



A Newcomer Country's Regulatory Approach to Safety Culture

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- UAE nuclear programme – background and current status
- FANR approach to Safety Culture
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UAE Nuclear Energy Programme

- The UAE Policy (White Paper) on the *Evaluation and Potential Development of Peaceful Nuclear Energy* committed the UAE to complete operational transparency and international cooperation for any nuclear program (Spring 2008).
- The UAE nuclear law (9/2009) establishes FANR as the independent federal regulatory authority charged with regulation of all nuclear activities in the state.
- The Abu Dhabi government subsequently (12/2009) establishes the Emirates Nuclear Energy Corporation (ENEC) as the Nuclear Energy Program Implementation Organization (NEPIO).





UAE Nuclear Energy Programme (cont.)

- The Emirates Nuclear Energy Corporation (ENEC) selected Korean APR 1400 Design late 2009.
- 4 Units scheduled, with operation of first unit scheduled for 2017. Following units in successive years (2018, 2019 and 2020).
- FANR review of Barakah 1&2 PSAR completed mid 2012, Safety Evaluation Report issued
- Construction Licence granted July 17th, 2012



FANR Mission & Core Values

Mission

The Authority's Mission is to protect the public, workers and the environment by conducting nuclear regulatory programmes in safety, security, radiation protection and safeguards by fulfilling the following key objectives:

- Licensing and inspection activities which are **benchmarked against international best practices**
- Capacity-Building strategies to ensure sustainability
- Appropriate oversight of the obligations under the international treaties, conventions and agreements in the Nuclear Sector entered into by the UAE
- Administrative standards which support excellence in regulation

Core Values

- Awareness and Responsibility for Safety
- Independence
- Transparency
- Competence

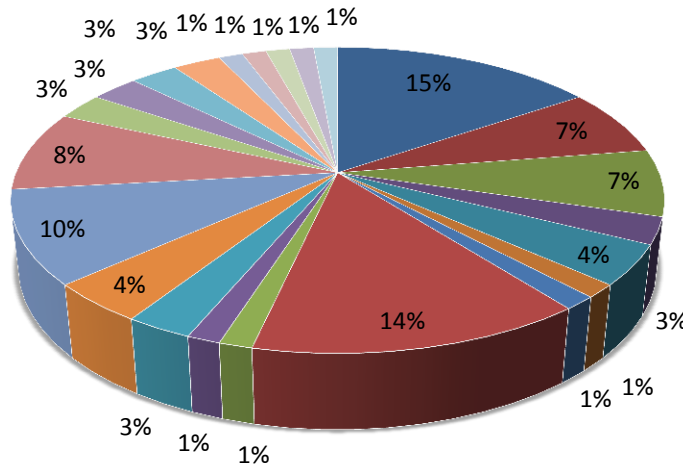
Workforce

Current: **153 employees**

Nationalities: **24 different Nationalities including the UAE**

UAE Nationals represent 53% of workforce

FANR – Distribution of Nationalities in 2012



- | | | | | |
|------------------|------------|-----------|-------------|----------------|
| ■ US | ■ JORDAN | ■ SYRIA | ■ AUSTRALIA | ■ INDIA |
| ■ FINLAND | ■ JAPAN | ■ CANADA | ■ SOMALIA | ■ LEBANON |
| ■ SWEDEN | ■ PAKISTAN | ■ UK | ■ EGYPT | ■ SOUTH AFRICA |
| ■ CZECH REPUBLIC | ■ SUDAN | ■ KOREA | ■ FRANCE | ■ ARGENTINA |
| ■ BRAZIL | ■ POLAND | ■ Russian | | |



FANR Approach to Safety Culture

1) Internal Initiatives

- Integrated Management System manual outlines FANR Safety Culture policy
- Internal Self Assessment and Non-Conformance / Corrective Action procedures
- Safety Culture Training
- Public forums to discuss FANR's role in ensuring safety and to assess level of public acceptance

FANR

Approach to Safety Culture



2) Regulation

- Based on IAEA safety standards and safety guides
- Requires Licensee integration of Safety Culture into Management Systems
 - ENEC has issued “Culture of Safety Policy” and “Culture of Safety Strategy Plan” (based on WANO’s 8 Principles for a Strong Nuclear SC)

<http://www.fanr.gov.ae/En/RulesRegulations/RegulationsGuides/Pages/Regulations.aspx>



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Approach to Safety Culture

3) Review and Assessment



- Review of ENEC Preliminary Safety Analysis Report (PSAR)
 - Chapter 13 “Conduct of Operations”
 - Chapter 17 “Management of Safety and Quality Assurance”
- Several Safety Culture related RAIs raised – all adequately addressed and closed



FANR Approach to Safety Culture

4) Inspection

FANR	Inspection Instruction Safety Culture	Doc. Id. MS-03 REV 0 Page 3/26
<p>1. Inspection Objectives</p> <p>Safety Culture has two general components. The first is the necessary framework within an organisation and is the responsibility of the management hierarchy. The second is the attitude of staff at all levels in responding to and benefiting from the framework. The overall objective of this instruction is to evaluate these two components, broken down as follows:</p> <ol style="list-style-type: none">a. To determine whether the organization has promulgated guidance and developed processes and procedures to promote and support a strong safety culture.b. To determine whether the guidance, processes and procedures have been effectively implemented.c. To determine whether the key aspects of safety culture exist within the organization. (Ref b)<ul style="list-style-type: none">• Safety is a clearly recognized value• Leadership for Safety is clear• Accountability for Safety is clear• Safety is learning driven• Safety is integrated into all activities		

- FANR Inspection Instruction “Safety Culture”
- Used to assess Licensee Safety Culture framework, implementation, and existence of SC aspects within the organization
- Current focus is on potential indicators of weak SC during construction phase:
 - ENEC audits of contractors
 - Safety Culture survey results
 - Effectiveness of CA and SA programmes



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Approach to Safety Culture

4) Inspection (cont.)

- Methods
 - Documentation review (policies, procedures, training records, ENEC audit reports)
 - Interviews of management responsible for SC programme
- ENEC has implemented initial elements of SC programme
- 2 SC focused inspections of ENEC have been performed to date (no findings)

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Path Forward

Continued development of regulatory approach to Safety Culture through:

- Benchmarking of other regulatory approaches
- Utilizing Safety Culture insights from Fukushima
- Implementation of resident inspector(s) at the Barakah site to monitor day to day operations
- Gradual shift of inspection focus from ENEC SC program development towards implementation and performance
- Trending of inspection findings to identify systemic issues
- Continuing public engagement



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Thank You!

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