



Nuclear Energy, Quality Assurance & CFSI Program in UAE

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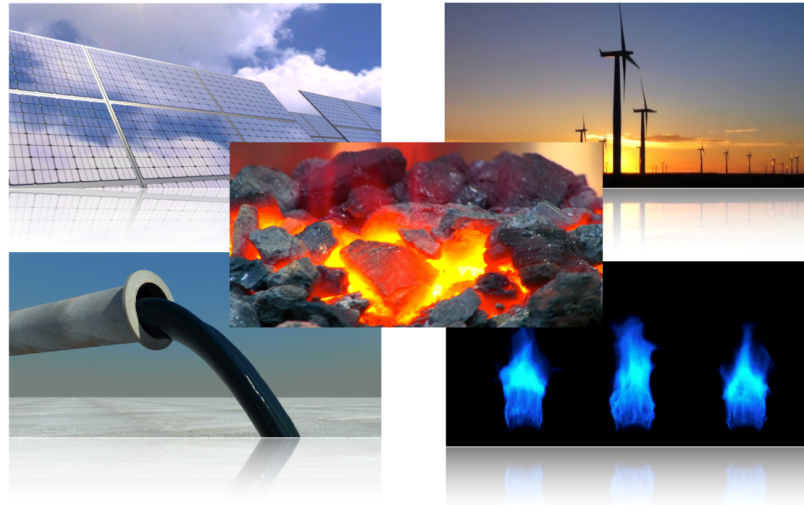
- **Nuclear Energy Choice for the UAE**
- **Our Stakeholders**
- **Culture of Safety in Nawah**
- **Nawah Quality Assurance**
- **CFSI**

Nuclear Energy Choice for the UAE

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Nawah Energy Company



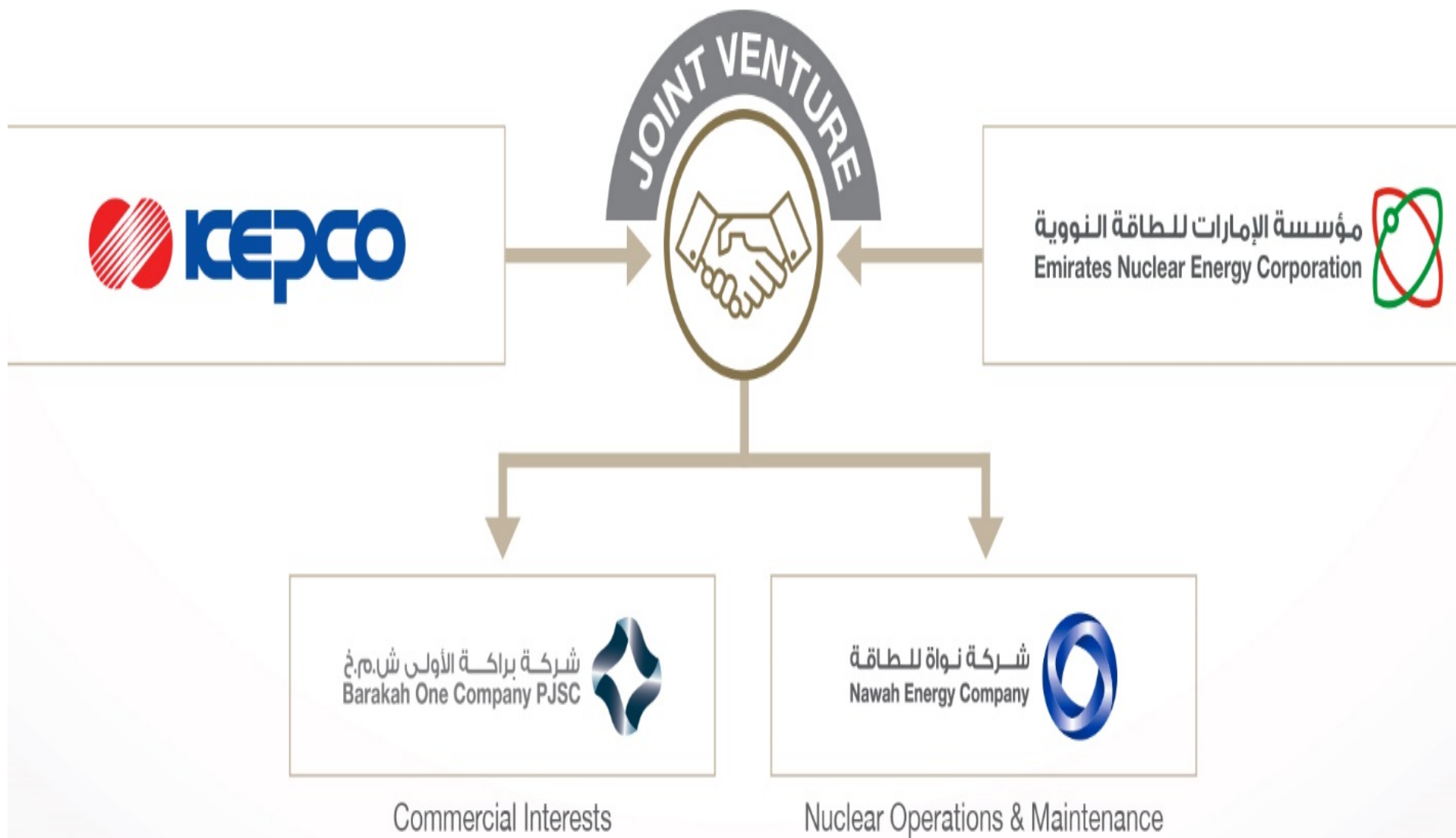
- Based on these projections, the UAE evaluated multiple energy options to meet its future energy demand and found most conventional power sources insufficient to fully meet power output, cost-efficiency, security of supply, or environmental requirements.





