

# Building **REGULATORY FRAMEWORK** for the Oversight of New NPPs in TURKEY

Dr. Serhat ALTEN  
Head, Dept. of Nuclear Installations, NDK

*CONTENTS*  
Regulatory  
Framework  
Safety Regime  
Authorizations  
Akkuyu NPP

***CONTENTS***

- Regulatory Framework of Turkey
- Safety Regime
- Authorizations for NPPs
- Milestones of Akkuyu NPP project

## CONTENTS

Regulatory

Framework

Safety Regime

Authorizations

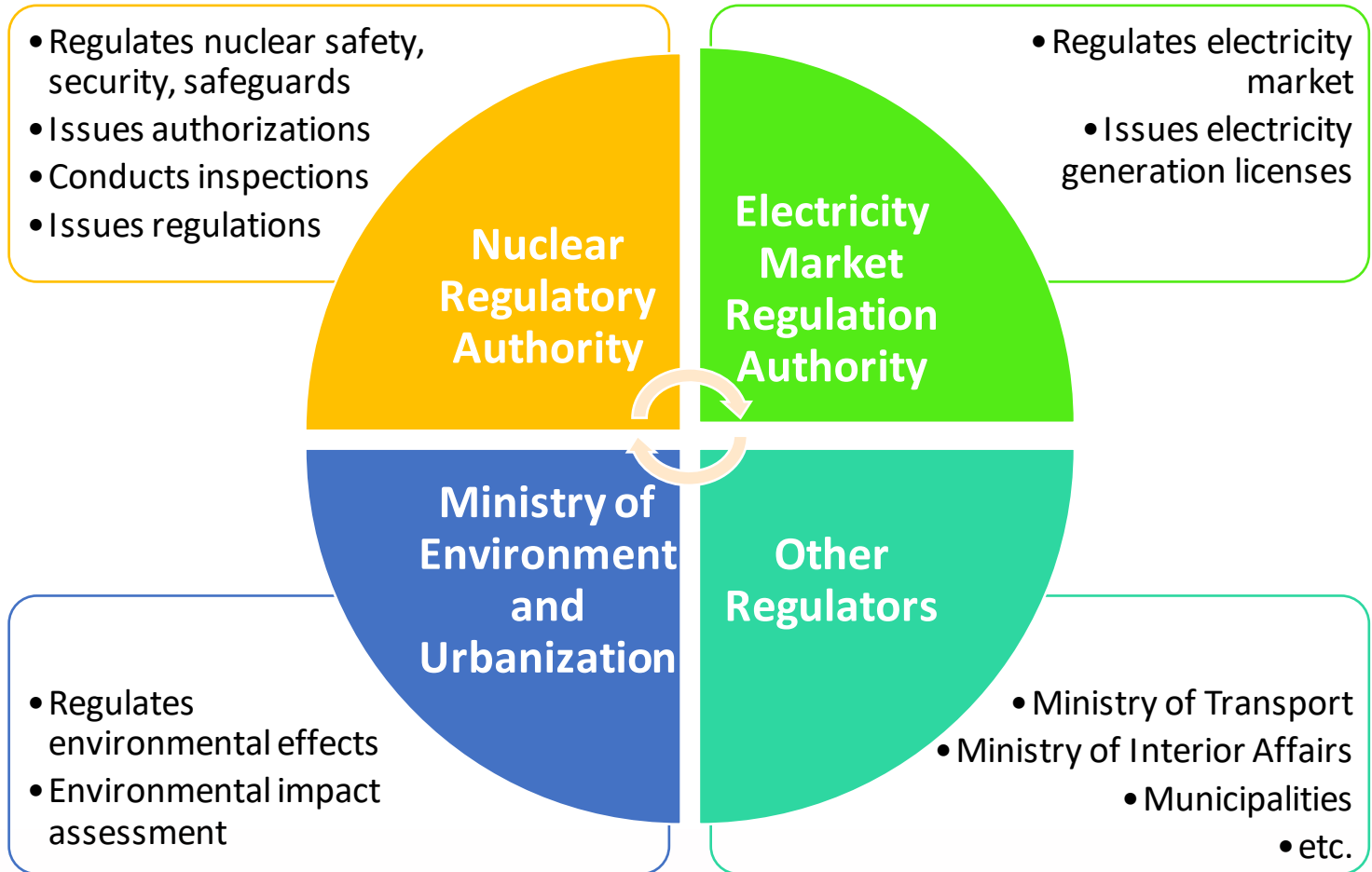
Akkuyu NPP

