

COMPANY PROFILE

NUCLEAR ENERGY SECTOR



www.alfattanenergy.ae



Manpower
Services



Engineering and
Maintenance



Design
Engineering



In Service
Inspection



Material and
Equipment



PRO, Logistic, & Warehouse
Trading & Maintenance Workshop

TABLE OF CONTENTS



- | Chairman /CEO Message
- | Company History
- | Al Fattan Energy Certificates List
- | Organization Chart
- | Affiliated Companies
- | Services of Al Fattan Energy
 - Manpower
 - Engineering and Maintenance
 - In Service Inspection (ISI)
 - Design Engineering
 - Material and Equipment
 - PRO, Logistics & Warehouse,
Trading & Maintenance Workshop

Our Vision:

No.1 Engineering and Maintenance company for Nuclear Energy Plants in the UAE and MENA regions

Our Mission:

Support a safe and sustainable peaceful nuclear energy program in UAE

Company Strategy



**Quality & Safety
First**



**Over fulfillment of
In Country Value**



**Customer
First**



CHAIRMAN MESSAGE

We are proud that we are playing a vital role in opening the doors of the future, for us and for the next generations. Our technology, knowledge, experience along with our passion will design the future that we are seeking in the field of the energy locally, regionally and internationally. Al Fattan Energy, as inspired by the government of UAE, is ambitious to be one of the most important companies in the energy sector all over the world.

CEO MESSAGE

Al Fattan Energy LLC is the company in cooperation with thirty (30) companies in Korea to provide the best maintenance and engineering services to Baraka Nuclear Energy Plants and the future nuclear energy plants in MENA regions.

Any company alone cannot achieve safe and reliable operation of nuclear energy plants. Therefore, Al Fattan Energy has been established in cooperation with companies which have strong and abundant experiences in Korea and the UAE.

Al Fattan Energy LLC top management has over 150+ experience of operation and maintenance for South Korean Nuclear and Power generation, and our partners have more than 2500 SMEs for Nuclear Industries. With this background, our Vision is to become Number One maintenance and engineering company in the UAE and MENA regions, which can support ENEC and Nawah Energy Company to achieve their Missions, "Ensure a safe, sustainable, and peaceful nuclear energy program"



COMPANY HISTORY

WHO WE ARE



Some people dream of success while other get up every morning and make it happen

May 2019 - Established Global Partners Facilities Equipments L.L.C (Abu Dhabi)

Oct 2020 - Changed the company name to Global Partners Cloud Facilities Equipments L.L.C

Nov 2020 - Participated in a bid for KEPCO KPS

Jan 2021 - Signed a MOU for mutual cooperation on BNPP maintenance service with Doosan Heavy Industries

May 2021 - Established Global Partners Cloud Engineering Consultancy L.L.C (Abu Dhabi)

Jun 2021 - Registration and promotion with UAE nuclear energy plants partners (ENEC, Nawah Energy, KPECO KPS, Doosan Heavy Industries & Construction)

Jun 2021 - Secure ISO 9001, 14001, 41001 and 45001

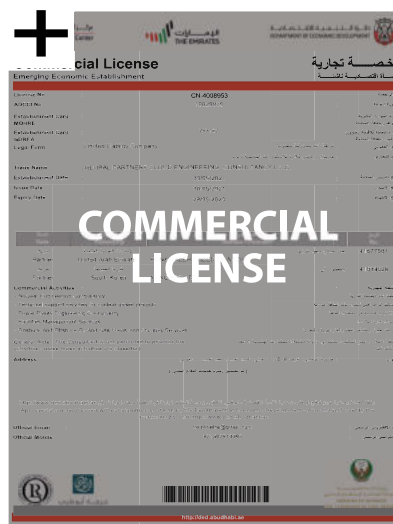
Jan 2022 - Company name change to ALFATTAN ENERGY LLC



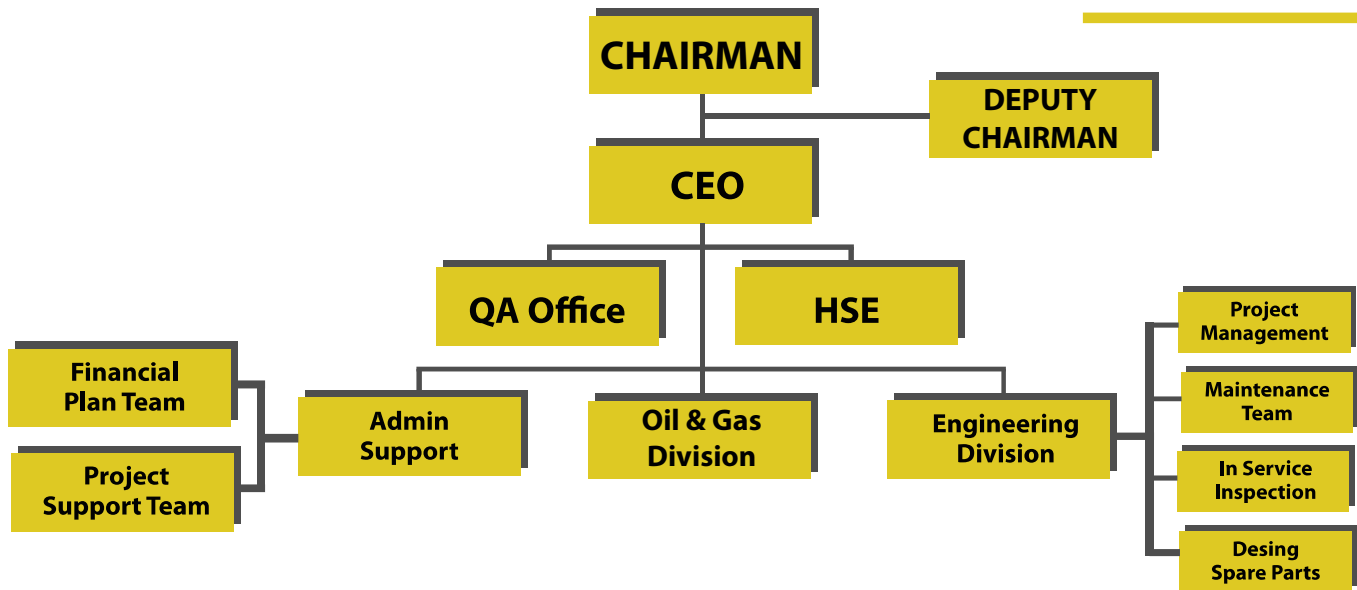
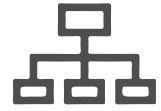


Certificate List

Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it."
- Sir Henry Royce



Organization Chart



Affiliated Companies

AFFILIATED COMPANIES





www.enesg.co.kr

- Plant(Nuclear, fossil) Performance Acceptance/ Diagnosis test
- Turbine Hydraulic Actuator Engineering, Manufacturing and performance test
- Equipment(TBN rotor etc.) non-destructive inspection and Integrity Evaluation
- Engineering & Field Service for NSSS of NPP



www.kndt.co.kr

- Radiation management for Nuclear power plants & facility
- Inservice Inspection(for Rx, SG, Class 1,2,3 equipment etc.)



www.kndt.co.kr

- MOV, AOV Diagnosis equipment development and Diagnosis service
- Development equipment(Diagnosis, performance evaluation, Energy management etc.)
- Risk information utilization



www.stdte.co.kr

- Performance/analysis (machine/piping/structure, etc. design, EQ, fluid machine performance verification, etc.)
- Fire protection system design and verification (fire protection plan preparation, fire-related performance tests, main control room fire-related tests, etc.)



www.stdte.co.kr

- MANPOWER SUPPLY FOR FOLLOWING AREAS:
- Offshore Structures, Onshore Plants
 - Container Design and Related Services
 - Shipbuilding & Offshore Plant & Aluminium Ship EPC

