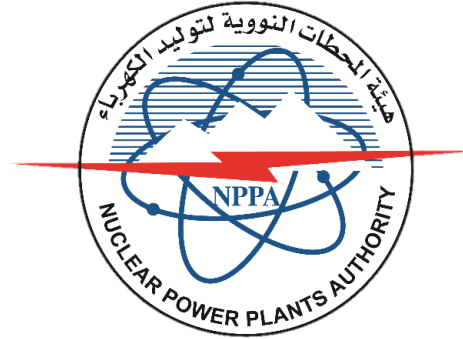




وزارة الكهرباء والطاقة المتجددة
Ministry of Electricity and Renewable Energy

Egypt's Nuclear Energy Program

Dr. Mohammed Dwiddar
Nuclear Power Plants Authority

Australian Nuclear Association Conference (ANA 2025)

10 Oct 2025



Presentation Outline

✦ Nuclear Power Program, Roadmap and Status

✦ Project Overview

✦ Licensing Status

✦ Construction Progress

✦ Equipment Manufacturing

✦ Capacity Building

✦ Preparation for Commissioning

✦ Operational Readiness



Nuclear Power Programme, Roadmap and Status

Why did Egypt decide to revive its civil nuclear power programme?

- Growing constraints on domestic energy resources, coupled with an increase in demand for electricity, has encouraged Egypt to diversify its energy mix.
- Nuclear presents an opportunity to both improve the Egyptian economy through localization of technology and job creation, as well as to ensure Egypt's future energy security through a reliable source of stable and affordable baseload electricity.
- To meet climate goals through the reduction of harmful greenhouse gas emissions (Egypt hosted COP27 in 2022).