### ***National Nuclear Law - 2018***

- Regulates the facilities and activities, laying out responsibilities of relevant parties – replacing TAEK Law of 1982
- Addressed issues like
  - Prime responsibility
  - Authorizations
  - Radioactive waste management
  - Decommissioning
  - Funds for radioactive waste management and decommissioning
- Established the independent nuclear regulator NDK
  - Initial staff from regulatory units of TAEK
  - Transition period envisaged

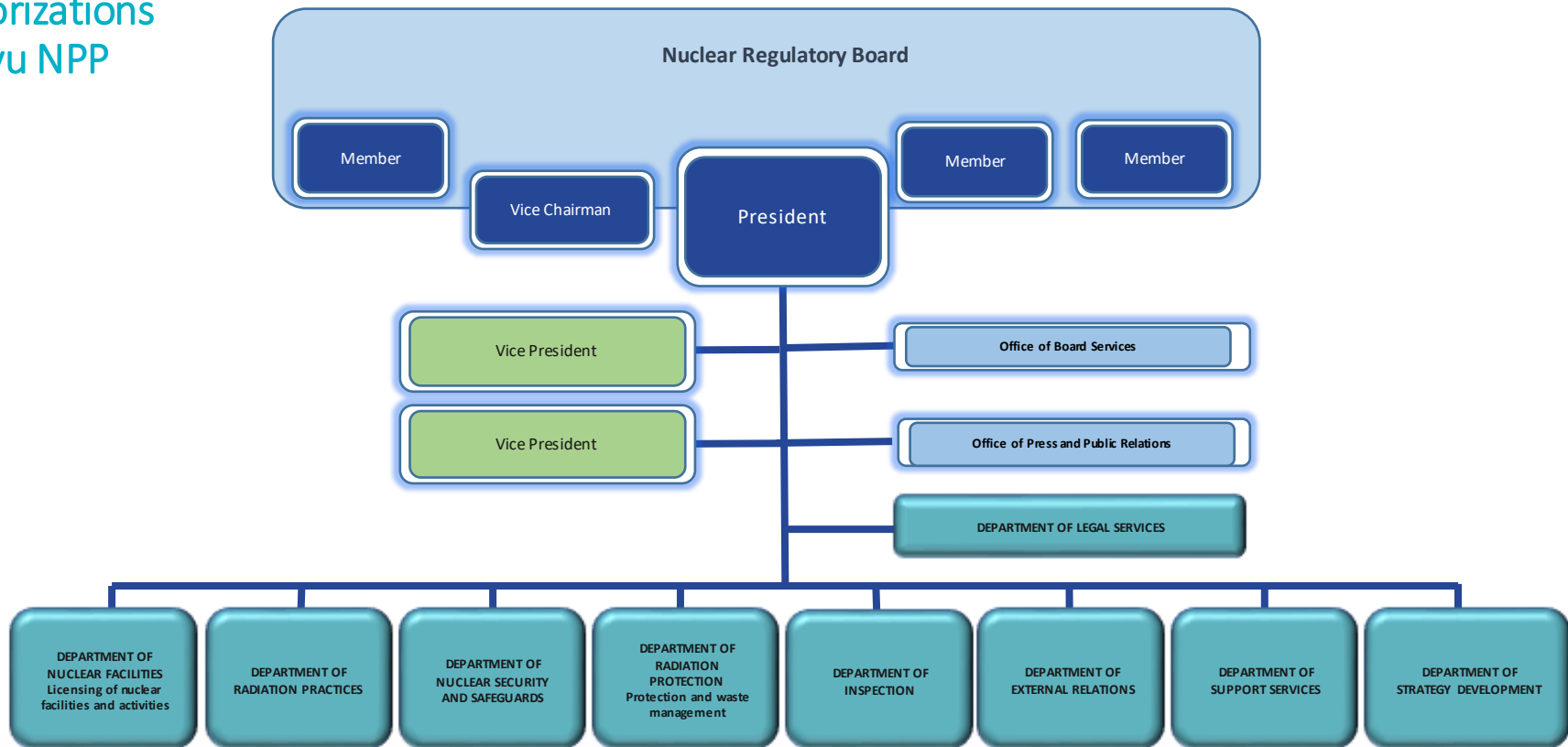
**CONTENTS**  
 Regulatory Framework  
 Safety Regime  
 Authorizations  
 Akkuyu NPP