Affiliated Companies



www.ansco.kr

- Inservice Inspection(for Rx, SG, Class 1,2,3 equipment etc.)
- Steam generator secondary side cleaning and foreign matter inspection/removal



www.newmoojin.co.kr

- Development & Manufacturing (Rx Stud Tensioner, Refueling Machine, Radwaste Handling etc.)
- Mechanical Equipment maintenance(all Pump, Valve, Heat Exchanger, etc.)
- Spare Parts (Traveling Water Screen, Debris Filter, BDSM System, etc)



www.fnctech.com

- Nuclear Core and T-H Design Analyses
- Safety Analyses and Risk Assessment
- Engineering product & solution (Filtered Containment Venting System, Gas Void Monitoring System etc.)



www.kemx.co.kr

- Chemical cleaning service
- Development and sales of innovative products (scale removal device, 360 degree lighting device, cleaning detergent for maintenance, etc.)



www.kcotech.com

- Archicoating for Nuclear grade
- Rubber lining

Affiliated Companies



www.ableenc.co.kr

- Container design and related service industry
- Analyzer-related peripheral equipment
- Construction equipment and shipbuilding and offshore equipment



www.solux.co.kr

- Manufacturing and sales of indoor and outdoor, special lighting (LED)
- Lighting design and simulation



www.jepae.co.kr

- Industrial treatment process
- Control equipment manufacturing industry
- Steel pipe sales(General structural steel pipe, H section steel)
- Scaffolding pipe



www.kst.co.kr

- Mechanical parts manufacturing
- Valve and similar device manufacturing



www.jangminenc.com

- Structure safety check and precise safety diagnosis
- Performance evaluation
(Plant, Bridge, Load et. Of structure)

Affiliated Companies



www.itorsam.com

- Civil engineering



www.kocen.com

- Quality inspection for equipment manufacturing of NPP

- Concrete test

- Design engineering (Mech. Elec. I&C)



www.powertos.com

- Protection system testing for electric facility

- Power system analysis and design

- Power plant electrical equipment and substation design engineering and supervision



www.realgain.co.kr

- Windows application software

- Core parts of nuclear power plants



www.gmdu.net

- Special purpose machine manufacturing

- Special Mechanical work for NSSS of NPP

Affiliated Companies



www.yesyoungin.com

- Electric protection and connection device manufacturing industry
- Switchgear and electric automatic control panel manufacturing business
- Electric construction business



www.samshinvalve.co.kr

- Valve (forging, cast steel, casting) manufacturing
- Repair/mechanical installation work
- MOV, AOV Diagnosis service



www.daumeng.com

- Safety inspection & Accessment for industry structure(include NPP)
- Bridge Construction



www.soosanind.co.kr

- Mechanical and electrical maintenance service for NPP & fossile plant
- MOV, AOV Diagnosis service
- Steam generator secondary side cleaning and foreign matter inspection/removal



www.iscni.co.kr

- I&C maintenance service for NPP & fossile plant
- Electric/I&C facility project work

Affiliated Companies



SOOSANENS

www.soosanens.co.kr

- I&C maintenance service for NPP & fossil plant
- Automatic control panel manufacturing and Installation
- Information and communication
- Nuclear power plant construction and repairing



PRIME
CORPORATION

www.primecorp.co.kr

- Electric corrosion Protection construction and management service for NPP



Research-oriented company
CHOMDAN Mechanical Co., Ltd.

www.chomdankorea.com

- Mechanical Equipmment Repair and Maintenacne (Pump, Valve, Crane, Heat Exchanger)
- Development & Manufacturing (SG Nozzle Robot, crane, etc.)



ENVIONEER

www.soosanind.co.kr

- Filtration media development and production (Water/Oil purification, industrial filtration, etc.)
- Acoustic materials development and production (Sound absorption, Flame retardand)
- Nucleap power plant liquid filter production (CVCS, RCP, purification, filter, etc.)
- Filter production (Air, Liquid filter, etc.)

Affiliated Companies

SERVICES

WHAT WE DO!



"Customer service is the new marketing, it's what differentiates one business from another!"

MANPOWER



Secure and provide SQEP
(Suitably Qualified
Experienced Personnel)
Meeting International Codes
and Standards
(FANR, WANO, INFO etc.)

ENGINEERING & MAINTENANCE



Integration maintenance
Mechanical | Electrical
I&C | Structure
Assesment & Verification
Radiation Protection

IN SERVICE INSPECTION (ISI)



DESIGN ENGINEERING



MATERIAL EQUIPMENT



Equipment Repair
Auxiliary Equipment & Spare Parts

PRO, LOGISTIC & WAREHOUSE, Trading & Maintenance Workshop



SERVICES

WHAT WE DO!

MANPOWER



"Customer service is the new marketing, it's what differentiates one business from another!"

Applicable Regulations, Standards and Guidelines

1.1.1 FANR Regulation 16, Operational Safety including Commissioning including in particular but not limited to the following:

(a) Article 9, Qualification and Training of Personnel

1.1.2 WANO PO&C 2013-1, Performance Objectives and Criteria including in particular but not limited to the following

(a) Section 2 – Functional Areas, Maintenance

(b) Section 2 – Functional Areas, Training

1.1.3 WANO GL 2005-01, Guidelines for the Conduct of Training and Qualification Activities

1.1.4 WANO GL 2005-02, Guidelines for Training and Qualification of Maintenance Personnel

Definitions

1.2.1 Gap Training – This term is used to describe Training on the differences between the Contractor and the customer's procedures, work practices and standards. They are the responsibility of Contractor

1.2.2 Delta Training– This term is used to describe BNPP Specific trainings delivered by the Customer at BNPP. They are the responsibility of the Customer

1.2.3 JQC means Job Qualification Card

1.2.4 JTA means the Job and Task Analysis

1.2.5 OJT means On the Job Training – A training method that instructs trainees on key skills and knowledge required for job or task performance. This training is completed before trainee is evaluated and given independent work assignments. OJT provides hands-on experience for the student and is directly applicable to the job. OJT is distinct and separate from TPE.



SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Integration Maintenance



Division		Description	Company
Integration Maintenance	Jong-02	Mechanical/electrical maintenance work for the primary and secondary sides all facilities of Nuclear Power Plant (general maintenance)	Soosan Industry Co., Ltd.(Q)
	Jong-03	Mechanical/electrical maintenance work for the secondary sides all facilities of Nuclear Power Plant (secondary side independent maintenance)	Soosan Industry Co., Ltd(Q)
	Service no.36	I&C facility maintenance work for all nuclear power plant	Ihsung C&I Co., Ltd.(Q), Soosan ENS Co., Ltd.(Q)
	M-02	HVAC facilities maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	Jong-04	Intake facilities maintenance work for Nuclear power plant	Soosan Industry Co., Ltd.(Q)
	Jong-05	Water treatment facilities operation and regular maintenance work for Nuclear power plant	Soosan Industry Co., Ltd.(A)
	E-03	Electric anticorrosion system facilities maintenance work for Nuclear power plant	Prime Corporation(A)

Mechanical/electrical maintenance work for the primary and secondary sides all facilities of Nuclear Power Plant (general maintenance)

- > Mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the primary and secondary sides all facilities of Nuclear Power Plant.
- > Implementation of all related work accompanying the maintenance procedure.
- > Quality management related work according to quality assurance plan and quality control procedure.
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedure.
- > Testing and analyzing/resolving the problem after maintenance.

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. Jong-02



SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Integration Maintenance



Mechanical/electrical maintenance work for the secondary sides all facilities of Nuclear Power Plant (secondary side independent maintenance)

- > Mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the primary and secondary sides all facilities of Nuclear Power Plant
- > Implementation of all related work accompanying the maintenance procedure.
- > Quality management related work according to quality assurance plan and quality control procedure.
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedure.
- > Testing and analyzing/resolving the problem after maintenance.

