



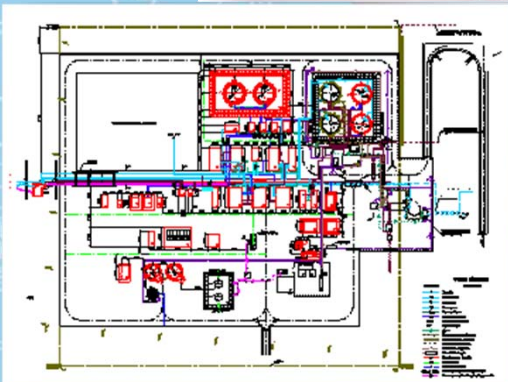
CASPIAN ENGINEERING & RESEARCH

Limited Liability Partnership



Activities performed by CE&R LLP:

- ✓ All design stages of Oil & Gas Field Facilities development – FS (TEO), Project (TPD) and Detail Design;
- ✓ Design of utility facilities, direct and associated infrastructure (power and water supply, landfills, support bases, HVAC, instrumentation, roads and camps);
- ✓ Project Environmental Support;
- ✓ Project Permitting / Approvals with Authorities;
- ✓ Author's Supervision of Facilities Construction;
- ✓ Consulting Services



Office Premises



CE&R Head Office is located in Aktau.

Head Office is a well-equipped 4-floor building with total area of 5000 m².