Egypt's Nuclear Power Revival



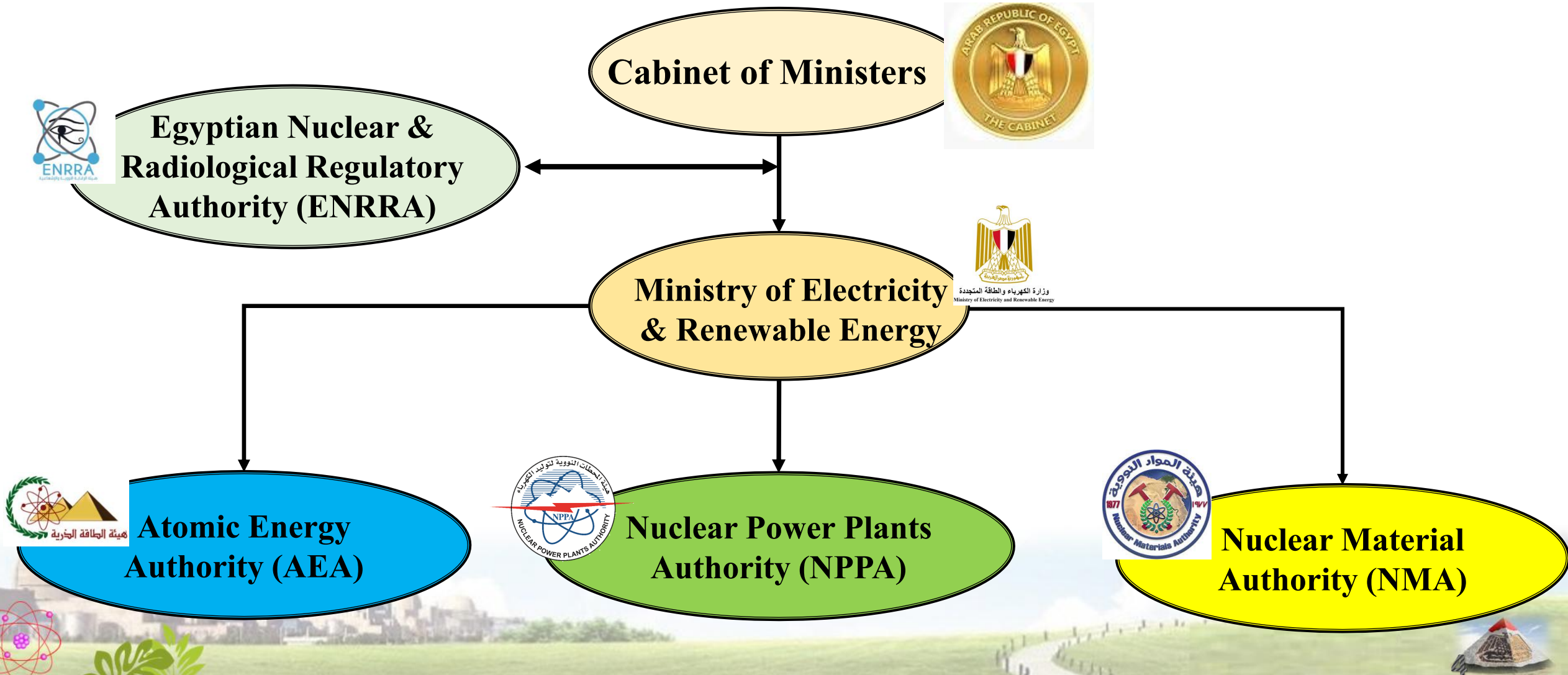


Nuclear Power Programme, Roadmap and Status



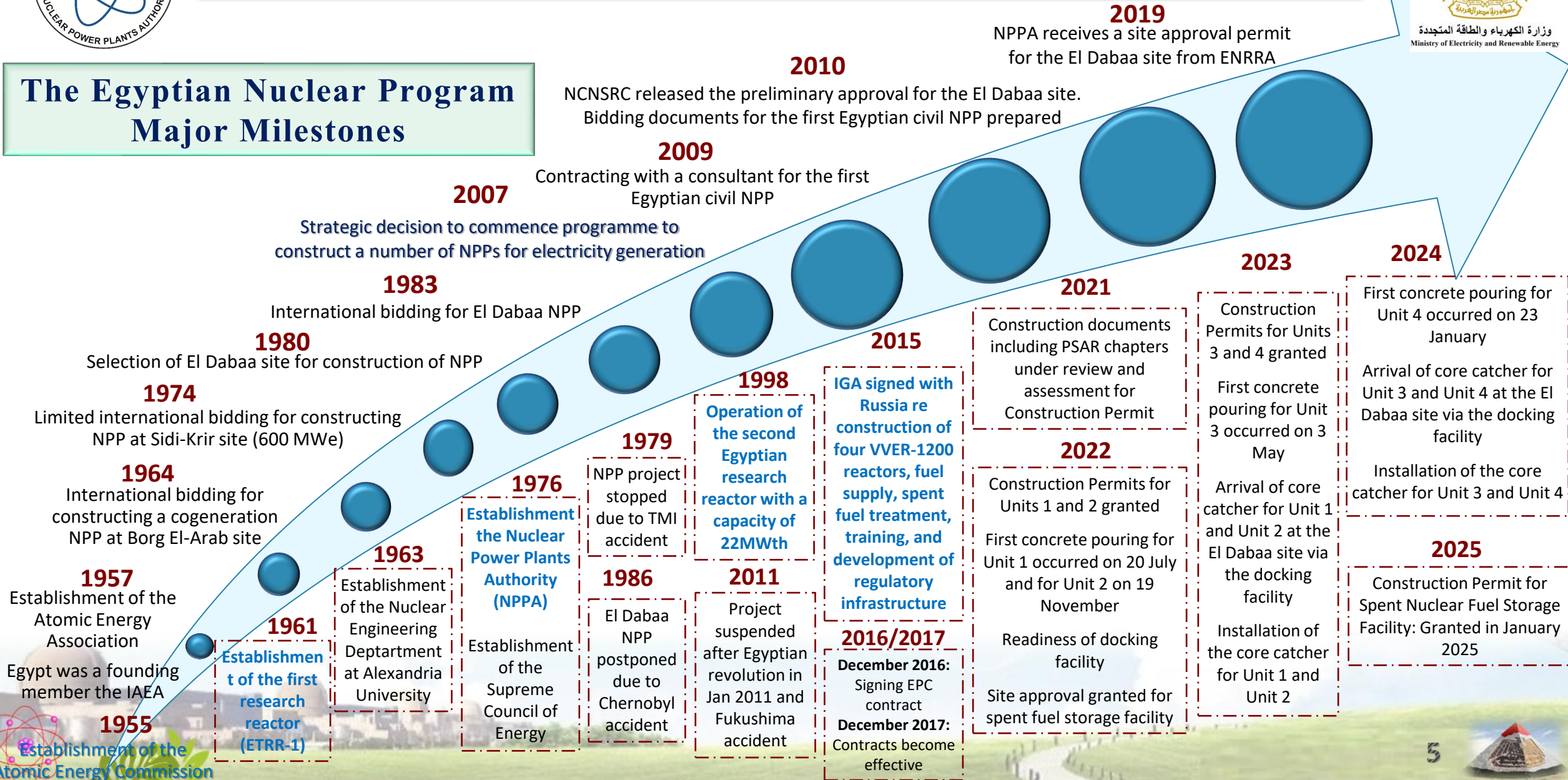
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Nuclear Sector in Egypt