United Arab Emirates

Policy of the United Arab Emirates on the Evaluation and Potential Development of Peaceful Nuclear Energy

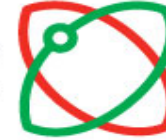


Our Stakeholders

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مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation





Our Healthy Safety Culture has key elements and ensures that nuclear safety is built into everything that we do:

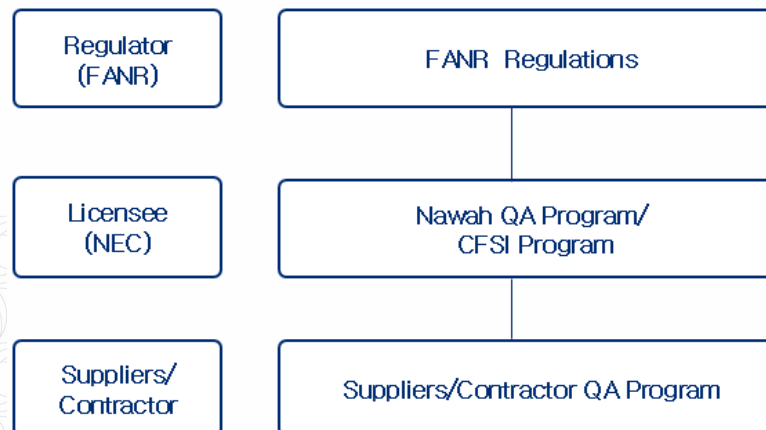
- **Clearly communicates expectations.**
- **Ensures that our nuclear standards are in balance and are maintained.**
- **Fully supports error minimization and event prevention.**
- **Executes safe and secure work tasks**
- **Fosters a work environment that promotes learning and questioning attitudes**
- **Ensures appropriate training of our employees on skills and behaviors.**

Nawah Quality Assurance

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- Quality assurance(QA) comprises all planned and systematic actions that are necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.
- Nawah QA program is established and implemented to satisfy the requirements of UAE Laws/FANR regulations, ASME NQA-1-1994, Part I & II with 1995 Addenda.
- Attributes of a QA program include procedures, recordkeeping, inspections, corrective actions, and audits.
- CFSI program was established and implemented to support the Nawah QA program, and their requirements are cascaded to contractors & suppliers .



Counterfeit, Fraudulent and Suspect Items (CFSI) – History at BNPP

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- 2012, the identification of prevalent CFSI parts in the nuclear supply chain was announced.
- Main Interim Action: QVD Checked 100% BNPP equipment, components, material at site for its authenticity (QVDs against original source) –2013
- Further Action: updated the QA manual to cover additional CFSI requirements, created the CFSI program and checklist.