There are approximately 250 equipped work places, modern communications



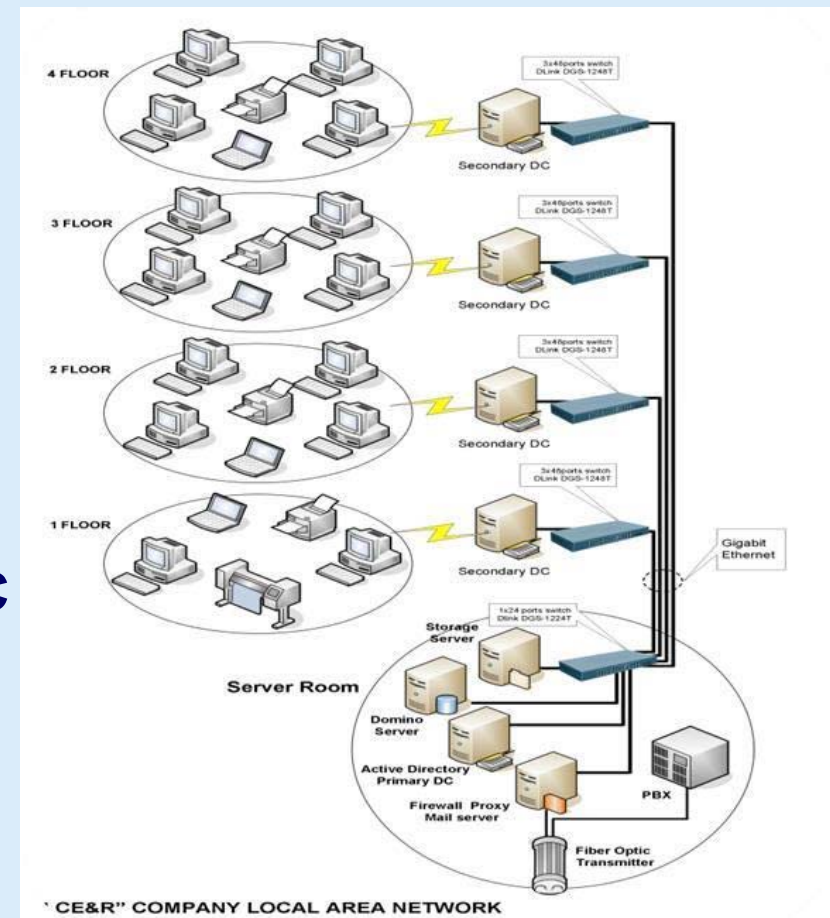
Hardware and Software

Software

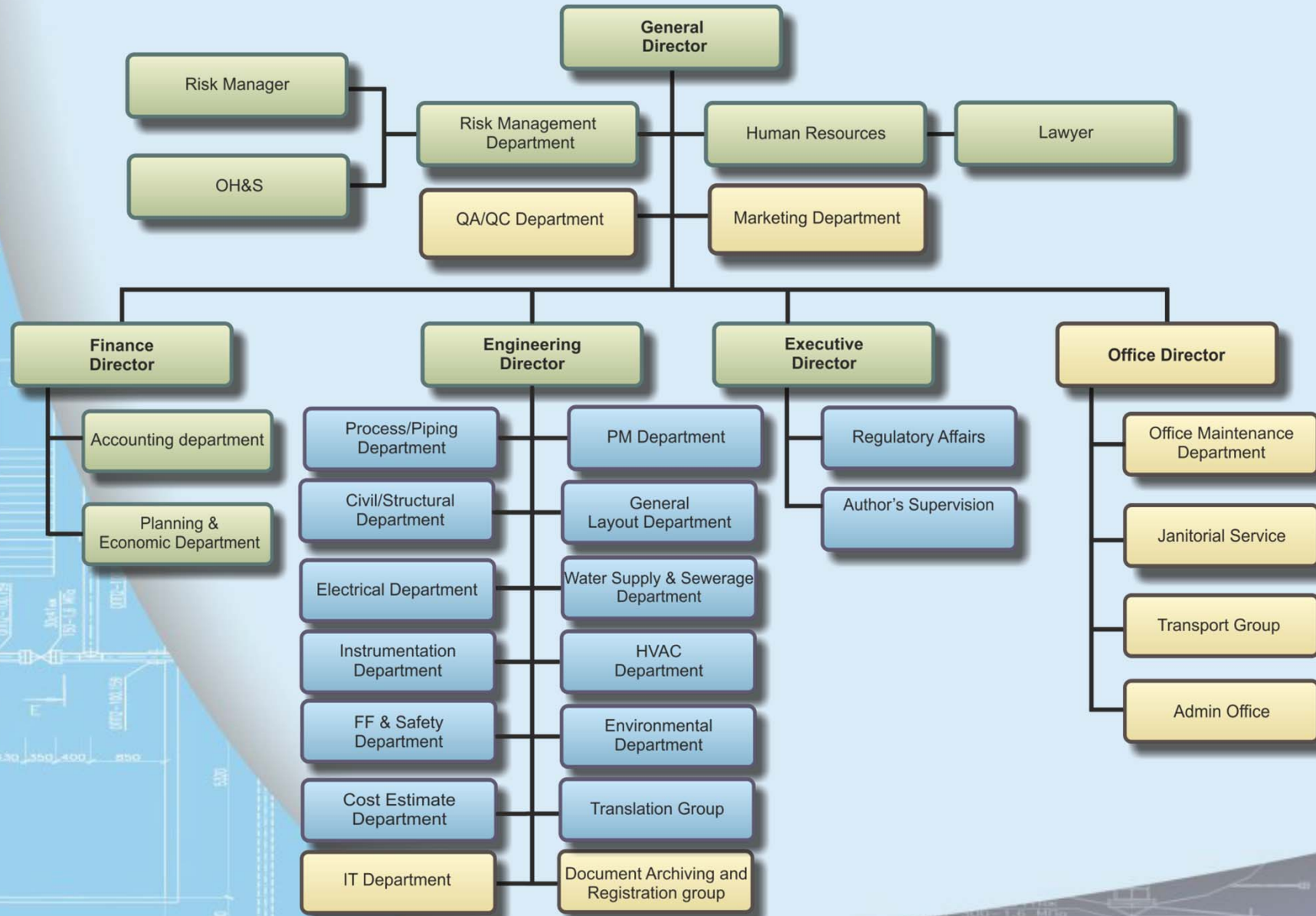
- AutoCAD, AutoCAD MEP, AutoCAD Civil 3D, AutoCAD Revit Structure Suite, Autodesk Plant Design Suite Premium, Vitro-CAD
- HYSYS 11.0
- Others including SCAD office, Start, Hydrosystem, Safety Valve, Foundation, ABC KZ 2023, ERA software system, TOXI + Risk, EnergyCS, ElectriCS ESP, GidRaVPT etc.