Nuclear Power Programme, Roadmap and Status (Cont.)

The Egyptian Nuclear Program Major Milestones



Nuclear Power Programme, Roadmap and Status (Cont.)

Phases and Milestones of the First Nuclear Power Project

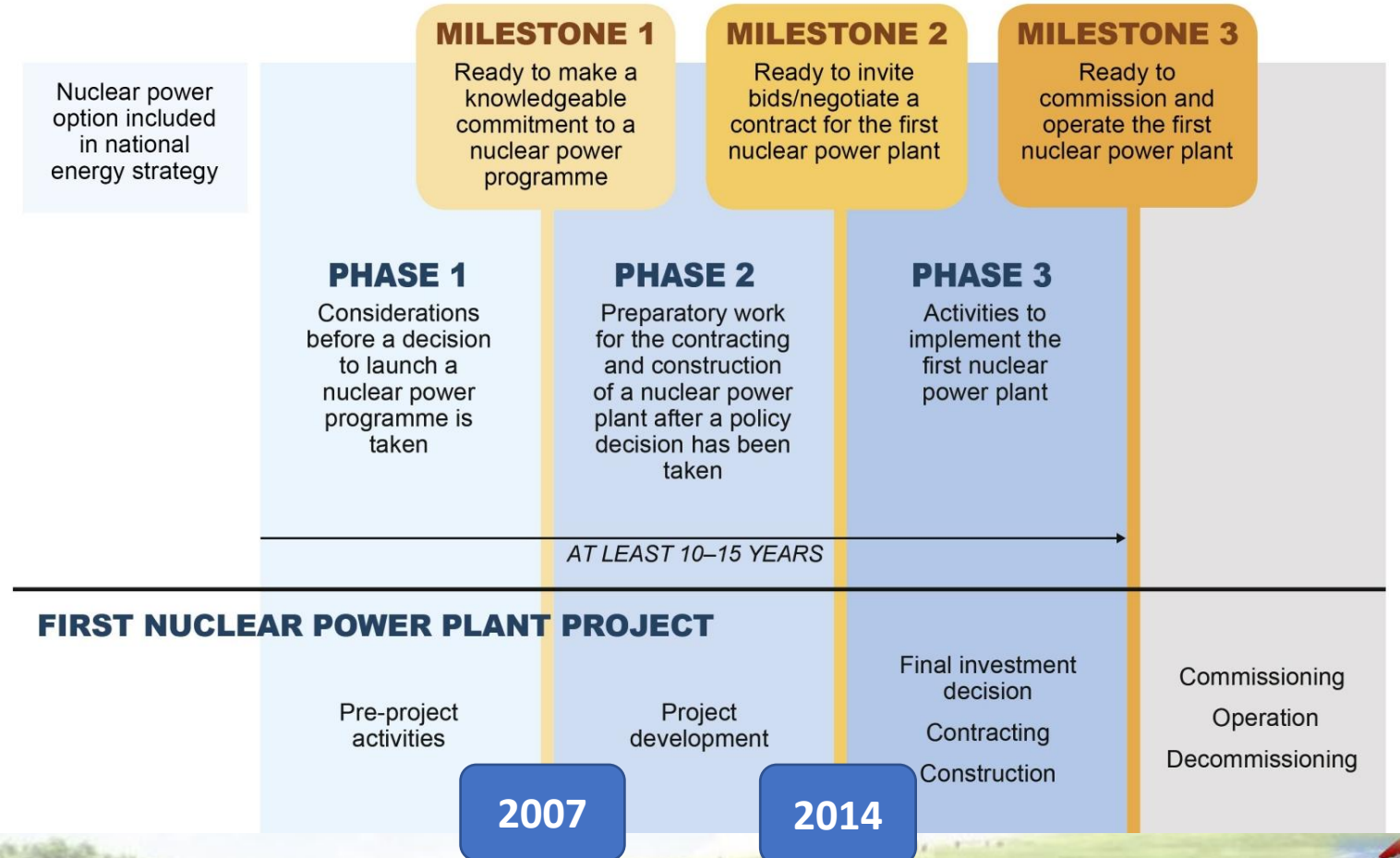
Milestone 1 - (2007)

