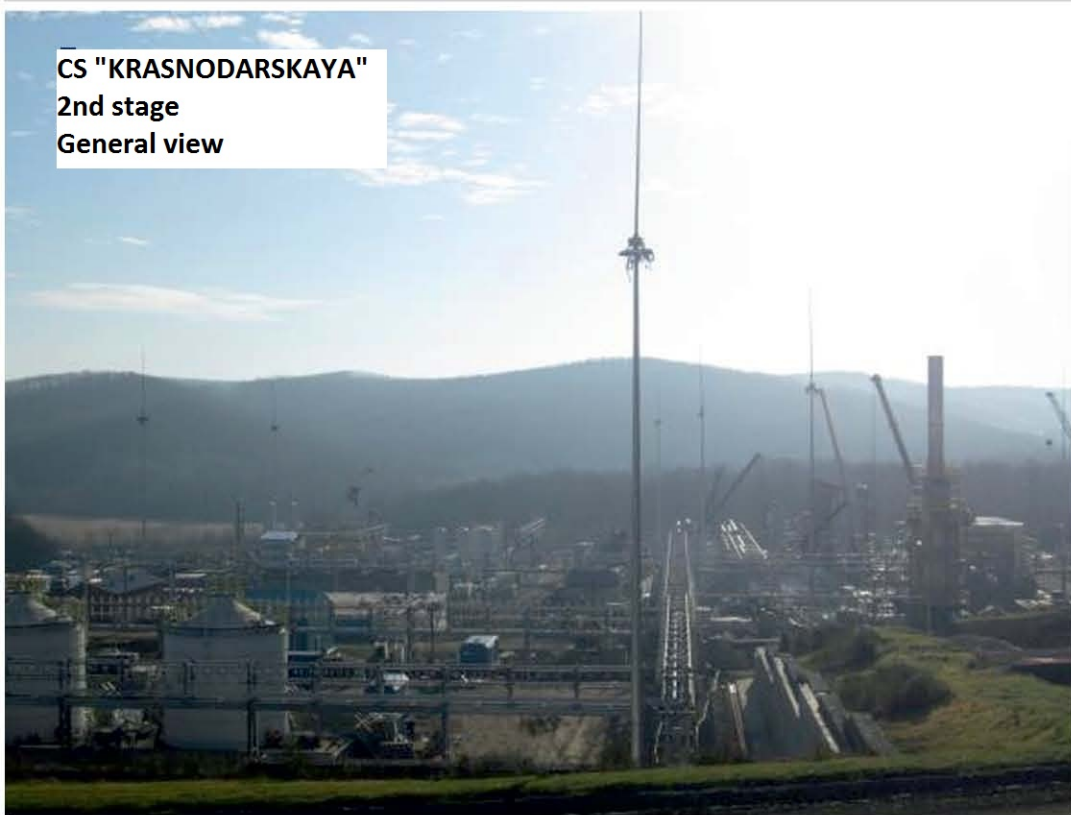
The regeneration gas cooler

Work is underway on the trim
sheet.



The regeneration gas heater. Work is underway to harness technological
pipelines.

CS "KRASNODARSKAYA"
2nd stage
General view



BLUE STREAM. THE GAS PIPELINE RUSSIA-TURKEY AT ISOBILNOE - DZHUBGA. CS "KRASNODARSKAYA". THE OUTDOOR AREA'S LIGHTING.



High Mast - Lightning Rod
10P MVGMK-41 (II) - 6 hot dip
galvanized

The installation of luminaries

The capacity of the
condensate collection.



Installation of recycling of process water

The supply network.
The installation of poles and luminaries.





"ILSKY" refinery

Type of equipment:
High masts with fixed
crown VMON-20, VMON -
30M, lightning rods
MOGK and VGM

"TUAPSINSKY"
refinery



Novokuibyshevsk oils and additives plant



The fuel dispensing complex in Rostov-Don





Oil and gas field "PUROVSKOE"

Yamalo-Nenets Autonomous
Okrug

Type of equipment:
Lightning rods VGN and VGM, poles
OGK, projectors, luminaries



Type of equipment:
Lightning rods VGM-40, projectors

AMIRA GROUP delivered equipment for
lightning protection and outdoor lighting