Hardware:

- Hardware is upgraded annually



Organisation Chart



Our Major Clients and Partners

Major Kazakhstan Companies:

NCOC N.V., TENGIZCHEVROIL (TCO), PSN Kazstroy (Wood Group), KPO B.V., KazMunayGas, Buzachi Operating, KCOI, Nostrum Oil & Gas PLC, ALMEX Petrochemical, Embamunaigas, MEMR/MOG, Atyrau Refinery, KazakhOilAktobe, KazMunayTeniz, TOTAL E&P DUNGA, KarakudukMunay, KazGerMunai

International Companies :

BHGE (Nuovo Pignone), ALSTOM, Saipem, Wood Group (AFW), Petrofac, McDermott (CB&I), RWE-DEA, Honeywell, TechnipFMC (Technip)





CE&R LLP is prequalified by Companies:



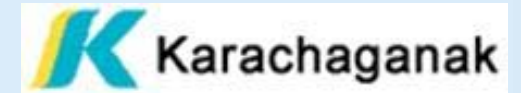
NATIONAL WELFARE FUND SAMRUK-KAZYNA JSC

NCOC NV – North Caspian Operating Company N.V.



TCO – TENGIZCHEVROIL LLP

KPO b.v. – Karachaganak Petroleum Operating B.V.



TOTAL E&P DUNGA

Total E&P Dunga GmbH

Nostrum Oil & Gas PLC (ZHAIKMUNAI LLP)



KCOI – KAZAKHSTAN CASPIAN OFFSHORE INDUSTRIES LLP



Major Projects



NCOC, NCPOC, Agip KCO (Kashagan, Kalamkas Sea)



- ✓ Our company has been accompanying the Kashagan project since 2004 to the present and at the moment, in accordance with the legislation of the Republic of Kazakhstan, is the General Designer of the Kashagan Field Development at the Experimental Program Phase;
- ✓ For almost 20 years of joint work, a lot of FEED, TPD and detailed design documentation has been completed both for the main oil and gas treatment facilities, and for infrastructure facilities and utilities;
- ✓ Regulatory and legal support of projects, provision of Author's supervision services for construction and joint participation with the Client in the commissioning of Kashagan Field facilities;
- ✓ Project updating with the allocation of Start-up Complexes and Author's Supervision:
 - “Kashagan Field Development Project Experimental Program. Offshore Complex. Process Facilities”;
 - “Kashagan Field Development Project Experimental Program. Onshore Complex. OPF”;
- ✓ Author's Supervision over facilities construction:
 - EP. Onshore and Offshore Complexes;
 - Gas Turbine Generator;
 - Sulphur Storage, Export oil and gas pipelines

TCO – TENGIZCHEVROIL LLP (Tengiz Field)

- ✓ Our Company has been accompanying the Tengiz Project since 2008 to the present;
- ✓ Development and approval of Declaration of Intent for Construction Investment, Feasibility Study and General Technical Project Documentation for Tengiz Future Growth Project (FGP);
- ✓ Development and approval of Organization Standard “Requirements for Development and Operation of Multi-Well Pads at Fields Operated by Tengizchevroil LLP”;
- ✓ RA consulting services for Tengiz Field Future Growth Project;
- ✓ Development of Basis of Design, TPD, EIA and Detail Design for “Rotational Village Upgrade Project” and Author’s Supervision of construction;



TCO – TENGIZCHEVROIL LLP (Tengiz Field)

- ✓ Consulting Services for preparing the Register of Regulatory Documents and for FGP Modules Construction (Third Generation Plant);
- ✓ RoK Endorsement of GE Grid-Alstom Substation Area 51/ Core Substation 59 / Main Substation 52 design documentation;
- ✓ Author's Supervision of GE Grid-Alstom Substations construction;
- ✓ RoK Endorsement of BHGE Frame 9 Gas Turbine Generator Modules design documentation;
- ✓ Author's supervision of ongoing infrastructure projects to support FGP;

BHGE (NUOVO PIGNONE S.p.A.)