Strategic decision has been taken to include nuclear power in Egypt's national energy strategy.

Milestone 2 – (2014)

Egypt completed project preparatory work and launched the El Dabaa Nuclear Power Plant Project.

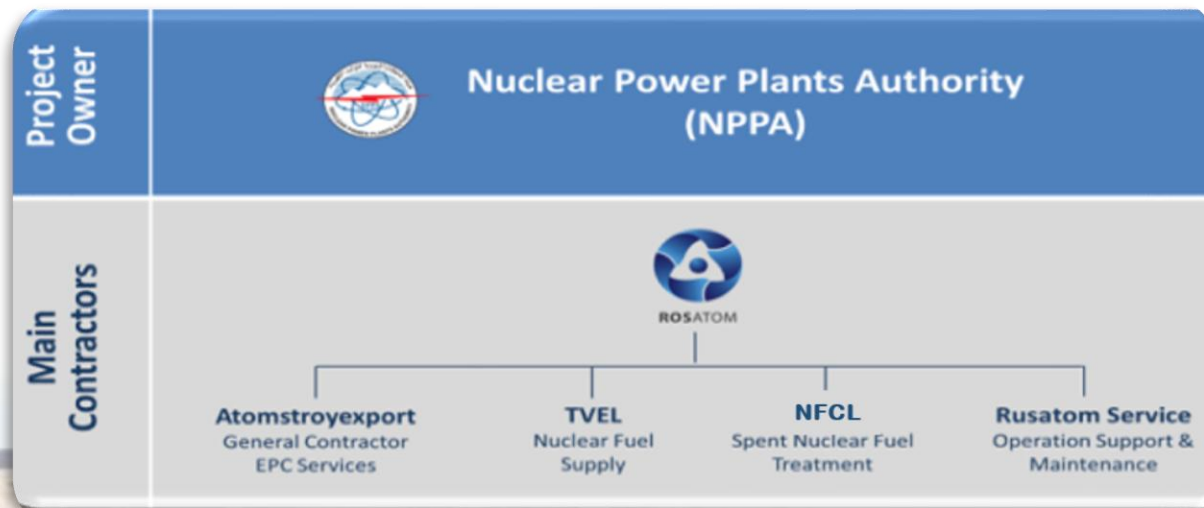
NUCLEAR POWER INFRASTRUCTURE DEVELOPMENT



Project Overview

• El Dabaa Nuclear Power Plant Project Contracts

- **November 2015:** Signing of Intergovernmental Agreement (IGA) & Finance IGA (CIGA) with Russian Federation.
- **December 2016:** Signing of EPC Contract.
- **December 2017:** The following signed contracts became effective:



Key Milestones in the El Dabaa Nuclear Power Plant Project



Project Overview

- **El Dabaa NPP Main Parameters**



El Dabaa NPP **consists of 4 Units** with **generation 3+ VVER-1200** reactors and is being built based on the terms and conditions of the EPC Contract



