Application of safety requirements for nuclear power plants to small and medium sized reactors by the Tunisian nuclear legal framework
Introduction of the first NPP in Tunisia: Key dates

November 2006

- The government decision to study building the first nuclear power plant by 2020 + RR?

- The feasibility study conducted by Electricity Authority (STEG)

- The legislative and regulatory framework

  - the ministry of higher education, scientific research and technology
Introduction of the first NPP in Tunisia: Key dates

- 15 April 2008  Decision of the NAEC to create an ad hoc task group with clear terms of reference to propose an integrated Nuclear legislative and regulatory framework by:
  - Drafting or;
  - Amending existing laws or decrees
Composition of the WG

Legal advisors, engineers, scientists and experts in different specializations from different national departments and institutions: P.M/M.Int /M.Just /M.Def/ M.Tr/ M.Ind/ M.Health/ M.HESRT/M.Env / M.Fin M.Equipment / M.Dev, int coop / M.Agr

CNSTN/STEG/CNRP/ANGED/ANPE
First step: Assessment of the Tunisian National Nuclear and related Legislation (1/3)

- The radiation protection in the nuclear installations is excluded from the scope of application of the basic radiation protection law n°81-51 dated June 1981 and will be covered by special laws.

- Law n° 97-37 dated June the 2nd 1997 and its decrees of applications related to the transport by road of hazardous materials doesn’t cover all aspects of the transport of the nuclear materials.
First step: Assessment of the Tunisian National Nuclear and related Legislation (2/3)

- The law n° 96-41 dated on June 1996, related to waste management, control and elimination, is a general legal framework covering all kind of waste and there is a need to promulgate provisions covering the radioactive waste management.
First step: Assessment of the Tunisian National Nuclear and related Legislation(3/3)

- The legislation and regulations in force in Tunisia reflect the existing nuclear activities.
- Laws, decrees, ministerial orders deal with nuclear applications in the different fields other than nuclear installations or activities related to the nuclear fuel cycle management.
- For these activities the CNRP is acting since early 80th of the last century as a regulatory authority.
Second step: Review of the position of Tunisia with regard to International Legal Instruments (1/3)

<table>
<thead>
<tr>
<th>Treaty/Convention</th>
<th>Position of Tunisia</th>
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<td>Treaty of non proliferation</td>
<td>Signed and adopted</td>
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<td>Comprehensive safeguard agreement</td>
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<td>Additional protocol</td>
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<td>Convention on early notification of nuclear accident</td>
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<td>C. On assistance in the case of a nuclear accident</td>
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<td>Convention on nuclear safety</td>
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<td>Joint convention on the SSFM and on the SRWM</td>
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**Second step**: Review of the position of Tunisia with regard to International Legal Instruments (2/3)

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<tr>
<td>Convention on physical protection of nuclear material</td>
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<td>Amendment of the CPPNM</td>
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<td>Vienna convention on civil liability for nuclear damage</td>
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<td>Joint protocol relating to the application of the Vienna convention and Paris convention</td>
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<td>Protocol to amend 1963 Vienna convention</td>
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Second step: Review of the position of Tunisia with regard to International Legal Instruments (3/3)

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<td>Comprehensive nuclear test ban treaty</td>
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<tr>
<td>IAEA Codes of conduct and practice and guidance</td>
<td>In process</td>
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Work plan

- It was decided to:
  - Prepare a comprehensive national nuclear law covering safety, security and safeguards, as well as liability for nuclear damage.
  - Establish a new regulatory body.
Establishing a new Regulatory Body (1/2)

- It was adopted that a single regulatory body may carry out regulatory functions for safety, security, safeguards, radiation protection, physical protection, radioactive material transport, and radioactive management.