- ✓ Author's Supervision of modules construction, five modular GTGs (manufactured by Baker Hughes, a GE Company for Tengiz). Italy (2016-2019)





KPO b.v., Petrofac, AMEC (Karachaganak Field)

- ✓ Our company has been accompanying the Karachaganak Project since 2006 to the present;
- ✓ During this time, FEED, Design, Detailed Design, Author's Supervision of construction was carried out for facilities as follows:
 - ✓ Satellite Station, CPF-2, CPC, and CPC Utilities and Production Areas;
 - ✓ Karachaganak-Uralsk Treated Gas Pipeline;
 - ✓ KPC 4th Train of Crude Hydrocarbons Stabilization and Sweetening;
 - ✓ Field Development Phase III Project;
 - ✓ Condensate/LPG Loading Racks construction;
 - ✓ The 4th Train 10" and 14" pipelines;
 - ✓ Security Management Systems at KPO b.v. Bolshoi Chagan OPS;



Other Projects



Kazakhoil Aktobe (Alibekmola)

- ✓ Development and approval of Detail Designs “Alibekmola Field Integrated Development Project during Commercial Operation”, Author’s Supervision:
 - (increasing capacity up to 3 MMTA of commercial oil)
- ✓ Facilities Construction Management, engineering consulting of the Client and EPC contracting organizations;
- ✓ Alibekmola and Kozhasai Fields Integrated Development Project – Feasibility Study preparation and approval;
- ✓ Alibekmola and Kozhasai Fields Associated Gas Utilization Program development and approval;
- ✓ Development and approval of “Gas Pipeline for Transportation of Stock Gas from Alibekmola GPF-50 to Trunk Pipeline”, Author’s Supervision;

Zhaikmunai (Chinarev Field)

- ✓ Development and approval of FS of LPG transportation and processing;
- ✓ Development and approval of OPU Project, Author’s Supervision;
- ✓ Development and approval of Chinarev OGCF - Rostoshi Oil Pipeline Project, Author’s Supervision;
- ✓ Development and approval of Export Pumping Station Detail Design;
- ✓ Development and approval of Detail Design on upgrade and addition of oil and gas gathering and treatment facilities;





Buzachi Operating (North Buzachi Field)

- ✓ North Buzachi Field Surface Facilities Construction during Trial Operation. Upgrade Project development and approval;
- ✓ Conceptual Design “Construction of North Buzachi Field Facilities at the Commercial Development Stage up to 2021”;
- ✓ “North Buzachi Field Construction of GPF, Compressor Station, Auxiliary Equipment and Utilities and North Buzachi – Karazhanbas Pipeline Construction” design and survey work, approval and Author’s Supervision;
- ✓ “North Buzachi Field PWRU-1 (Preliminary Water Removal Unit) Expansion” and “North Buzachi Field PWRU-2 Construction” Detail Designs preparation, approval and EIA. Author’s Supervision;

MangistauMunaiGaz

- ✓ PWRU TPD and Detail Design development and approval;
- ✓ Kalamkas Field Gas Treatment Unit TPD and Detail Design development and approval;
- ✓ Author’s Supervision of PWRU, GTU construction;
- ✓ Zhetybai Field Gas Utilization Program development and approval;

Ken-Sary LLP

- ✓ “Arystan Field Gas Treatment Facility and Gas Pipeline“ TPD, EIA and Detail Design development and approval;



