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DIAGNOSTICS SYSTEM OF JSC GAZPROM'S GAS MAINS

BASIC REGULATIONS

- ✓ **FEDERAL LAW ON THE TECHNICAL REGULATION**
- ✓ **FEDERAL LAW ON THE INDUSTRIAL SAFETY OF HAZARDOUS PRODUCTION FACILITIES**
- ✓ **GAS MAINS TECHNICAL OPERATION REGULATIONS**

MAJOR OBJECTIVES OF THE DIAGNOSTICS SYSTEM:

- PREPARING INSPECTION SCHEDULES BASED ON THE TECHNICAL CONDITION ANALYSIS OF GAS MAINS;**
- COORDINATION OF DIAGNOSTIC ACTIVITIES AND DIAGNOSTICS TOOLS DEVELOPMENT;**
- COLLECTION AND COLLIGATION OF INFORMATION WITHIN A CENTRAL DATABASE;**
- COMPREHENSIVE ANALYSIS AND FORECAST OF THE GAS MAINS TECHNICAL CONDITION.**

THE PIPELINE DIAGNOSTICS ACTIVITY

- **IN-LINE INSPECTION;**
- **UNDERWATER CROSSING DIAGNOSTICS;**
- **ELECTROMETRIC EXAMINATION;**
- **HELICOPTER-BORNE AERIAL DIAGNOSTICS;**
- **GAS DISTRIBUTION STATION DIAGNOSTICS.**