Location: Matrouh Governate, near El Dabaa

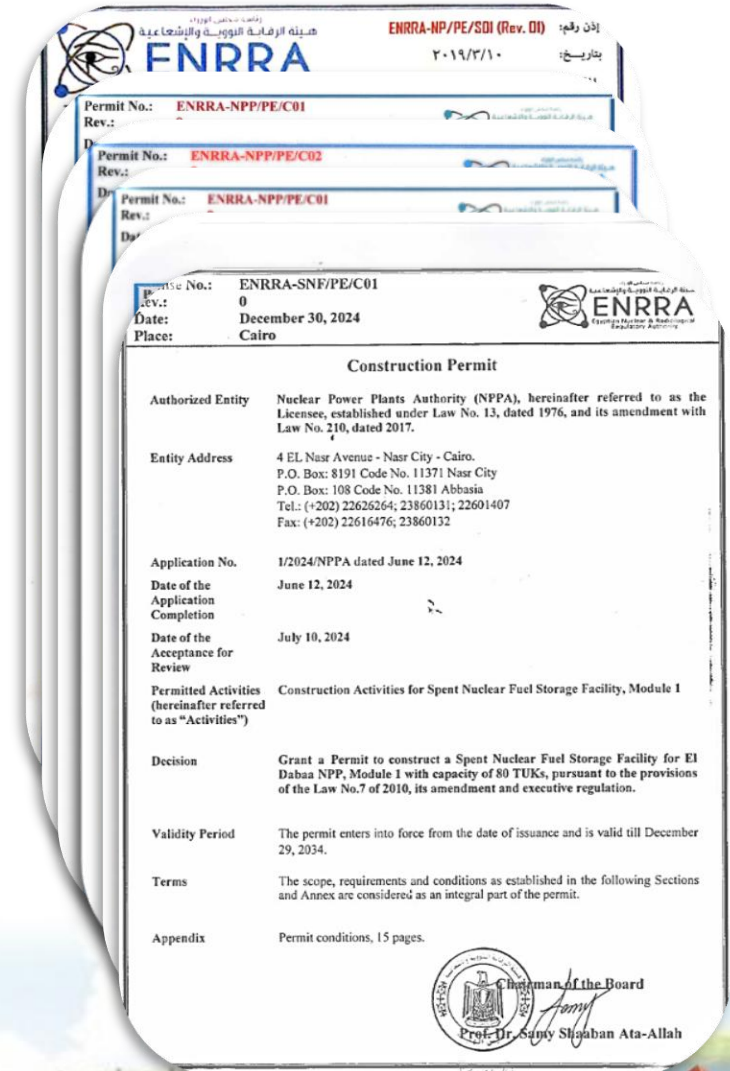
Owner/Operator: Nuclear Power Plants
Authority of the Arab Republic of Egypt



Licensing Status

Permits granted by ENRRA

- **Site Approval Permit for Units 1-4:** Granted in **March 2019**.
- **Site Approval Permit for Spent Nuclear Fuel Storage Facility:** Application submitted to ENRRA in **September 2020** and permit granted in **February 2022**.
- **Construction Permit for Units 1 and 2:** All necessary licensing documentation submitted to ENRRA in **June 2021**.
- **Construction Permit for Units 3 and 4:** All necessary licensing documentation submitted to ENRRA in **December 2021**.
- **Construction Permits for Units 1, 2, 3, and 4:** Granted on: **19 June 2022 (Unit 1)**; **30 October 2022 (Unit 2)**; **29 March 2023 (Unit 3)**; and **30 August 2023 (Unit 4)**.
- **Construction Permit for Spent Nuclear Fuel Storage Facility:** Granted on **January 2025**



ENRRA-HP/PE/SOI (Rev. 01) إن رقم: ٢٠١٩/٣/١٠ بتاريخ:

Permit No.: ENRRA-NPP/PE/C01
Rev.:
Date:
Place:

Permit No.: ENRRA-NPP/PE/C02
Rev.:
Date:
Place:

Permit No.: ENRRA-NPP/PE/C01
Rev.:
Date:
Place:

Permit No.: ENRRA-SNF/PE/C01
Rev.: 0
Date: December 30, 2024
Place: Cairo

Construction Permit

Authorized Entity Nuclear Power Plants Authority (NPPA), hereinafter referred to as the Licensee, established under Law No. 13, dated 1976, and its amendment with Law No. 210, dated 2017.