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. Jong-03

I&C facility maintenance work for all nuclear power plant

- > I&C equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the primary and secondary sides all facilities of Nuclear Power Plant
- > Diagnosis and maintenance of electronic equipment
- > Periodic inspection of facilities
- > Preventive diagnosis work in case of ordinary and planned preventive maintenance
- > Conducting routine maintenance, preventive maintenance and regular inspections of mobile equipment in response to extreme disasters in the I&C portion
- > Inspection, calibration and maintenance of industrial safety facilities such as gas monitors

Company: Ihsung C&I Co., Ltd.(Q), Soosan ENS Co., Ltd.(Q)
KHNP Service no.36

HVAC facilities maintenance work for Nuclear Power Plant

- > Mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for HVAC system of Nuclear Power Plant
- > Implementation of all related work accompanying the maintenance procedure
- > Quality management related work according to quality assurance plan and quality control procedure
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedure
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no.M-02

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Integration Maintenance



Intake facilities maintenance work for nuclear power plant

- > Mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the intake facilities of Nuclear Power Plant
- > Implementation of all related work accompanying the maintenance procedure
- > Quality management related work according to quality assurance plan and quality control procedure
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedure
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q)

KHNP maintenance no. Jong-04

Water treatment facilities operation and regular maintenance work for nuclear power plant

- > Mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the Water treatment facilities of Nuclear Power Plant
- > Implementation of all related work accompanying the maintenance procedure
- > Quality management related work according to quality assurance plan and quality control procedure
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedure
- > Testing and analyzing/resolving the problem after maintenance
- > Operation of water treatment facilities

Company: Soosan Industry Co., Ltd.(A)

KHNP maintenance no. Jong-05

Electric anticorrosion system facilities maintenance work for nuclear power plant

- > Electric anticorrosion system facilities inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for Nuclear Power Plant
- > Electrical system facility control panel and rectifier, electrode check and replacement maintenance, cable check and replacement maintenance, other electrical system related facilities maintenance, voltage/current/potential status check
- > Testing and analyzing/resolving the problem after maintenance

Company: Prime Corporation (A)

KHNP maintenance no. E-03

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Division	Description	Company
Mechanical	M-12 Pump maintenance work for Nuclear Power Plant (all pump)	Moojin Engineering Co., Ltd.(A)
	M-11 Pump maintenance work for Nuclear Power Plant (less than 3,000 horsepower)	Soosan Industry Co., Ltd.(A)
	M-05 Primary side piping maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	M-06 Secondary side piping maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	M-07 Secondary side valve maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	M-09 Heat exchanger maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q), Samshin Co., Ltd.(Q)
	Service no.32 Reactor coolant pump (RCP) integral maintenance	Soosan Industries Co., Ltd.(Q)
	M-01 Air compressor maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	Service no.53 Turbine Governor Actuator/ETS system maintenance and reliability evaluation	AnSCO Co., Ltd.(Q), Orbitech(Q)
	Service no.65 Turbine rotor integrity evaluation for nuclear power plant	Enesg Co., Ltd(A)
	M-13 Foreign material filter and tube cleaning facility maintenance work for Seawater system of Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	M-14 Seawater piping and related equipment maintenance work for Nuclear Power Plant	Soosan Industry Co., Ltd.(Q)
	I-01 Condenser tube eddy current inspection (ECT) for Nuclear Power Plant	AnSCO Co., Ltd.(A), Orbitech Co., Ltd.(A)
	I-02 Low-pressure turbine rotor blade root part ultrasonic inspection (UT) for Nuclear Power Plant	Enesg Co., Ltd. (A)
	I-03 Turbine rotor non-destructive inspection for Nuclear Power Plant	Enesg Co., Ltd. (A)
	Service no.13 Transportation of spent fuel in light water Nuclear power plant	Soosan Industry Co., Ltd.(Q)
	Service no. 31 Condition evaluation for the protective coating of equipment inside reactor containment building	FNC Co., Ltd. (Q)

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Pump maintenance work for Nuclear Power Plant (all pump)

- > Performing Large-scale work such as replacement, design improvement, and maintenance for the primary and secondary pumps of nuclear power plants
 - > Pump disassemble, precision inspection, replacement parts inspection, balancing, assembling, and shaft alignment, etc.
 - > Preparation of related procedures and WPS/PQR development
 - > Testing and analyzing/resolving the problem after maintenance
- mechanical/electrical equipment inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for the primary and secondary sides all facilities of Nuclear Power Plant.
- > Implementation of all related work accompanying the maintenance procedure.
 - > Quality management related work according to quality assurance plan and quality control procedure.

Company: Moojin Engineering Co., Ltd(A)

KHNP maintenance no. M-12

Pump maintenance work for Nuclear Power Plant (less than 3,000 horsepower)

- > Performing Large-scale work such as replacement, design improvement, and maintenance of the primary and secondary pumps of nuclear power plants
- > Pump disassemble, precision inspection, replacement parts inspection, balancing, assembling, and shaft alignment, etc.
- > Preparation of related procedures and WPS/PQR development
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(A)

KHNP maintenance no. M-11

Primary side piping maintenance work for Nuclear Power Plant

- > Performing large-scale work such as replacement, design improvement and maintenance for primary side pipes of nuclear power plants,
- > Performing material management, decision of work method, inspection, test, quality control for pipe replacement work
- > erorning existing spool removal, counter bore work, spool manufacture and installation, piping internal overlay welding, etc.
- > Preparation of related procedures and WPS/PQR development
- > Removal and installation of pipe insulation

Company: Soosan Industry Co., Ltd.(Q)

KHNP maintenance no. M-05

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Secondary side piping maintenance work for Nuclear Power Plant

- > Performing large-scale work such as replacement, design improvement and maintenance for secondary side pipes of nuclear power plants,
- > Performing material management, decision of work method, inspection, test, quality control for pipe replacement work
- > Performing existing spool removal, spool manufacture, piping internal overlay welding, etc.
- > Preparation of related procedures and WPS/PQR development
- > Removal and installation of pipe insulation

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. M-06

Secondary side valve maintenance work for Nuclear Power Plant

- > Large-scale work such as replacement, design improvement, and maintenance of secondary side valves of nuclear power plants
- > Analysis of valve problems during operation
- > Performing Valve disassembling, precision inspection, replacement parts inspection, assembling, etc.
- > Preparation of construction related procedures and WPS/PQR development
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. M-07

Heat exchanger maintenance work for Nuclear Power Plant

- > Performing Large-scale work such as replacement, design improvement, and maintenance of heat exchanger of nuclear power plants
- > Heat exchanger disassembling, precision inspection, replacement parts inspection, assembly, etc.
- > Preparation of related procedures and WPS/PQR development
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q), Samshin Co., Ltd.(Q)
KHNP maintenance no. M-09

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Reactor coolant pump (RCP) integral maintenance

- > RCP internal/TBA lifting and installation
- > Chemical decontamination of RCP internal (including decontamination facility inspection, maintenance, and equipment purchase)
- > Complete disassemble and inspection of RCP internal
- > Complete disassemble and inspection of RCP TBA
- > RCP TBA upper seal improvement product installation
- > RCP shaft alignment
- > Final performance check after completion of RCP internal and TBA maintenance and inspection

Company: Soosan Industries Co., Ltd.(Q)

KHNP Service no.32

Air compressor maintenance work for Nuclear Power Plant

- > Perform large-scale work such as replacement, improvement and complete overhaul for air compressor of nuclear power plants
- > Analysis of problems while operating the air compressor
- > Air compressor disassembling, precision inspection, replacement parts inspection, assembling, and alignment, etc.
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q)

KHNP maintenance no. M-01

Turbine Governor Actuator/ETS system maintenance and reliability evaluation

- > Turbine valve actuator disassembly, maintenance and improvement
(High pressure turbine stop valve (MSV), high pressure turbine control valve (CV), low pressure turbine stop valve (ISV), low pressure turbine control valve (IV), valves attached to each actuator (Shut-Off V)) /V, Servo V/V, FASV, TSV) and LVDT)
- > Precision inspection of turbine emergency trip system (ETS) hydraulic valve and Overspeed Trip Ass'y
- > Control oil system inspection
- > HC Accumulator precision inspection

Company: AnSCO Co., Ltd.(Q), Orbitech(Q)