ILI DIAGNOSTICS TOOLS

MAGNETIC PIG WITH A BY-PASS UNIT



ELECTRONIC MULTI-CHANNEL SECTION GAGE



**TWO SECTION MAGNETIC PIGS WITH BY-PASS UNITS
LONGITUDINAL MAGNETIZATION**

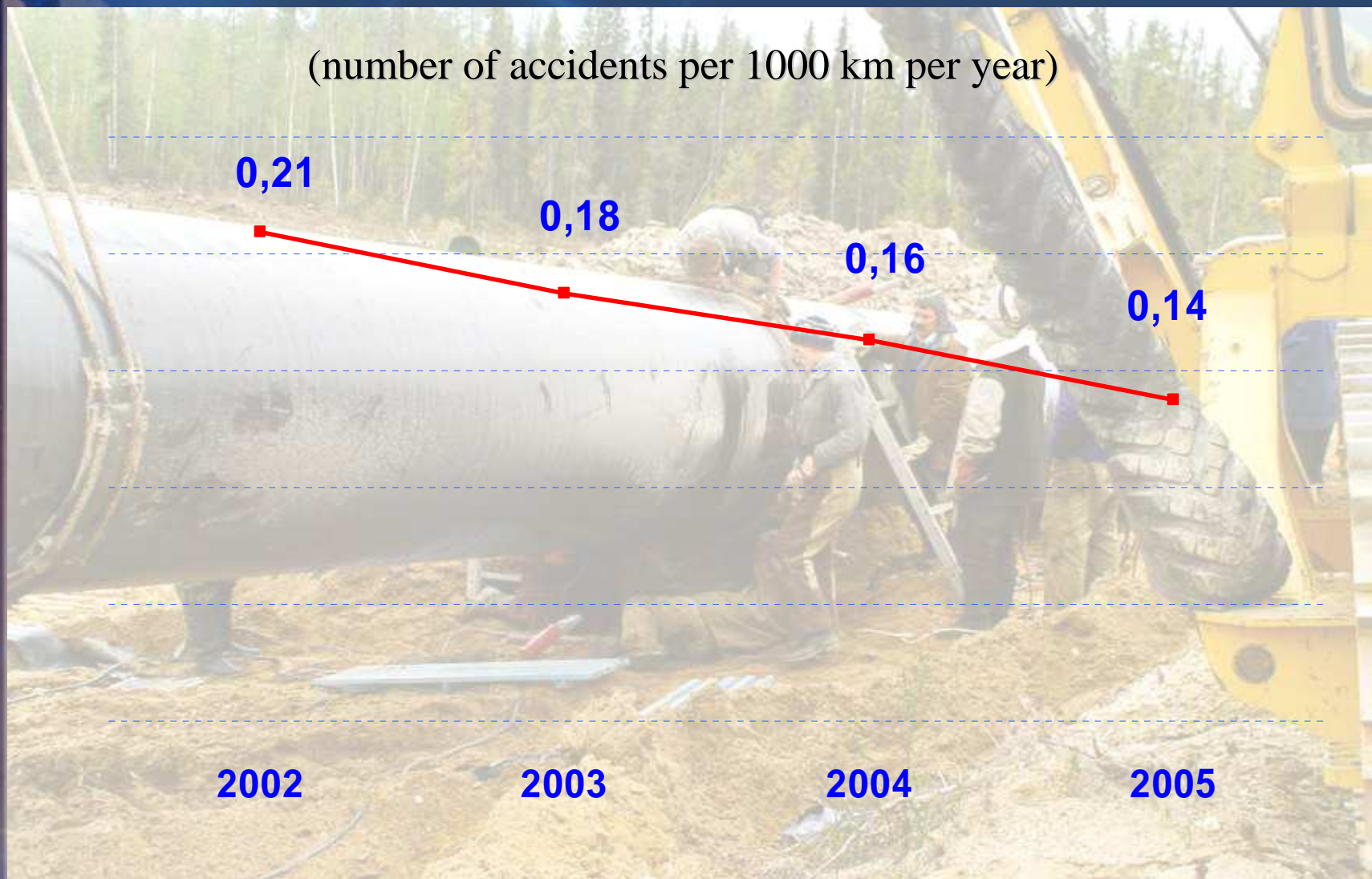


CROSS MAGNETIZATION



ACCIDENT RATE OF GAS MAINS

(number of accidents per 1000 km per year)



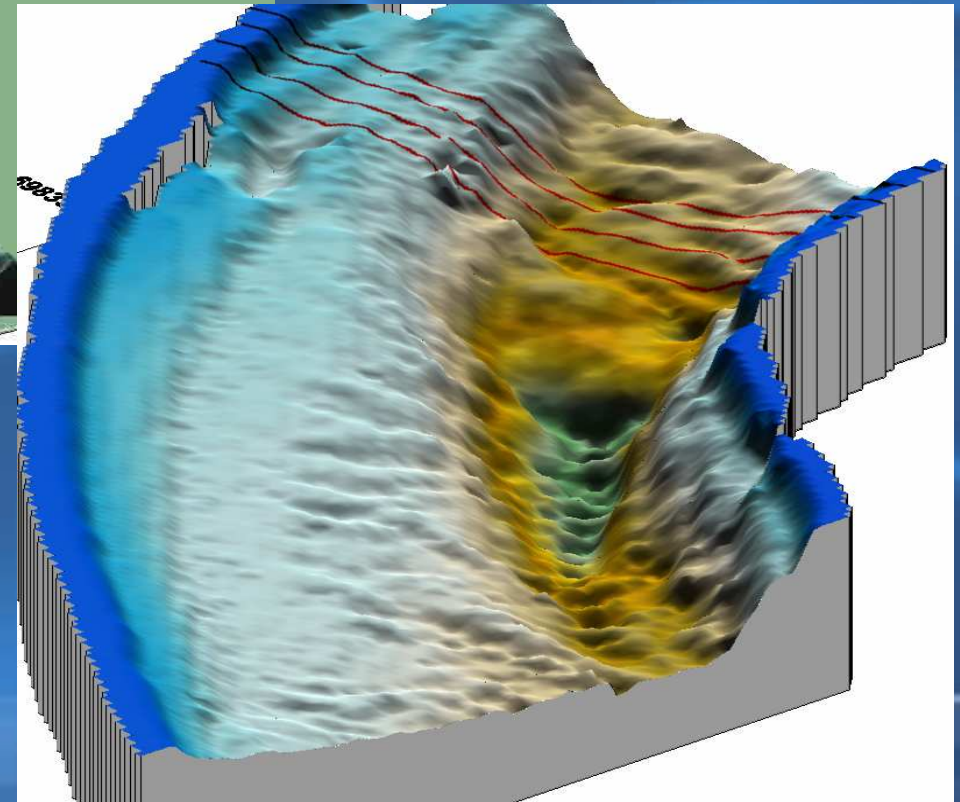
IN-TUBE DIAGNOSTICS STREAMLINING

- **DETECTING ALL TYPES OF DEFECTS WITHIN A SINGLE PIG RUN;**
- **IMPROVING THE PIG SPEED REGULATION SYSTEM TO ENSURING ITS OPERABILITY UNDER ANY GAS TRANSMISSION MODE;**
- **INCREASING DIAGNOSTICS EFFICIENCY BY INTEGRATED ANALYSIS OF ILI, ELECTROMETRIC AND OTHER DATA;**
- **OPTIMIZING ILI CYCLES BASED ON OPERATION RISK FORECASTS.**