## Main Regulators



*CONTENTS*  
Regulatory  
Framework  
Safety Regime  
Authorizations  
Akkuyu NPP

## *Nuclear Regulatory Authority (NDK)*



## CONTENTS

Regulatory  
Framework  
Safety Regime  
Authorizations  
Akkuyu NPP

### ***National – Regulations***

- Decree on licensing of nuclear facilities
- About 40 regulation 25 of which are related to the nuclear facilities and activities
  - Radiation protection, management system, safety of nuclear installations, staff authorizations for nuclear facilities, radioactive waste, safe transport of radioactive materials, etc.
- All regulations are under revision to ensure conformance with new regulatory infrastructure and framework – and to update in accordance with latest IAEA requirements
- Five Guidelines for the applicants
  - Format and content of authorization applications, specific (national) design criteria...
- About 25 internal procedures, including review and assessment guidelines and Project Management Plans for ongoing authorization projects

### ***Bilateral Peaceful Use***

- USA, Canada, France, South Korea, Russia, Argentine, Germany, China, Jordan, Japan

### ***Multilateral Safety Related***

- Nuclear Safety Convention
- Paris Convention on Liability
- Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
- Convention on Early Notification of a Nuclear Accident
- Joint Convention on Management of Spent Fuel and Management of Radioactive Waste (signed but not ratified yet – non technical reason)

### ***Multilateral Security Related***

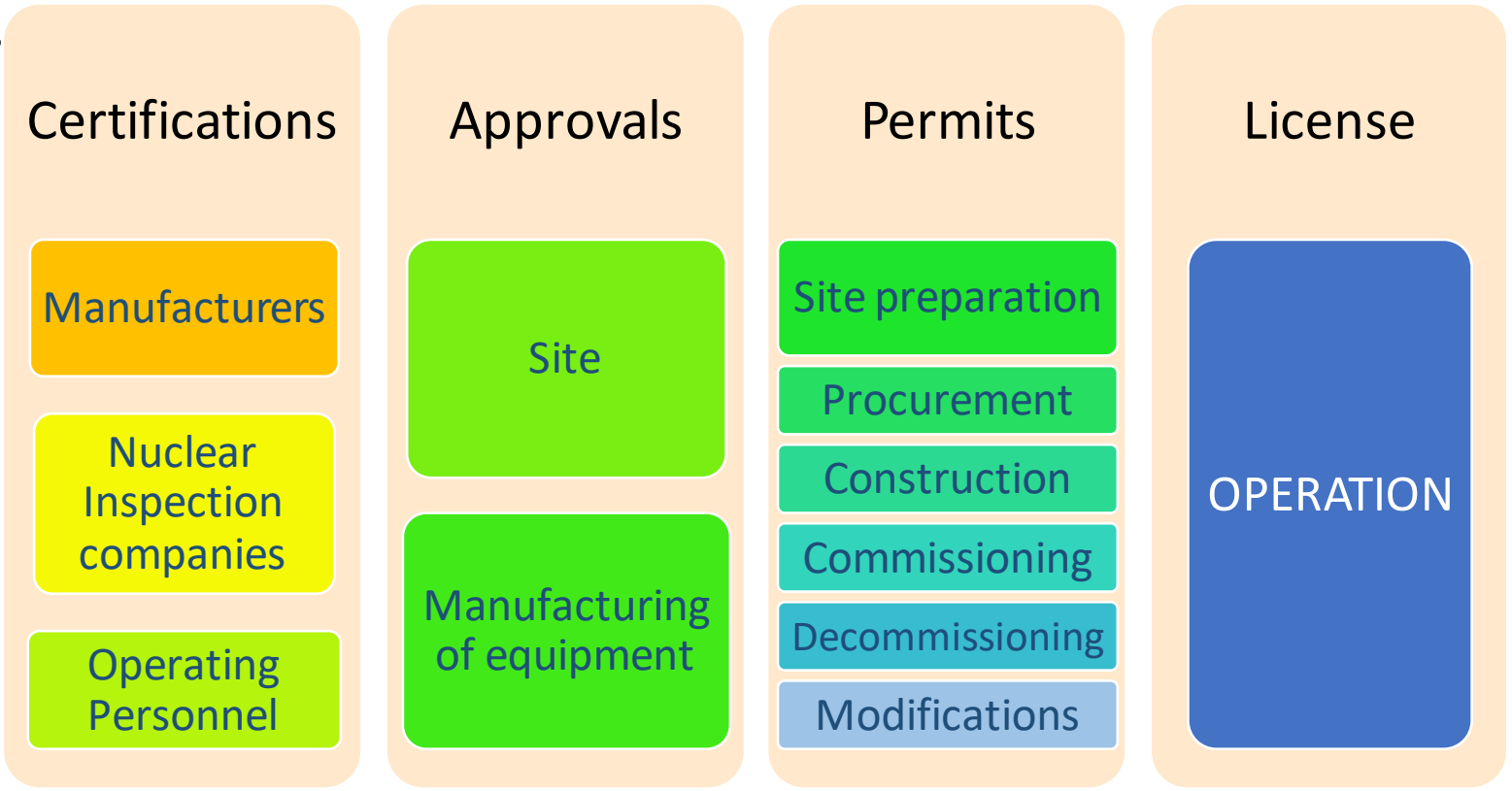
- Treaty on the Non-proliferation of Nuclear Weapons
- Convention on The Physical Protection of Nuclear Material (ratification of Amendment to CPPNM is in process)
- Comprehensive Nuclear Test Ban Treaty
- International Convention for the Suppression of Acts of Nuclear Terrorism