KHNP Service no.53

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Turbine rotor integrity evaluation for nuclear power plant

- > Material deterioration and integrity evaluation through metal structure inspection and hardness measurement
- > Evaluation of inspection results from the status of important parts of the turbine rotor (Bucket Vane, Cover, Tenon, Journal, Coupling, Center hole, etc.)
- > Detailed rotor stress analysis when starting/stopping turbines (heat for disc, wheel/bucket of 1~7 stages, centrifugal stress, etc.) and evaluation
- > Evaluation of possibility of crack formation
- > Analysis of crack propagation for cracks (when cracks are detected) and evaluation
- > Evaluation of remaining life based on turbine operation history and determination of re-inspection timing

Company: Enesg Co., Ltd(A)
KHNP Service no.65

Foreign material filter and tube cleaning facility maintenance work for Seawater system of Nuclear Power Plant

- > Performing Large-scale work such as replacement, design improvement, and maintenance for Foreign object filter and tube cleaning facility of nuclear power plants
- > Disassembling, precision inspection, replacement parts inspection, assembling and alignment of traveling screen, debris filter, etc.
- > Preparation of related procedures and WPS/PQR development
- > Testing and analyzing/resolving the problem after maintenance

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. M-13

Seawater piping and related equipment maintenance work for Nuclear Power Plant

- > Performing Large-scale work such as replacement, inspection of coating conditions, maintenance of damaged pipes for the Seawater piping and related equipment of nuclear power plants
- > Thickness measurement and pinhole inspection of target pipes, inspection and installation of replacement pipes, pretreatment, and coating work of worn pipes
- > Preparation of related procedures and WPS/PQR development

Company: Soosan Industry Co., Ltd.(Q)
KHNP maintenance no. M-14

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Condenser tube eddy current inspection (ECT) for Nuclear Power Plant

- > Establishment of inspection plan and preparation of procedures
- > Condenser cleaning and ECT
- > Evaluation of ECT test results and selection/implementation of plugging
- > Suggestion of countermeasures according to inspection results

Company: Ansco Co., Ltd.(A), Orbitech Co., Ltd.(A)
KHNP maintenance no. I-01

Low-pressure turbine rotor blade root part ultrasonic inspection (UT) for Nuclear Power Plant

- > Automatic ultrasonic inspection (UT) for the wheel dovetail
- > Automatic ultrasonic inspection (UT) for the bucket dovetail part
- > Automatic ultrasonic inspection on the inner surface of the rotor disc key and hub
- > Turbine root condition check
- > Material degradation inspection (metallographic examination and hardness measurement)

Company: Enesg Co., Ltd. (A)
KHNP maintenance no. I-02

Turbine rotor non-destructive inspection for Nuclear Power Plant

- > Non-destructive inspection of the entire outer surface of the rotor (VT, MT, ECT if necessary)
- > Automatic ultrasonic inspection (UT) for the finger pin part
- > Automatic ultrasonic inspection on the inner surface of the rotor disc
- > Check the condition of important parts of the turbine rotor (Vane, Tenon, Journal, Coupling, etc.)
- > Material degradation test (metallographic examination and hardness measurement)

Company: Enesg Co., Ltd. (A)
KHNP maintenance no. I-03

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Mechanical



Transportation of spent fuel in light water Nuclear power plant

- > Preparation for transportation and storage of spent nuclear fuel simulation of transportation
- > Transport and storage of spent nuclear fuel & empty transport container
- > Transport-related equipment movement, installation/demolition, decontamination, inspection, and operation
- > Spent fuel transport trailer maintenance
- > Transport container maintenance

Company: Soosan Industry Co., Ltd. (Q)
KHNP Service no.13

Condition evaluation for the protective coating of equipment inside reactor containment building

- > Investigation of related documents for inspection of coating history required by technical standards
- > Data collection and analysis on coating materials such as containment building interior drawings, painting design data, specifications, PSAR, FSAR and related regulations, etc.
- > investigation of painting construction and repair history such as Painting specification, manufacturer's supply data, etc.
- > Performance evaluation to prove the soundness of the concrete surface protective coating in the containment building
- > Test to select repair coating material
- > Radiation resistance test

Company: FNC Co., Ltd. (Q)
KHNP Service no.31



SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Electrical



Division	Description	Company
Electrical	Service no.25 Generator and main power electric facility protection relay test for nuclear power plant	Powertos Co., Ltd. (Q)
	Service no.26 Electric facility protection system test for nuclear power plant	Powertos Co., Ltd. (Q)
	E-04 Electric cable and electric panel maintenance for Nuclear power plant	Soosan Industry Co., Ltd.(Q) Daekyung Technology Co., Ltd.(Q), Daekyung Electric Power Co., Ltd.(A), Ihsung C&I Co., Ltd.(Q)
	E-08 Lighting equipment maintenance work for Nuclear power plant	Soosan Industry Co., Ltd.(A) Daekyung Technology Co., Ltd.(A), Ihsung C&I Co., Ltd.(A), Samshin Co., Ltd.(A)

Generator and main power electric facility protection relay test for nuclear power plant

- > Regular tests to check the normal operation of the protective relay: individual test, interlock test, logic test, alarm test, phase angle measurement, auxiliary relay related to protection relay test and inspection
- > In case of resetting of the protection relay, operation status analysis test to identify the cause of malfunction/failure, etc.
- > Inspection cleaning and terminal tightening of the back side of the protective relay cabinet
- > Protection relay failure repair and performance test
- > Performance test when newly purchased protective relay is received
- > Instrument transformer characteristic test: Cable polarity test, phase angle test, CT & PT ratio characteristic, error measurement, CT saturation characteristic test
- > Power conversion device calibration and output value check

Company: Powertos Co., Ltd. (A)

KHNP Service no.25

Electric facility protection system test for nuclear power plant

- > Regular tests to check the normal operation of the protective relay: individual test, interlock test, logic test, alarm test, etc., auxiliary relay related to protection relay test and inspection
- > In case of resetting of the protection relay, operation status analysis test to identify the cause of malfunction/failure, etc.
- > Inspection cleaning and terminal tightening of the back side of the protective relay cabinet
- > Protection relay failure repair and performance test
- > Performance test when newly purchased protective relay is received
- > Review and revision of the existing test procedure for the protective relay

Company: Powertos Co., Ltd. (Q)

KHNP Service no.26

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Electrical



Electric cable and electric panel maintenance for Nuclear power plant

- > Electrical panel relocation (cable terminal processing and wiring)
- > New Splicing Box installation
- > Cable Splice (straight line connection)
- > Installation of new conduit and cable (including control and ground cable)
- > Electrical panel and splicing box grounding

**Company: Soosan Industry Co., Ltd.(Q), Daekyung Technology Co., Ltd.(Q),
Daekyung Electric Power Co., Ltd.(A), Ihsung C&I Co., Ltd.(Q)
KHNP maintenance no. E-04**

Lighting equipment maintenance work for Nuclear power plant

- > All lighting facilities inspection and maintenance work during In-operation and O/H period (including emergency and intermediate maintenance period) for Nuclear Power Plant
- > Conduct periodic test and charge/discharge test of lighting equipment
- > Quality management related work according to quality assurance plan and quality control procedure
- > Preparation, revision, verification, and effectiveness evaluation of maintenance procedures, etc.
- > Lighting equipment maintenance, testing, problem analysis and resolution

**Company: Soosan Industry Co., Ltd.(A), Daekyung Technology Co., Ltd.(A),
Ihsung C&I Co., Ltd.(A), Samshin Co., Ltd.(A)
KHNP maintenance no.E-08**



SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE I&C



Division	Description	Company
I&C	Service no.17 Control and logic system maintenance for Nuclear power plant	Real Gain Co., Ltd. (Q), Soosan ENS Co., Ltd. (Q), Ihsung C&I Co., Ltd. (Q)
	Service no.27 Main computer maintenance for nuclear power plant	Soosan ENS Co., Ltd. (A)
	Service no.55 Rod control system facility maintenance for nuclear power plant	Realgain Co., Ltd.(Q)
	Service no.63 Electronic circuit board precision inspection (ICT) and maintenance for nuclear power plant	Soosan ENS Co., Ltd.(Q)
	Service no.21 Radiation monitoring facilities inspection and maintenance for nuclear power plant	Real Gain Co., Ltd.(Q)/ Soosan ENS Co., Ltd.(Q)