TECHNICAL STATE ASSESSMENT OF UNDERWATER CROSSING BASED ON SURVEY RESULTS



General view of Ob River channel (underwater crossing 15 km long near Peregrebnoye settlement)



IN-TUBE DIAGNOSTICS USING TEMPORARY LAUNCHER-RECEIVER CAMERAS

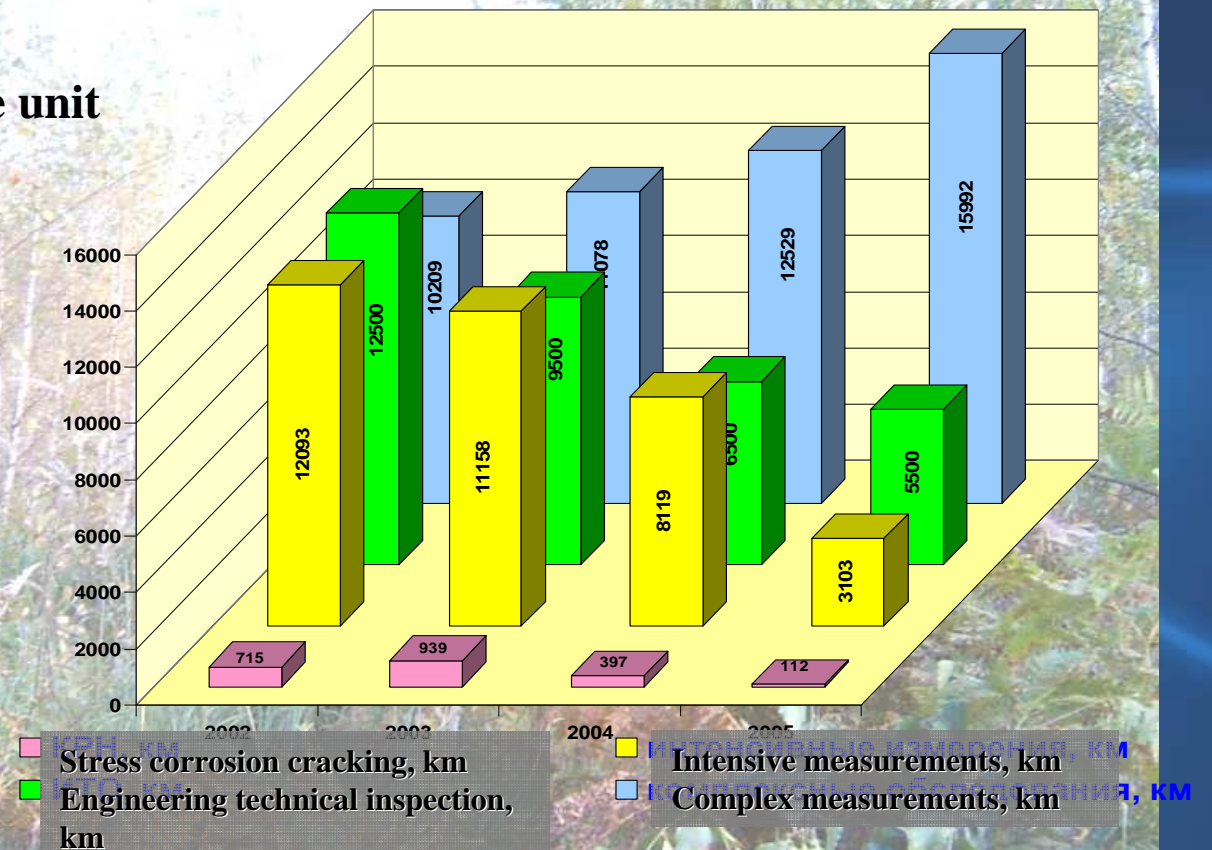


ELECTROMETRIC EXAMINATION

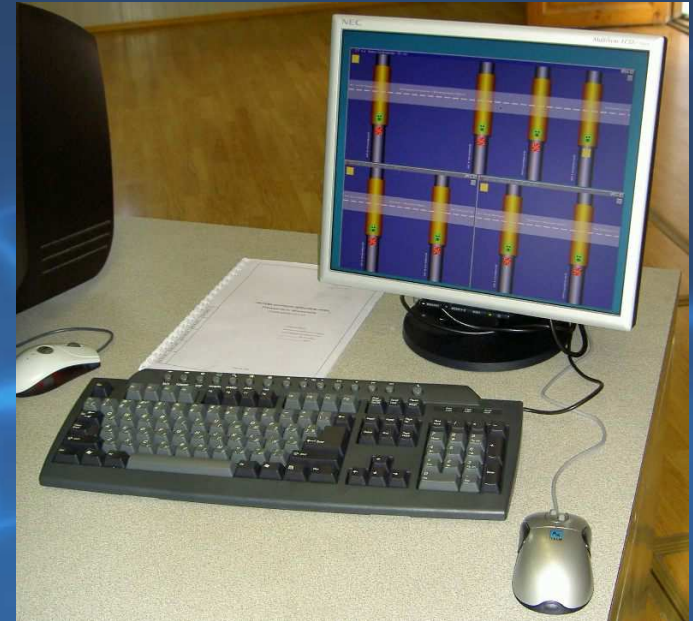
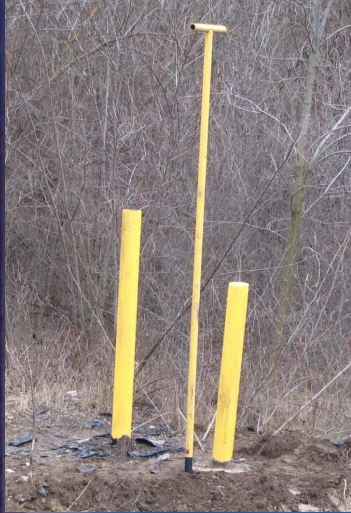
