

## SERGEY PURTOV

Date of birth: 12<sup>th</sup> September, 1973

Nationality: Russian

Gender: Male      Family status: married, 4 children

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### PROFILE

LNG gas treatment process engineer with cryogenics background (small scale LNG, air separation, rare gases, liquid helium).

### PROFESSIONAL BACKGROUND

#### **Yamal LNG, Moscow- Sabetta (Yamal region)**

**Since 2013**

Yamal LNG project will be producing 16.5 MTPA of LNG. Three LNG trains of 5.5 MTPA each, first train is in operations since December 2017. Train 2 and 3 will be put in operation soon.

#### **Gas treatment team lead, Technical services department (2 employees)**

Scope: Technical services department is responsible for support of design and operation of Yamal LNG plant safe, reliable and efficient and to meet target production goals. Process engineering support of design, construction, commissioning, startup and operation.

Gas treatment team scope is – common inlet facilities (slug catchers, gas separators, condensate stabilization, methanol regeneration, stabilization gas compression) and “warm end” of LNG trains – Acid gas removal unit, Dehydration and mercury removal unit.

- Process support of EPC phase (EPC contractor process deliverables review (BOD, P&D, process datasheets, CAE, SLD), HAZOP, SIL review, 3-D model review).
- Operation readiness (preparation of startup sequence, review of work instructions, safeguarding review).
- Commissioning support (Vessel internal inspections, P&ID markups).
- Startup support (Operation advise, Equipment trends review, troubleshooting, alarm management, process upsets and incidents investigation and RCA).
- Operation team support (Daily advices to panel, long term process monitoring, process optimization and debottlenecking, alarm management, review of operating manuals and procedures).
- MOC (Management of changes) – proposal and implementation of required changes for improving safety, reliability and operability of the plant.
- Russian legislation compliance (Process procedures, Contractor documentation review).

#### **Premium Engineering, Moscow**

**2009-2013**

Premium Engineer

#### **Head of gas processing department (6 employees)**

- Review of process design from international equipment vendors, process adaptation to Russian legislation requirements. Equipment purchase orders process deliverables development.
- Base process development, equipment sizing and selection on pre-feed stage. Support of sales department (process development, preliminary equipment sizing, customer

negotiations).

- Design documentation review
- Process engineering design (HMB simulation, PFDs, P&IDs, equipment and valves datasheets, instrument datasheets).
- Commissioning, startup and early operation support (process manuals development, control loops tuning, checking of equipment, client personnel training)

**JSC Cryogenmash, Balashikha, Moscow region**

**2003-2009**

**Head of process engineering department (more 50 employees) (2007-2009)**

- Air separation unit process engineering documents development.
- Equipment commissioning and startup
- Engineering review of subcontractors proposals and documentation

**Lead researcher(2003-2007)**

- HYSYS adjustment for air separation units simulation, connection of legacy company software to HYSYS (column and heat exchangers sizing).

**Bauman Moscow state technical university**

**2000-2009**

**Associate professor (part-time job).**

- Lead of Student's Diploma

**UNC "Cryoconsul", Bauman Moscow state technical university**

**2000-2004**

**Lead research engineer**

- Development of cryogenic plants for neon-helium mixture separation. Process and equipment design, manufacturing supervision, commissioning, startup and early operation

## **KEY PROJECTS**

**Total 35+ projects in air separation, gas processing, refrigeration.**

**20+ air separation projects for Cryogenmash.**

**Yamal LNG project, Sabetta, Russia, 2017 r.**

- First Russian Arctic LNG plant. Major international project. Successful startup of first LNG train in December, 2017. Involvement since beginning of EPC phase.

**Cryogenic plant for dry stripped gas processing (NRU), «Tatneft», Almetyevsk, Russia, 2011 r.**

- First nitrogen removal unit in Russia. Nitrogen (up to 28%) if removed from dry stripped gas (53000 Nm<sup>3</sup>/h) with two product streams - ethane fraction and methane fraction. The plant includes turbo expander process with lowest temperature minus 183 °C and two-columns. Detailed engineering based on basic project of Gas Liquid Engineering (Canada)

**Associated petroleum gas processing plant, South oil, Kenlyk field, Kazakhstan, 2011 r.**

- The plant processes 12000 nm<sup>3</sup>/h of APG with production of dry gas, LPG and gasoline. The process is based on propane refrigeration, includes 2 columns, extraction of C<sub>3</sub>+ if above 85%. Vendor documentation review, commissioning and startup.

**Neon-helium mixture separation plant, Iceblick, Odessa, Ukraine, 2003**

- World largest neon production plant as per Iceblick information. Separation at 27 K (minus 243 °C) with high purity neon production.

## **ENGINEERING SKILLS**

- Deep knowledge of process engineering basics (thermodynamics, heat exchange, hydraulics).
- Software – Autocad, Aspen One (HYSYS, equipment sizing), MS Office, programmer (VBA, MS studio).
- Experience in both small scale and large projects at all stages – from proposal to implementation.

## PERSONAL SKILLS

- Self-motivated, well –organized, organizational and communication skills
- Strong analytical skills, quick learner
- Training and mentoring of process engineers
- Experience of work in multicultural environment

## EDUCATION

Bauman Moscow State Technical University, Power Engineering Department, Chair «Cryogenics, Refrigeration and Air Conditioning»

### **Ph. D in Cryogenics**

**2000**

Thesis: *“Neon and neon-helium cryogenic plants simulation”*

**Supervisor: Prof. A.M. Arkharov, Head of Cryogenics and Air conditioning chair of BMSTU**

**Student, Research engineer, Low temperature physics and engineering**

**1990-1997**

## FOREINGN LANGUAGES

- English – fluent. Use English as a working language

## AWARDS

- Member of International institute of refrigeration (IIR), Paris
- International Institute of Refrigeration Karl Von Linde prize for young researchers in Cryogenics (2007)

## ADDITIONAL INFORMATION

- Country of residence: Russia
- Notice period: 1 month