Control and logic system maintenance for Nuclear power plant

- > Control and linkage logic system status survey
- > Establishment of preventive maintenance plans and implementation for control and linkage logic systems
- > Diagnosis and maintenance for control and linkage logic system
- > Develop control and linkage logic system improvements and establish maintenance plans

**Company: Real Gain Co., Ltd. (Q), Soosan ENS Co., Ltd. (Q),
Ihsung C&I Co., Ltd. (Q)
KHNP Service no.17**

Main computer maintenance for nuclear power plant

- > Inspection and maintenance of on-site main computer system
- > Cyber security work
- > Diagnosis and repair of computer parts and terminals
- > Check and correct abnormal computer signals
- > Preventive maintenance such as analysis of the cause of defects during operation, maintenance and establishment of measures to prevent recurrence

**Company: Soosan ENS Co., Ltd. (A)
KHNP Service no.27**

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE I&C



Rod control system facility maintenance for nuclear power plant

- > Control rod driving coil integrity test and evaluation
- > Control rod position transmitter (RSPT) dynamic function test and equipment evaluation
- > Inspection and evaluation of each power control device (SCR, etc.) and monitoring sensor in the power cabinet
- > Electronic card circuit analysis, component integrity test, DB construction, visual inspection and function test
- > Check auxiliary equipment such as low voltage relay, optical cable, etc.
- > Support for facility restoration in case of emergency maintenance situation
- > Simulated driving test

Company: Realgain Co., Ltd.(Q)

KHNP Service no.55

Electronic circuit board precision inspection (ICT) and maintenance for nuclear power plant

- > Visual inspection of circuit board
- > Check circuit board contamination (dust, oil, etc.), pattern damage (heat discoloration, lift, hole damage), insulation deterioration (invasion, carbonization)
- > Circuit board cleaning
- > Insulation resistance (leakage voltage) check between circuit board contacts and coils, DC/DC converter integrity check, trip buffer input/output characteristics test, ref voltage check, trip delay time measurement

Company: Soosan ENS Co., Ltd.(Q)

KHNP Service no.63

Radiation monitoring facilities inspection and maintenance for nuclear power plant

- > Periodic test of radiation monitoring equipment
- > Radiation monitoring facility preventive inspection and troubleshooting
- > Radiation monitoring computer inspection and maintenance
- > Pre-check and calibrate the soundness of the measuring instrument before calibrating the radiation monitoring facility

Company: Real Gain Co., Ltd.(Q), Soosan ENS Co., Ltd.(Q)

KHNP Service no.21

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Structure



Division	Description	Company
Structure	Service no.20	Guju Technology Co., Ltd. (Q/A)/ Standard Testing & Engineering INC (Q/A)
	Service no.39	Inspection for safety Structure of nuclear power plant Group one Co., Ltd. (Q)
	S-01	Concrete structure maintenance work for Nuclear power plant Daum ENG Co., Ltd.(Q)
	S-02	Penetration sealing material maintenance work for Nuclear power plant Guju Technology Co., Ltd.(Q)

Penetration sealing material Investigation and inspection for nuclear power plant

- > Review design requirements and collect related data
- > Current status investigation and visual inspection of penetrations and openings
- > Assignment of identification number (ID) to the penetration part
- > Establishment of penetration part data base
- > New and changed penetration measures
- > Selection of sealing material evaluation target and analysis of deterioration degree
- > Physical state evaluation of the sealing material of the penetration
- > Identification of improvement items and establishment of aging management plan

**Company: Guju Technology Co., Ltd. (Q/A),
Standard Testing & Engineering INC (Q/A)
KHNP Service no.20**

Inspection for safety Structure of nuclear power plant

- > Structure data review and inspection plan establishment
- > On-site inspection
- > Analysis of inspection data and evaluation of soundness
- > Suggestion of repair and maintenance plan
- > D/B establishment by operation of life management system

**Company: Group one Co., Ltd. (Q)
KHNP Service no.39**

Concrete structure maintenance work for Nuclear power plant

- > Performing Large-scale work such as replacement, design improvement, and maintenance for the concrete structures of nuclear power plants
- > Concrete structure crack repair, surface treatment, section restoration, anchor hole backfills, anchor bolt removal, rust prevention, water-stopping agent injection, grating and steel cutting, Seismic Gap filling construction, CLP rear section restoration, non-shrink grout pouring, etc.
- > Quality management related work according to quality assurance plan and quality control procedure

**Company: Daum ENG Co., Ltd.(Q)
KHNP maintenance no. S-01**

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Structure



Penetration sealing material maintenance work for Nuclear power plant

- > Performing Large-scale work such as replacement, design improvement, and maintenance for the penetration sealing material of nuclear power plants
- > Removing the sealing material of the existing penetration part
- > Construction of sealing material (low/high density silicone, non-shrinkable grout, etc.)
- > Curing of the sealing material of the penetrating part
- > Inspection of the sealing material construction of the penetrating part

Company: Guju Technology Co., Ltd.(Q)
KHNP maintenance no.S-02



SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Assessment & Verification



Division	Description	Company
Assessment & Verification	Service no.05 EQ service for nuclear power plants (M&E: Assessment & Verification)	FNC Co., Ltd. (Q)
	Service no.06 EQ service for operating nuclear power plants (excluding accident analysis)	Soosan ENS Co., Ltd.(Q)
	Service no.38 Piping RI-ISI application for nuclear power plant	M&D Co., Ltd. (Q)
	Service no.44 Fire protection plan preparation and fire risk analysis for nuclear power plant	Standard testing & Engineering INC. (Q)
	Service no.46 Probabilistic safety assessment (PSA) for nuclear power plant	FNC Co., Ltd. (Q)
	Service no.48 Follow-up work according to periodic safety assessment result (PSR)	FNC Co., Ltd. (Q)
	Service no.64 Main control room habitability evaluation for nuclear power plant	M&D Co., Ltd.(Q), Standard Testing & Engineering INC.(Q)
	Service no.68 Periodic safety evaluation (PSR) for safety analysis Area	FNC Co., Ltd.(Q)
	Service no.69 Periodic Safety Assessment (PSR) for Waste Management and Radiation Protection Area	Orbitech Co., Ltd.(Q), FNC Co., Ltd.(Q)
	Service no.70 Periodic safety evaluation (PSR) for safety performance and power plant Area	M&D Co., Ltd.(Q), FNC Co., Ltd.(Q)
	Service no.58 Power driven valve (MOV/AOV) diagnostic test for nuclear power plant	M&D Co., Ltd.(Q), Soosan Industries Co., Ltd.(Q)

EQ service for nuclear power plants (M&E: Assessment & Verification)

- > Securing test specimens for each EQ target device aging evaluation method
- > Testing and evaluation of aging characteristics for each material
- > Testing and evaluating database by aging stage
- > Evaluating the feasibility of predictive diagnosis using test results
- > Monitoring of aging status according to the selected aging characteristic evaluation method

Company: FNC Co., Ltd. (Q)
KHNP Service no.05

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Assessment & Verification



EQ service for operating nuclear power plants (excluding accident analysis)

- > Securing test specimens for each EQ target device aging characteristic evaluation method
- > Test and evaluation of aging characteristics for each material
- > Preparation of test and test result database for each aging stage
- > Evaluating the feasibility of predictive diagnosis using test results
- > Monitoring of aging status according to the selected aging characteristic evaluation method

Company: Soosan ENS Co., Ltd.(Q)

KHNP Service no.06

Piping RI-ISI application for nuclear power plant

- > Accident analysis and pipe damage probability evaluation
- > Risk importance assessment
- > Selection of inspection area and method
- > Program implementation: Establishing a RI-ISI application system that can optimize the inspection site during pipe operation while reducing the risk of power plants due to pipe damage by focusing inspection on pipes with high risk of pipe damage and high possibility of pipe damage.