- It was adopted and approved by the NAEC that one regulatory body will be established with such regulatory functions for nuclear installations and radioactive sources.
Establishing a new Regulatory Body (2/2)

- It was also approved that the law should provide for, and the State should ensure, the effective independence of the regulatory body by ensuring a clear separation of promotional/advisory and regulatory functions, as well as providing it with the needed authority, the competent human resources and adequate financial means.
Approaches adopted for the new regulatory body (1/2)

- It was approved that the new RB will be an independent authority acting that should report only to the prime minister and called Tunisian Nuclear Safety Commission
Approaches adopted for the new regulatory body (2/2)

- Authorise all nuclear activities (except for the creation of nuclear installation that require a decree proposed by this agency)
- Control and inspect
- Enforce the application of relevant legal requirements
- Inform the public
Nuclear Law Project

a- Draft law on the peaceful uses of nuclear energy and its applications is being completed and decrees of application are under elaboration

b- Draft law related to the creation and a decree related to the organization of the:

Tunisian Nuclear Safety Commission
Safety requirements under the nuclear law project

- Scope: law covers all nuclear and radiological installations
The law requires that a safety assessment is needed at all levels and all phases of nuclear power plant
To obtain authorization, the operator must make several safety assessments that cover all the areas of Site Selection, Facility Design and Intervention. 

**Article 36:** The National Agency for Nuclear Safety must give its approval before the start of the normal operation of the nuclear facility, based on an analysis of the safety and commissioning tests. The program of commissioning tests must demonstrate that nuclear installation as constructed, is consistent with design and safety requirements.
Site Selection

- Article 30: Site selection must take into account relevant features that can affect the safety of the facility. All aspects should be evaluated for the projected lifetime of the facility and re-evaluated, as appropriate, to ensure that site-related factors remain acceptable in terms of safety.
Article 35: The operator of a nuclear facility shall conduct a detailed safety assessment and verification to confirm that the system design meets the safety objectives and requirements.
Facility Design

**Article 32:** The design of the nuclear facility must include a proper application of the principle of defense in depth.

**Article 33:** The design of the nuclear facility must be based on the principle of ALARA to reduce radiation exposure. The design should prevent releases of radioactive materials and factors that could lead to the probability of failure.

The techniques used in the design shall be tested or confirmed by experience, by tests or by both.
# Exploitation

**Article 29**: The operator of a nuclear installation shall:

<table>
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<th>Establish strategies</th>
<th>Management structure</th>
<th>Quality assurance system</th>
<th>Competent staff</th>
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| • Highest priority to safety issues | • Division of responsibilities and lines of communication are clear | • Cover the entire life of the facility, from site selection and design to decommissioning | • Adequately trained  
• Working according to approved procedures |
Exploitation

Article 38:

The nuclear facility must be checked, inspected, tested and maintained in accordance with approved procedures. When modifications conduct to limits and operating conditions, changes, and safety assessment, they are still available, justified and continue to operate as intended, and so they retain their ability to meet design and safety objectives and requirements.
Exploitation

Article 40:

The operator of a nuclear facility shall verify by analysis, surveillance, testing and inspection that the facility and its operations remain in compliance with the limits and conditions of the authorization.

Exploitation

Article 40:

Systematic safety reassessments of the nuclear facility in compliance with regulatory requirements should be carried out throughout the lifetime of the installation, taking into account operating experience and any significant new information about the safety from all relevant sources.
Article 39: The operator of a nuclear facility shall establish and implement procedures for action in case of anticipated operational incidents or accidents. The operator and the National Agency for Nuclear Safety shall establish complementary safety requirements based on operating experience and lessons learned from incidents and accidents.

Article 46: Preparatory and response plans in case of emergency should be established and tested before the commissioning of NPP.

Article 47: Preventive and protective measures should be taken in time to eliminate without delay situations that may threaten the nuclear and radiation safety of people, property and the environment.

Article 50: The operator must test and periodically assess the internal emergency plan to meet the safety objectives and requirements.
Decommissioning

**Article 52:** The ATSN must establish criteria relating to safety and the environment for the facilities decommissioning.

**Article 53:** The operator must conduct safety assessments and environmental impact of the facility decommissioning.
SA is an essential task to ensure the proper functioning of a NPP facility and the respect of both human health and environment that is why we insist in the draft of TUNISIA regulation that the operator establish several safety assessments in all levels and all stages of the lifetime of a NPP.
THANK YOU FOR YOUR ATTENTION