**Self-adjusting drainage unit
“UDAR”**



**Distribution according to the type of examination
(2002 – 2005 timeframe)**



AUTOMATED CROSSING MONITORING SYSTEM



Monitored parameters:

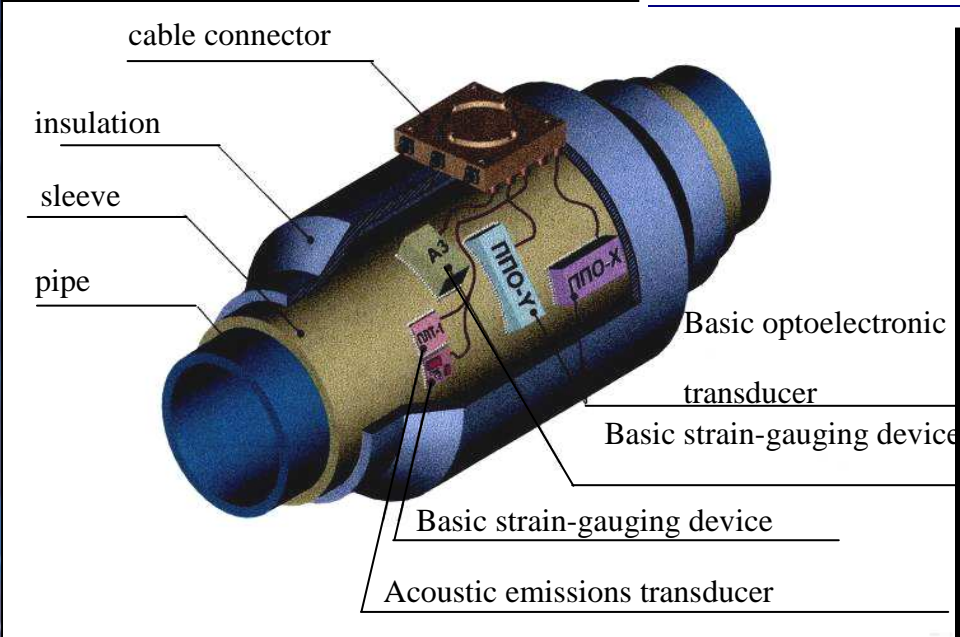
- Gas Pollution
- Cathodic Protection Potential
- Pipe - Safety Cover resistance
- Longitudinal Deformation in Designated Sections