Jupiter Energy Pte. Ltd

- ✓ North-East Akkar Movable Process Scheme for Pressure Transient Analysis, Development and Testing; Typical Technological Scheme for Oil Fields in the Jupiter Energy Pte. Ltd. License Area for the Trial Operation Period;
- ✓ “Integrated Development of Jupiter Energy Pte. Ltd License Area”

Kom-Munai LLP

- ✓ Komsomolskoye Field Development Projects, Reconstruction of Well Injection Line, Construction of G8 and G9 Flowlines, Reconstruction of Drill Cuttings and Solid Wastes, New Pipeline Section from CPF of KOMMUNAI Junction 6 to Tank 4 of KARAKUDUKMUNAI LLP TOS, Modernization of Storage and Utility Rooms, Landfill Reconstruction, Arrangement of Areas for Temporary Waste Storage

Tasbulat Oil Corporation LLP

- ✓ Tasbulat, Turkmenoi and Aktas Fields Development Projects, Construction of New Associated Gas Pipeline from Tasbulat CPF to KazGasRefinery, Tasbulat Oil Corporation LLP Activities Response Project, Replacement of LP Pumps at Tasbulat CPF, Oil Sludge and Oil-contaminated Soils Landfill Reconstruction, Expansion of Fire Fighting System at Oil Gathering Facility (OGF) of Turkmenoi Field;
- ✓ Associated Gas Utilization Program.

Kazpolmunai LLP

- ✓ Development of Technical Regulations for the Compressor Unit of 300 kcmpd in Borankol field





KarazhanbasMunai (Karazhanbas Field)

- ✓ Karazhanbas field facilities construction design and estimate documentation development and approval

KarakudukMunai (Karakuduk)

- ✓ Oil and Gas Treatment Gathering Facilities Detail Design development and approval
- ✓ Gas Utilization Program development and approval
- ✓ Oil Treatment Gathering Facilities TPD and Detail Design development and approval
- ✓ “Associated Gas Utilization. Reconstruction of Karakuduk Field Oil Gathering and Processing System ”Author’s supervision of construction



KazGerMunay (Akshabulak Field)

- ✓ LPG Transportation FS development and approval
- ✓ CPF Expansion Project development and approval
- ✓ “CPF Gas Dehydration and Condensate Gathering” Detail Design development and approval, Author’s Supervision



KazMunayGas

- ✓ “Caspian Sea Kazakh Sector Onshore Infrastructure Development Project” preparing and approval;

KazMunayTeniz

- ✓ “Kashagan Field EP Offshore Facilities Risk Analysis” concept design development;
- ✓ Kalamkas - Sea Field Development Concept

CPC Pipeline

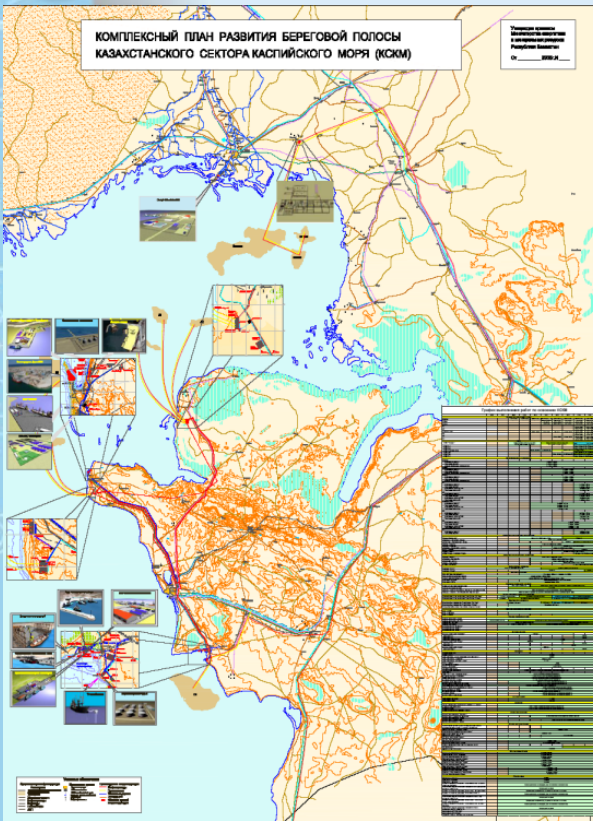
- ✓ CPC Expansion in RoK. Atyrau Pumping Station, 116-204 km Pipeline Detail Design;
- ✓ CPC Expansion in RoK. 0-116 km Pipeline Construction Detail Design development, approval and Author’s Supervision