Company: M&D Co., Ltd. (Q)

KHNP Service no.38

Fire protection plan preparation and fire risk analysis for nuclear power plant

- > Fire protection facility concept and basic design
- > Fire protection facility consulting, risk assessment
- > Fire risk analysis of nuclear facilities such as nuclear power plants (operation, permanent shut-down, dismantling)
- > Fire safety shutdown analysis of nuclear power plant
- > Establishment of fire suppression measures for nuclear facilities such as nuclear power plants
- > Fire safety evaluation for other nuclear power plants

Company: Standard testing & Engineering INC. (Q)

KHNP Service no.44

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE Assessment & Verification



Probabilistic safety assessment (PSA) for nuclear power plant

- > First establishment of Probabilistic Safety Assessment (PSA)
- > Probabilistic safety evaluation results and analysis assumptions
- > Level and verification of computational codes and interpretation models used in probabilistic safety evaluation
- > Evaluation of the adequacy of guidelines for probabilistic safety evaluation
- > Derivation of safety improvement items based on the results of probabilistic safety evaluation

Company: FNC Co., Ltd. (Q)
KHNP Service no.48

Follow-up work according to periodic safety assessment result (PSR)

- > Follow-up action in mechanical, electrical, I&C, power plant operations, radiation control and waste, based on the PSR result

Company: FNC Co., Ltd. (Q)
KHNP Service no.46

Main control room habitability evaluation for nuclear power plant

- > Preliminary preparation such as review of drawings and related data (CRE boundary, volume, etc.)
- > Pre-walk down
- > Pre-test measures such as test equipment inspection/calibration, test equipment (gas container, analysis equipment, and other equipment) installation and performance check
- > Test for habitability in the main control room by the concentration reduction method and a certain amount injection method

Company: M&D Co., Ltd.(Q), Standard Testing & Engineering INC.(Q)
KHNP Service no.64

Periodic safety evaluation (PSR) for safety analysis Area

- > Evaluation scope, method and technical standard review
- > Safety analysis evaluation
- > Evaluation of safety issues and emergency operation procedures
- > Derivation of improvement measures and safety improvement items

Company: FNC Co., Ltd.(Q)
KHNP Service no.68

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Assessment & Verification



Periodic Safety Assessment (PSR) for Waste Management and Radiation Protection Area

- > Radiation protection, decontamination of radiation management areas
- > Radioactive waste management
- > Exposure management, TLD reading, radiation measuring instrument inspection and calibration room operation
- > Nuclear quality control
- > Operation of decontamination facilities, radioactive waste treatment facilities, and radiation (activity) measurement facilities

Company: Orbitech Co., Ltd.(Q), FNC Co., Ltd.(Q)
KHNP Service no.69

Periodic safety evaluation (PSR) for safety performance and power plant Area

- > Evaluation scope, method and technical standard review
- > Safety performance evaluation
- > Evaluation of utilization of driving experience and research results
- > Derivation of improvement measures and safety improvement items

Company: M&D Co., Ltd.(Q), FNC Co., Ltd.(Q)
KHNP Service no.70

Power driven valve (MOV/AOV) diagnostic test for nuclear power plant

- > Test special air tools and JIG production
- > Static diagnosis test, dynamic diagnosis test
- > Acquisition of data for analysis of vulnerable areas
- > As-Found status check and action
- > Analysis of design criteria and acquisition of data for final evaluation
- > Follow-up measures based on evaluation results (including margin improvement)

Company: M&D Co., Ltd.(Q), Soosan Industries Co., Ltd.(Q)
KHNP Service no.58

SERVICES

WHAT WE DO!

ENGINEERING & MAINTENANCE

Radiation Protection



Radiation management for Nuclear power plant

- > Radiation control area access and work management
- > decontamination and laundry
- > Radiation measurement support in the conservation area
- > Radiation measurement and measurement instrument operation support
- > Transportation of spent fuel transfer support
- > Radioactive waste treatment
- > Support for operation of on-site radiation mo
- > Management of radioactive waste dispose
- > Radiation measurement room operation support
- > Reclassification and repackaging of radioactive waste drums
- > Dose reading and employee exposure dose management support

Company: Orbitech Co., Ltd.(Q)

KHNP Service no.18



SERVICES OF GPCE

SERVICES

WHAT WE DO!

In Service Inspection (ISI)



Division	Description	Company
In Service Inspection (ISI)	Service no.35 Visual Inspection (VT) for Reactor Head (Upper, Lower) penetration	Ansco Co., Ltd.(Q)
	Service no.34 Non-destructive inspection and evaluation for reactor head penetration	Ansco Co., Ltd. (Q)
	Service no.12 Inservice inspection (ECT) for steam generator tube	Orbitech Co., Ltd.(Q) Ansco Co., Ltd. (Q)
	Service no.10 Inservice Inspection for pipes, equipment, structures	Orbitech Co., Ltd. (Q) Ansco Co., Ltd.(Q)
	Service no.51 Steam generator secondary side cleaning and foreign object inspection and removal (Lancing & FOSAR)	Soosan Industries Co., Ltd.(Q), ANSCO Co., Ltd.(Q)
	Service no.54 Control rod eddy current test(ECT) for nuclear power plant	Ansco Co., Ltd.(Q), Orbitech Co., Ltd.(Q)
	Service no.29 Inservice inspection for reactor containment building post tensioning system	Group one Co., Ltd. (Q)

Visual Inspection (VT) for Reactor Head (Upper, Lower) penetration

- > Perform preliminary preparation work such as test equipment performance test and system calibration, inspection equipment import and installation, equipment set up and performance test
- > Bare Metal Visual Inspection (Signal Collection and Evaluation)
- > Safety evaluation and countermeasures for defects in the test results

Company: Ansco Co., Ltd(Q)

KHNP Service no.35

Non-destructive inspection and evaluation for reactor head penetration

- > Perform preliminary preparation work, such as inspection equipment performance test and system calibration, transducer calibration, inspection equipment imports and installation, equipment set-up and performance test, etc.
- > Conducting non-destructive testing (ECT) of head penetration (signal collection and evaluation)
- > Performing non-destructive inspection (ECT, PT) of J-Groove welds of through pipes (signal collection and evaluation)
- > Safety evaluation and countermeasures for defects in the test results

Company: Ansco Co., Ltd. (Q)

KHNP Service no.34

SERVICES

WHAT WE DO!

In Service Inspection (ISI)



Inservice inspection (ECT) for steam generator tube

- > Establishment of inspection plan and preparation of procedures
- > Review of previous periodic inspection data and defect signals
- > BOBBIN for whole length inspection, MRPC tube for top of tube sheet & curved pipe inspection, etc.
- > Visual inspection of the surface and welding part such as chamber wall, tube plate, divider plate, nozzle closure ring, etc. on the primary side of the steam generator
- > Suggestion of countermeasures according to inspection results
- > Selection of inspection targets and establishment of inspection methods

Company: Orbitech Co., Ltd.(Q), Ansco Co., Ltd. (Q)

KHNP Service no.12

Inservice Inspection for pipes, equipment, structures

- > Manual inspection of piping, equipment, and structures (UT, PT, MT, VT)
- > Small-diameter piping inspection
- > Thermal stratification/heat fatigue piping inspection
- > High energy piping inspection
- > Containment Building Liner Plate Inspection
- > RCP flywheel inspection
- > FSWOL welding part inspection
- > Small-diameter pipe socket welding PAUT inspection
- > Dissimilar metal welding part inspection

Company: Orbitech Co., Ltd. (Q), Ansco Co., Ltd.(Q)

KHNP Service no.10

Steam generator secondary side cleaning and foreign object inspection and removal (Lancing & FOSAR)

- > Steam generator secondary side cleaning (Lancing):
 - Sludge cleaning on the upper side of the tube plate on the secondary side of the steam generator
 - Intensive cleaning of the high part of the sludge pile
 - Removal of the steam generator, sludge weighing and sampling (including packaging)
- > Foreign matter inspection/removal (FOSAR):
 - Steam generator annular outer part, central passage part foreign matter inspection and removal
 - Steam generator tube bundle internal foreign matter inspection and removal,
 - Other accessible parts foreign matter inspection and removal,
 - Foreign matter detection photos and location map Submission of basic for the submitted and confirmed foreign substances,
 - mapping of non-removable foreign substances
- > Confirmation and decontamination when a foreign substance evaluation signal is detected as a result of steam generator ECT

Company Soosan Industries Co., Ltd.(Q), Ansco Co., Ltd.(Q)

KHNP Service no.51

SERVICES

WHAT WE DO!