HELICOPTER-BORNE DIAGNOSTICS OF GAS TRANSMISSION FACILITIES

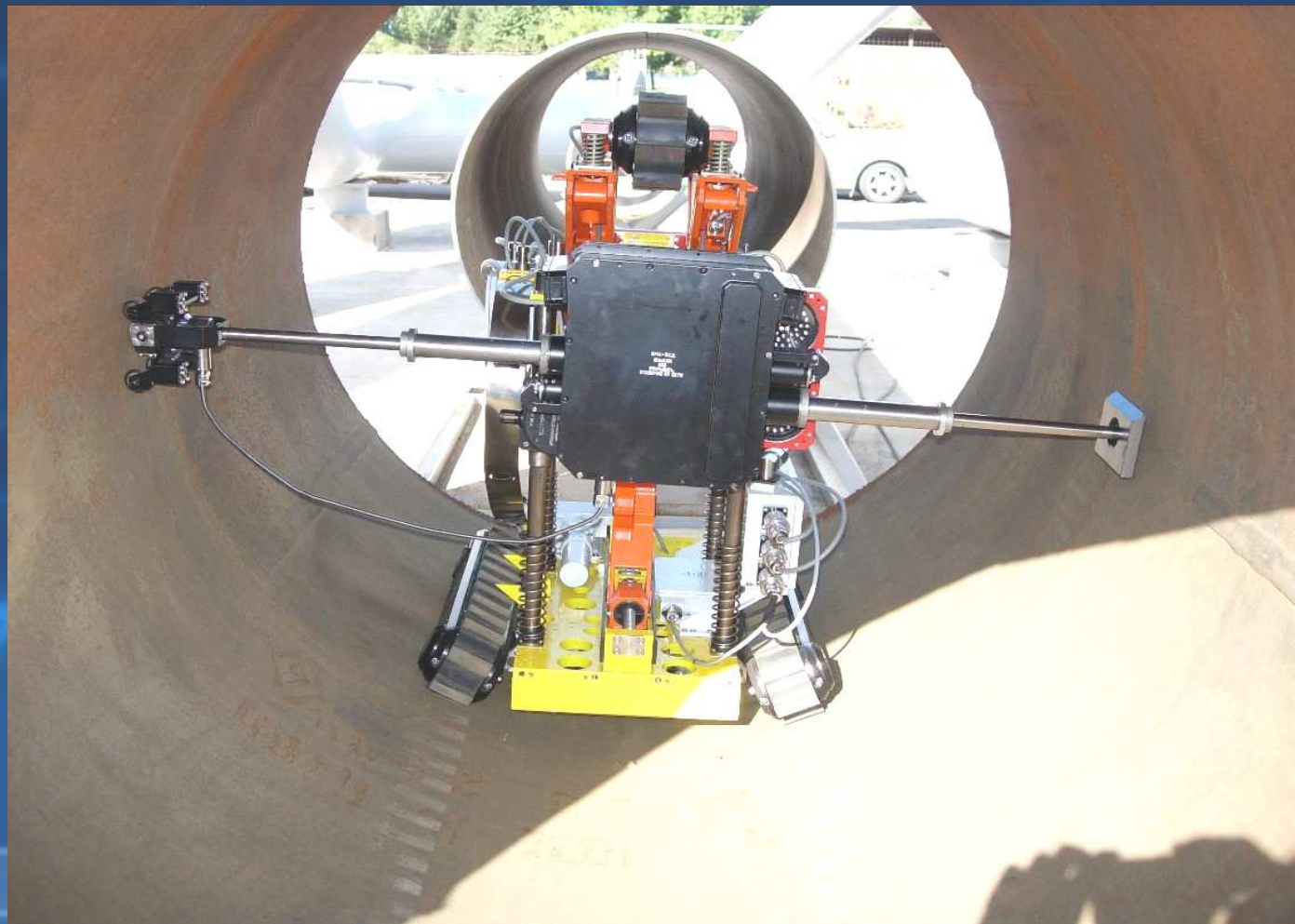


INTELLECTUAL INSERTIONS IN BLUE STREAM GAS PIPELINE (RUSSIA-TURKEY) AND IN KAMA RIVER CROSSING

Installed:
- 15 units in Blue Stream gas mains
- 4 units in Kama River crossing



IN-TUBE DIAGNOSTICS OF CS TECHNOLOGICAL PIPELINES USING REMOTELY OPERATED DIAGNOSTICS COMPLEX



Департамент по транспортировке, подземному хранению и использованию газа



THANK YOU FOR YOUR ATTENTION!