### ***Safeguards***

- Agreement Between the Government of the Republic of Turkey and the IAEA for the Application of Safeguards in Connection with NPT
- Protocol Additional to the Agreement Between the Government of the Republic of Turkey and the IAEA for the Application of Safeguards in Connection with NPT



## Authorizations



## ***Tools Used for Authorization of NPPs***

### **Licensing Basis**

Turkish legislation and regulations  
IAEA Safety Requirements  
Regulatory documents of vendor country  
**Russian regulations for Akkuyu  
NPP**  
Third party regulations  
If proposed by the applicant

### **Reference Plant**

At least licensed for construction  
**Novo Voronezh II for Akkuyu NPP**  
Reference documentation to be  
provided for preparatory work

### **External Technical Support**

UJV Rez a.s. (CZ) for review of PSAR Unit 1  
TUV SUD (D) for review of PSAR +  
verification calculations  
MATRISeB (TR) for seismic issues

### **Project Management Approach**

Issue tracking and Additional Information  
Requests  
Technical Working Groups for  
communicating with applicant  
**Akkuyu project team of about 50 experts**  
**1/3 senior, 1/3 experienced and**  
**1/3 newly hired**

## ***Akkuyu NPP Project – Milestones***

### **2010-2013**

IGA, Establishment of Akkuyu Nuclear  
JSC, BOO Model (Build, own, operate)  
Initiation of site investigations (update of a  
site license of 1976)  
Approval of updated site report

### **2014-2016**

Procurement permit  
Detailed site investigations  
Approval of EIA report  
Approval of site related design  
parameters

### **2017-2019**

March 2017: Application for construction of  
Akkuyu NPP Unit 1  
June 2017: Commencement of equipment  
manufacturing (Long lead items)  
March 2018: Application for construction of  
Akkuyu NPP Unit 2  
March 2018: Authorization of construction for  
Unit 1  
April 3, 2018: First concrete ceremony  
June 2018: Application for construction of Akkuyu  
NPP Unit 3

### **2019-2020**

August 2019: Authorization of  
construction for Unit 2  
May 2020: Application for construction  
of Akkuyu NPP Unit 4  
2020: Arrival of various equipment on  
site for Unit 1  
November 2020: Authorization of  
construction for Unit 3

*CONTENTS*

Regulatory

Framework

Safety Regime

Authorizations

Akkuyu NPP

THE END...

*Thanks for your patience!...*