Counterfeit, Fraudulent and Suspect Items (CFSI) – History at BNPP

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More actions:

- Program assessments using an independent third party.
- Focused CFSI training and awareness sessions.
- Routine and focused CFSI inspections, self-assessment and audits.
- Increased Witness/Hold Points for material verification and testing.
- Cascading of program elements down into the supply chain.
- Physical verification of material at the earliest point possible in the supply chain..
- Random sampling based on a statistically acceptable methodology.
- Independent testing utilizing predefined selection criteria.
- Specific criteria for checking Commercial Grade Dedication Items.
- Continues surveillance of CFSI issues in the industry (OE).



- **Purpose of the Program**

To prevent the entry of Counterfeit, Fraudulent, and Suspect Items (CFSI) into the Barakah NPP program and supply chain.

- **FANR Commitments**

- Implementation of the CFSI based program
- Use of International Experience & Standards
- Witnessing, Manufacturing, & Testing Regime
- Specialized Training for Auditors, Inspectors, & Engineers
- CFSI Checklist
- Organizational Issues & Safety Culture



Program Objectives

1. Mitigate the risk of having CFSI in BNPP Supply Chain
2. Comply with FANR regulations
3. Incorporate best industry practices into the CFSI program, in addition of sharing CFSI experience within the industry.
4. Planning and implementing CFSI prevention measures at Nawah.
5. Enhance CFSI awareness of Nawah staff responsible for CFSI prevention.
6. Disposition of CFSI items and potential CFSI causes identified at Nawah



- Nawah's CFSI requirements are outlined in its Quality Assurance Manual and cascaded to all functions and reflected on the CFSI checklist.
- All Nawah Purchase Orders have a standard procurement clause in the General Terms and Conditions related to CFSI Standard Procurement Clause (SPC).
- To ensure compliance with Nawah CFSI requirements, all Contractors and Suppliers will continue to monitor and provide feedback to Nawah on the flow down of the CFSI requirements to its subcontractors.
- This cascading of requirements is achieved through a combination of documentation updates in terms of supplier QA Manuals, procedures, inspections, surveillances, assessments and audits (CFSI stand alone audits if required).
- When necessary, Nawah QA should engage external expertise in support of CFSI and Commercial Grade Dedication (CGD) focused audits, especially those with experience in detecting such issues in a broader industrial environment.

BNPP Program – Current Requirements & Controls (cont.)

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A. Process to prevent CFSI

Design programs to include descriptions of critical characteristics of items which can be used in CFSI detection and to identify vulnerabilities to check for

B. Processing Suspect Items

If a component or material is suspected to be counterfeit, the following actions shall occur to ensure the component or material is not installed into BNPP:

BNPP Program – Current Requirements & Controls (cont.)

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- Use our third party laboratory INTERTEK.
- Determine if substantiated component or material will be scrapped, returned to the supplier, or used as-is based upon the **disposition (If the material proved to be intentionally misrepresented then it will not be returned to supplier).**
- Suppliers who deal in counterfeit material will be removed from the Approved Supplier List.
- According to FANR LC6 (reporting of unplanned events) we shall report the authority within 72 hours in case of violation, event or deficiency in license conditions



- Counterfeit latching hook used when transporting critical permanent plant equipment
Potential Consequence: Damage to Critical Plant Equipment
- Fraudulent document for Job Hazard Analysis and noncompliance to HS procedure for risk control
Potential Consequence: Injury to plant personnel
- Industry CFSI experience - Re-bar Supplier (E&P).
Potential Consequence: Long Term reliability/integrity of plant structures
- KOBE steel – investigation in process
Potential consequence: Long Term reliability/integrity of plant structures and equipment.

What We All Need to Do

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- **We need to:**
- Recognize that corruption and CFSI is still a REAL concern in supply chain.
- Be on the lookout for things that 'don't look right':
 - Paperwork that is missing or is incorrect
 - Items that appear to have been altered
 - Material ID markings that are missing or appear altered
 - Interior sub-components (in the same cabinet) that are different
- Follow our procedures, processes, and checklists when doing inspections and oversight activities
- Contact supervision and write a DNR/CR when issues are seen



Top priorities for successful completion of BNPP projects

“First : Safety.”

“ Second : Quality.”

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“Third : Schedule.”

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“Fourth : Cost”

Thank you

Sultan Al Qahtani
Head of QA Program

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