In Service Inspection (ISI)



Control rod eddy current test (ECT) for nuclear power plant

- > Review previous cycle data and fault check
- > Selection of inspections scope and methods
- > Submit the procedure for Eddy Current Test (ECT)
- > ECT execution (signal collection and evaluation)
- > Suggestion of countermeasures according to inspection results

Company: AnSCO Co., Ltd.(Q), Orbitech Co., Ltd.(Q)
KHNP Service no.54

Inservice inspection for reactor containment building post tensioning system

- > Inspection and relocation of inspection elevator
- > Data review and service plan establishment
- > On-site inspection for concrete and tendon systems
- > Analysis and evaluation of inspection results, establishment of structural defect countermeasures
- > Inspection result D/B establishment

Company: Group one Co., Ltd. (Q)
KHNP Service no.29



SERVICES

WHAT WE DO!

Design Engineering



Division	Description	Company
Design Engineering	Service no.04 Design-related work for mechanical equipment improvement of a nuclear power plant	DK Kocen Co., Ltd. (Q)
	Service no.09 Design-related work for electric facility for nuclear power plant	Powertos Co., Ltd. (A)
	Service no.60 Design-related work for I&C facility of nuclear power plant	DK Kocen Co., Ltd.(Q), Powertos Co., Ltd.(Q)
	Service no.03 Design-related work for Structure change and repair of nuclear power plant	DK Kocen Co., Ltd. (Q)
	Service no.07 Design-related work for protection relay for nuclear power plants	Powertos Co., Ltd. (A)
	Service no.19 Design-related work for penetrating sealing material design change for nuclear power plant	Guju Technology Co., Ltd. (Q/A) Standard Testing & Engineering INC (Q/A)

Design-related work for mechanical equipment improvement of a nuclear power plant

- > Work related to design change for structures, systems, equipment, maintenance convenience facilities, and operation convenience facilities of nuclear power plants
- > Safety assessment of facilities, technical review such as support for licenses and permits, and preparation of calculations to take measures against the general design technology design list of nuclear power plants
- > Prompt technical support in case of emergency related to the provided general design technology design list

Company: DK Kocen Co., Ltd. (Q)
KHNP Service no.04

Design-related work for electric facility for nuclear power plant

- > Design related tasks for design changes such as improvement of electrical facilities at nuclear power plants
- > When changing the design of electrical facilities of a nuclear power plant, safety evaluation of the facility, technical review such as support for licensing, etc.
- > Prompt technical support in case of emergency related to design technology related to electrical design change

Company: Powertos Co., Ltd. (A)
KHNP Service no.09

SERVICES

WHAT WE DO!

Design Engineering



Design-related work for I&C facility of nuclear power plant

- > Design change related service
- > Review of design standards and licensing requirements and support for licensing
- > Technical support for licensing requirements and regulatory technical standards, etc.
- > Review of improvement measures for vulnerable facilities and aging facilities
- > Review of measures to prevent breakdown and improve utilization rate
- > Equipment verification (EQ, SQ) relevance review
- > Facility efficiency and performance improvement plan review

Company: DK Kocen Co., Ltd.(Q), Powertos Co., Ltd.(Q)
KHNP Service no.60

Design-related work for Structure change and repair of nuclear power plant

- > Design-related work for structural remodeling and repair of nuclear power plants
- > When taking measures to change and repair the structure of a nuclear power plant, review the safety of the facility, support for licensing, etc.,
- > Prompt technical support in case of emergency related to maintenance-related design technology

Company: DK Kocen Co., Ltd. (Q)
KHNP Service no.03

Design-related work for protection relay for nuclear power plants

- > Periodic test to check the normal operation of the protection relay
- > Operational state analysis test, cause analysis, and replacement work to identify the cause of malfunction/failure and when it is necessary to reset the protection relay
- > Protection relay failure repair and performance test
- > Performance test when newly purchased protective relay is received (confirmation of conformity with purchase specification)
- > Power conversion device calibration and output value check
- > Check the function and set value comparison for triple protection relay period
- > Synchronous circuit, CT and PT, etc. linked circuit inspection
- > Protection relay event data acquisition and analysis

Company: Powertos Co., Ltd. (A)
KHNP Service no.07

SERVICES

WHAT WE DO!

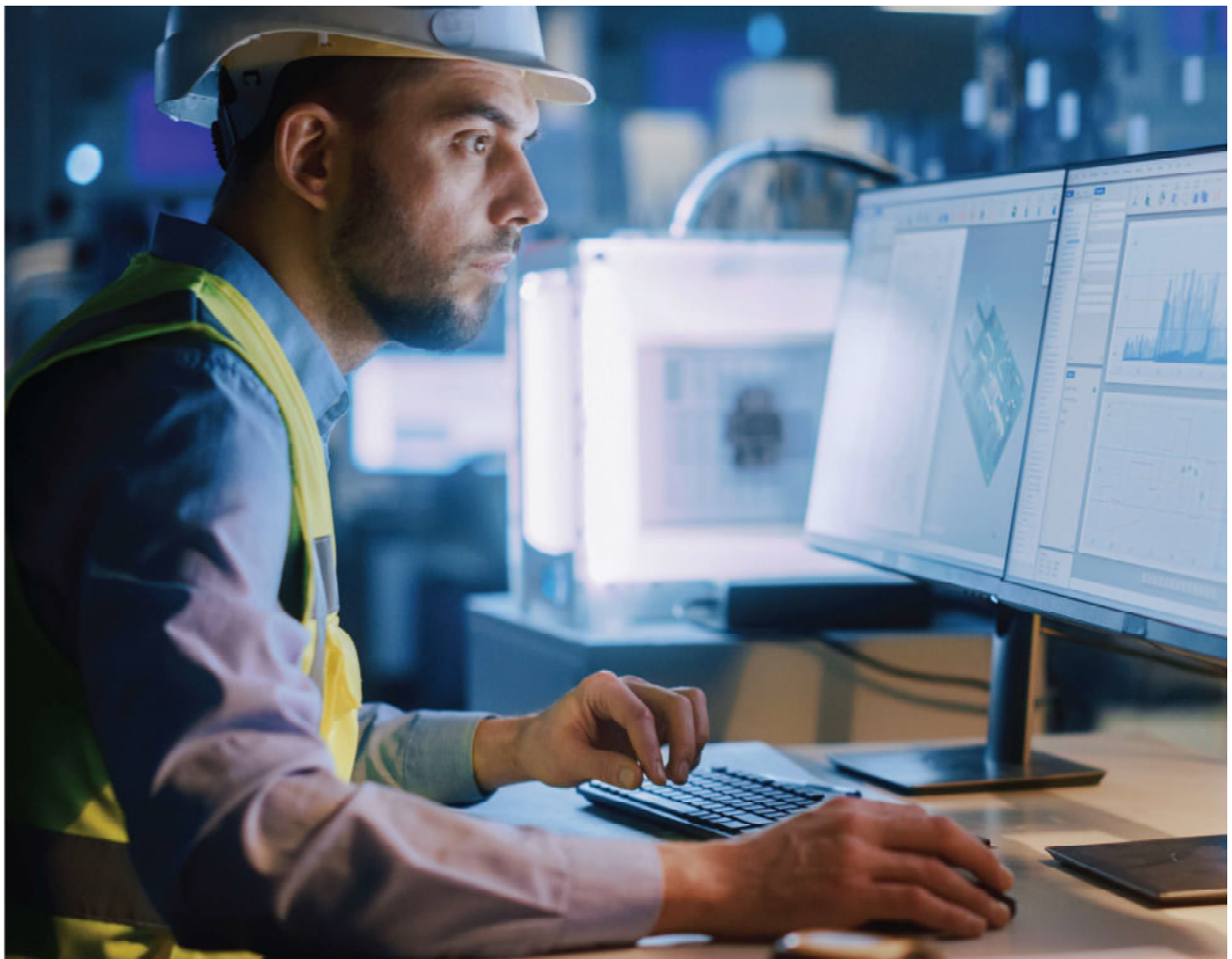
Design Engineering



Design-related work for penetrating sealing material design change for nuclear power plant