Saipem (Kashagan)

- ✓ Review and Development of Pre-FEED, Detail Design and Onshore Survey;
- ✓ Kashagan-Eskene Offshore Trunklines (100 km of crude oil, gas and fuel gas pipelines)

Consafe McNulty JV Limited (Kashagan Field)

- ✓ Project “Accommodation Barges # 11, 12”





Maersk, TOTAL E&P DUNGA (Dunga Field)

- ✓ “Associated Gas Treatment at Dunga Field” - development and approval of TPD, Detail Design and EIA;
- ✓ “Wellhead Installation and Oil Gathering & Transport System Upgrade at the Dunga Central Gathering Facility. RPMS Pipelines” - development and approval of Detail Design and Author’s supervision;
- ✓ P&IDs for the existing and process equipment and pipelines;
- ✓ Dunga Full Field Development - development and approval of design and estimate documentation, Author’s supervision:
 - TPD and Detail Design of facilities: Fire Station, Car Workshop, Electrical Workshop, Welding and Mechanical Workshop, Accommodation and Office Buildings, Waste Water Treatment Facility;
 - Detail Design of facilities: Loading and Fuel Station, Water Loading Station, New Storage Area, Chemicals storage, Wellheads, PST-01

KCOI (Support Base)

- ✓ Development and approval of TPD, Detail Design and Author’s Supervision of Steel Structures Plant and Quay in Tupkaragan District, Mangistau Region;
- ✓ Approval of the Detail Design for the Project of Conversion of Production Wells to Injection Wells



TenizService

- ✓ Bautino Marine Petroleum Operations Support Base – Detail Design;
- ✓ Toxic Industrial Wastes Landfill including Oil Wastes Treatment Unit – TPD and Detail Design



NefteStroyServis LTD LLP

- ✓ “Production Base for 250 Units of Vehicles and Special Equipment in Karazhanbas Field“, “Production Base for 100 Units of Vehicles and Special Equipment in Kalamkas Field” Detail Designs development and approval
- ✓ “Auto Service Center for 1000 Units of Vehicles in Uzen Field” TPD and Detail Design development and approval



Oil Transport Corporation LLP

- ✓ “Construction of Production and Technical Base for 600 Units of Vehicles in Kalamkas Field” Detail Design development and approval



Petrochemical Projects





Almex Petrochemical LLP

- ✓ Feasibility Study for production of Purified Terephthalic Acid and Polyethylene Terephthalate (PET)

PKOP, Honeywell-ACS (ShNOS)

- ✓ Feasibility Study and Pre-EIA for PKOP LLP Shymkent Refinery Modernization and Reconstruction Project

RoK Ministry of Energy and Mineral Resources

- ✓ State Expertise (the RoK Government Decree No.1280 dated 24.12.07 on the appointment of the CE&R LLP as a State Expert) of the Bids for “Infrastructure Facilities of the Integrated Petrochemical Complex in Atyrau Region” Concession Project ;

Foster Wheeler Energy Ltd

- ✓ “Integrated Petrochemical Complex”. Feasibility Study

“Atyrau Refinery” LLP , JGC Corp. Atyrau Branch (ANPZ)

- ✓ Development of design and estimate documentation for ANPZ Modernization Project, Atyrau Refinery infrastructure facilities





RA Activity

Development of Company standards

- ✓ ST LLP "Requirements for Development and Operation of Multi-Well Pads at fields of TENGIZCHEVROIL LLP"
- ✓ ST LLP "Separation of Start-up complexes (SC) of FGP/WPMP facilities"