- > Review design requirements and collect related data
- > Current status investigation and visual inspection of penetrations and openings
- > Implement design of new and changed penetrations
- > Analysis of the degree of deterioration of the sealing material changed in design and evaluation of physical conditions

Company: Guju Technology Co., Ltd. (Q/A), Standard Testing & Engineering INC (Q/A)
KHNP Service no.19



SERVICES

WHAT WE DO!

MATERIAL & EQUIPMENT Equipment Repair



HVAC system equipment

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-HV1

Radiation equipment

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-RD1

Piping support

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-PS1

Piping/fitting

Company: Moojin Co., Ltd(Q), Enesg Co., Ltd.(Q)
KHNP Repair no.ME-PF1

Valve (50" or less, 10kg/cm2 or less)

Company: Samshin Co., Ltd.(Q)
KHNP Repair no.ME-VV1

Valve (50" or less, voltage power)

Company: Moojin Co., Ltd(Q), Enesg Co., Ltd.(Q), Samshin Co., Ltd.(Q)
KHNP Repair no.ME-VV2

Valve (safety valve/relief valve)

Company: Samshin Co., Ltd.(Q)
KHNP Repair no.ME-VV5

Valve (all standards)

Company: Moojin Co., Ltd(A), Samshin Co., Ltd.(Q)
KHNP Repair no.ME-VV4

SERVICES

WHAT WE DO!

MATERIAL & EQUIPMENT Equipment Repair



Valve (full diameter, 10kg/cm² or less)

Company: Samshin Co., Ltd.(Q)
KHNP Repair no.ME-VV3

Bolt/nut

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-BO1

Auxiliary and tools manufacturing for facilities (radioactive material (support, radioactive material drum, decontamination facility), heavy water/hydrogen/oxygen analyzer)

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-AX3

Auxiliary and tools manufacturing for facilities (Nuclear plant equipment)

Company: Moojin Co., Ltd(Q), Enesg Co., Ltd.(Q)
KHNP Repair no.ME-AX1(Q)

Auxiliary and tools manufacturing for facilities (steel structure, generator/turbine rotor support)

Company: Moojin Co., Ltd(Q), Enesg Co., Ltd.(Q)
KHNP Repair no.ME-AX2

Pressure vessel

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-PV1

Heat exchanger (tube/shell type including HVAC Fan Coil Unit)

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-HX2

Fuel handling facility parts for Nuclear power plant

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-NT1

SERVICES

WHAT WE DO!

MATERIAL & EQUIPMENT Equipment Repair



Power supply

Company: Real Gain Co., Ltd.(Q), Ihsung C&I Co., Ltd.(Q), Soosan E&S Co., Ltd.(Q)
KHNP Repair no.IC-PS1

Electronic card/module

Company: Real Gain Co., Ltd.(Q), Ihsung C&I Co., Ltd.(Q), Soosan E&S Co., Ltd.(Q)
KHNP Repair no.IC-CM1

Intake system equipment

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-LS1

Turbine governor

Company: Enesg Co., Ltd.(A)
KHNP Repair no.ME-TB2

Pump (all standards)

Company: Moojin Co., Ltd(Q)
KHNP Repair no.ME-PP2\

SERVICES

WHAT WE DO!

MATERIAL & EQUIPMENT

Auxiliary Equipment & Spare Parts



EPL01(A)	Auxiliary Equipment Control System For I & C
J205(A)	Closed Circuit Television System
J202(Q)	Radiation Monitoring System

Company: Real Gain Co., Ltd.

M229B(A)	ASME VIII Heat Exchanger(Shell & Tube Type)
N217(A)	Filter Handling Equipment
MWG03(A)	Intake Equipment
N224(Q)	New & Spent Fuel Storage Rack
N210(A)	Non-Safety Related Pressure Vessel & Tanks
JIC07(A)	Plasma melter System
N205(Q)	Shop Fab.Pr.Vessel & Tank ASME ☐
P202A(Q)	Shop Fabricated ASME ☐ Pipe
P202C(A)	Shop Fabricated ASME B31.1 Piping 12" or less
P202B(A)	Shop Fabricated ASME B31.1 Piping 14" or more
CGN01(A)	Structural Steel(Water Power)
M265(S)	Stud Tensioners
M241(Q)	Traveling Screen & Intake Structure accessories
MRD05(A)	Heavy water reactor spent fuel storage tray
MRD06(A)	Spent fuel basket for heavy water reactor

Company: Moojin Co., Ltd.

E233(A)	AC/DC Distribution Panel & Transfer Switch
JCT01(A)	Annunciator
E231(A)	Electric Control & Relay Panel
E231A(A)	Electrical Control&Relay Panel
EPL02(A)	Electrical equipment & Monitoring System
EPL03(A)	Main Electrical Board & Protection Relay Panel
E223W(A)	Switchyard Bus & Tie Line Protection Panel(345KV)
E222(A)	Switchyard Control Panel

Company: Youngin Engineering Co., Ltd.

N227(A)	Spent Fuel Inspection System
J206(A)	Vibration Monitoring System

Company: Soosan E&S Co., Ltd.

SERVICES

WHAT WE DO!

MATERIAL & EQUIPMENT Auxiliary Equipment & Spare Parts



E272E(A)

LED LAMPS & FIXTURES FOR HIGH RADIATION AREA

E272D(A)

LED LAMPS AND FIXTURES FOR LOW RADIATION AREA

Company: Solux Co., Ltd.

P206C(Q)

ASME III Control Closure Check V/V

P204(Q)

ASME III Manual Steel Gate, Globe & Check V/V 2.5" & Larger

P207(Q)

ASME III Manual Steel Gate, Globe & Check V/V 2.5" & Smaller

P206A(Q)

ASME III Steel Gate, Globe V/V With Actuator

P206D(Q)

ASME III/B31.1 Tilting Disc Check V/V

P209(A)

ASME B31.1 Manual Steel Gate, Globe & Check V/V 2.5" & Larger

P206B(A)

ASME B31.1 Steel Gate &, Globe V/V With Actuator

J236(A)

Bleeder Trip Valves

J235(A)

Butterfly Valve for General Service

J233(Q)

Butterfly Valve For Nuclear Service

P208(Q)

Diaphragm Valve

PPI02(A)

Pipe Fitting - Forged Steel

M245(Q)

Safety Relief Valves

P214(A)

Steel Plug Valve 12" or less

Company: Samshin Co., Ltd.

E246(A)

Cathodic Protection System

Company: Prime Corporation Co., Ltd.

SERVICES

WHAT WE DO!

PRO, Logistics & Warehouse, Trading & Maintenance Workshop



PRO Services

- > Visa Support
- > Legal Translations
- > Documentation Translation
- > Interpretation

Logistics & Warehouse

- > Freight Solutions
- > Warehousing & Storage Facilities
- > Local Clearance
- > Mobilization & Demobilization
- > Express Service

Trading & Maintenance Workshop

- > Dedicated Partners as a Total Solution
- > Local and International Representation and Experts on the Ground
- > Continuous Improving Process from Start to End
- > Local and International Trading
- > State of the Art Workshop

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