Registration of international standards

- ✓ NFPA 750 «Standard on Water Mist Fire Protection Systems»

Special technical conditions STC

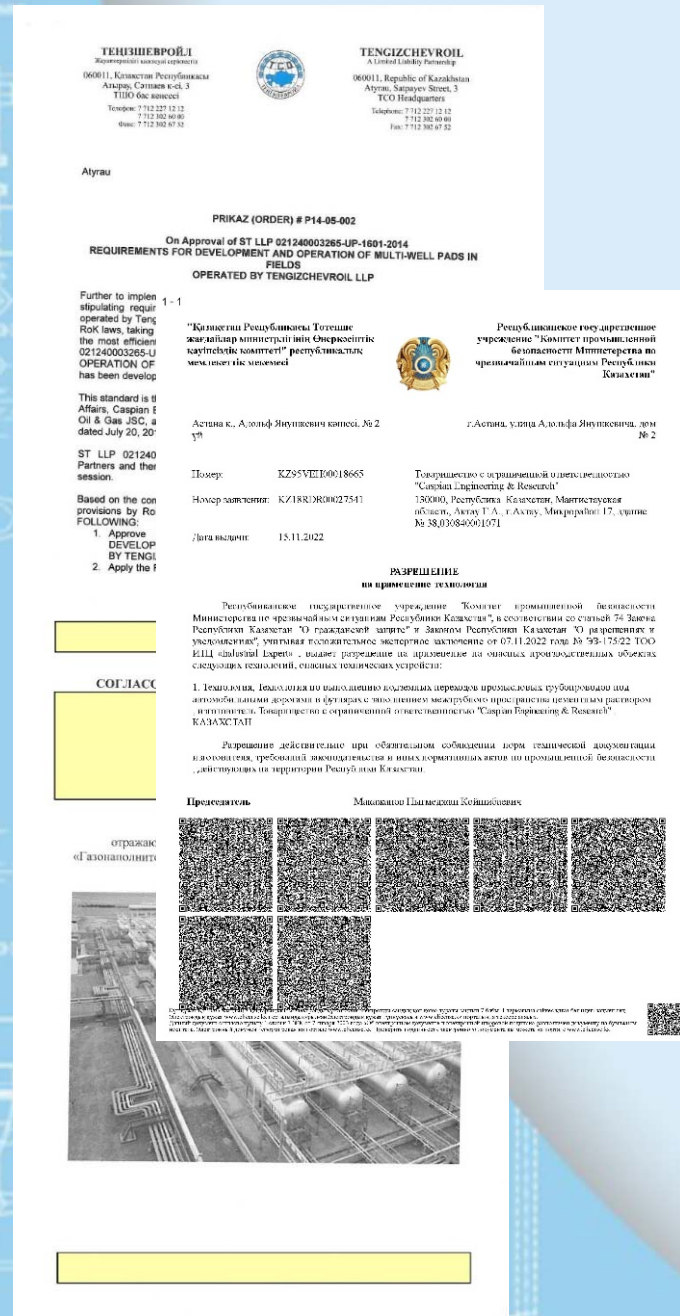
- ✓ Joint participation with Tengizchevroil LLP under STC for the design and construction of FGP/WPMP facilities
- ✓ Joint participation with KITNG under STC for Druzhba gas filling station with LPG storage farm over 8,000 m³ up to 15,000 m³ inclusive

Permission to use technologies

- ✓ Technology for making Non-Pressure Tested Closure Welds (Golden Weld Golden joint)
- ✓ Technology for the implementation of underground crossings of field pipelines under roads

Miscellaneous RA issues

- ✓ Development of methodological recommendations on the procedure to perform individual and control tests of FGP/WPMP hazardous production facilities
- ✓ Support of design and estimate documentation at coordination stage with the regulatory authorities of the Republic of Kazakhstan





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