Entity Address 4 EL Nasr Avenue - Nasr City - Cairo.
P.O. Box: 8191 Code No. 11371 Nasr City
P.O. Box: 108 Code No. 11381 Abbasia
Tel.: (+202) 22626264; 23860131; 22601407
Fax: (+202) 22616476; 23860132

Application No. 1/2024/NPPA dated June 12, 2024
Date of the Application Completion June 12, 2024
Date of the Acceptance for Review July 10, 2024

Permitted Activities (hereinafter referred to as "Activities") Construction Activities for Spent Nuclear Fuel Storage Facility, Module 1

Decision Grant a Permit to construct a Spent Nuclear Fuel Storage Facility for El Dabaa NPP, Module 1 with capacity of 80 TUKs, pursuant to the provisions of the Law No.7 of 2010, its amendment and executive regulation.

Validity Period The permit enters into force from the date of issuance and is valid till December 29, 2034.

Terms The scope, requirements and conditions as established in the following Sections and Annex are considered as an integral part of the permit.

Appendix Permit conditions, 15 pages.

Chairman of the Board
Prof. Dr. Samy Shaban Ata-Allah

Construction Progress

Construction Progress

- Preparatory activities started in 2019, much advanced
- Core Catcher installed for all 4 Units.
- Balance of Plant/Pumping Stations/Discharge Channels are ongoing from foundation slabs to walls.
- Intake Channels: Excavation is finished and slope protection is in progress.
- Marine Structures and heavy roads: Completion of construction works and registration of the docking facility under the International Maritime Organization (IMO) as an international port.



Construction Progress

First concrete pouring for **Unit 1** occurred on 20 July 2022.



First concrete pouring for **Unit 2** occurred on 19 November 2022.



First concrete pouring for **Unit 3** occurred on 3 May 2023.

First concrete has been poured for all 4 NPP units



First concrete pouring for **Unit 4** occurred on 23 January 2024.



Construction Progress

Unit 1 Reactor Building:

- Foundation slab is completed
- Lower and upper foundation slabs are completed
- Core catcher is installed
- Completion of installation and concreting of the first tier of the inner containment
- Completion of installation of the second tier of the inner containment
- Construction of outer containment is in progress
- Construction of Reactor Cavity is ongoing

Unit 1 Turbine Building:

- Foundations concreting completed; walls concreting in progress



Construction Progress

Unit 2 Reactor Building:

- Foundation slab is completed
- Lower and upper foundation slabs are completed
- Core catcher is installed
- Completion of installation and concreting of the first and second tiers of the inner containment
- Completion of installation of the third tier of the inner containment
- Construction of outer containment is in progress
- Construction of Reactor Cavity is ongoing

Unit 2 Turbine Building:

- Foundations concreting completed; walls concreting in progress



Construction Progress

Unit 3 Reactor Building:

- Foundation slab is completed
- Lower foundation slabs is completed
- Core catcher is installed
- Construction of Reactor Cavity is ongoing

Unit 3 Turbine Building:

- Concreting of foundations and the reinforcement of walls are in progress



Construction Progress

Unit 4 Reactor Building:

- Foundation slab is completed
- Core catcher is installed

Unit 4 Turbine Building:

- Concreting of foundations and the reinforcement of walls are in progress



Equipment Manufacturing

- **Manufacturing of Long Lead Equipment** has commenced, including with respect to:
 - The Core Catcher for Units 1, 2, 3, and 4, which have already been delivered to the Site, were installed in **October 2023, November 2023, October 2024, and November 2024**, respectively.
 - Reactor Pressure Vessel for all Units.
 - Steam Generators for all Units.
 - Pressurizer for all Units.
 - Personnel Airlock for all Units.
 - Generators for all Units.
 - Steam Turbine for all Units.
 - Rack of fuel Assemblies and Rack of spent fuel pool for all Units.
 - Main Circulation components for all Units.



Equipment Manufacturing

Manufacturing of the Reactor Pressure Vessel for Unit 1 is completed in September 2025



Equipment Manufacturing

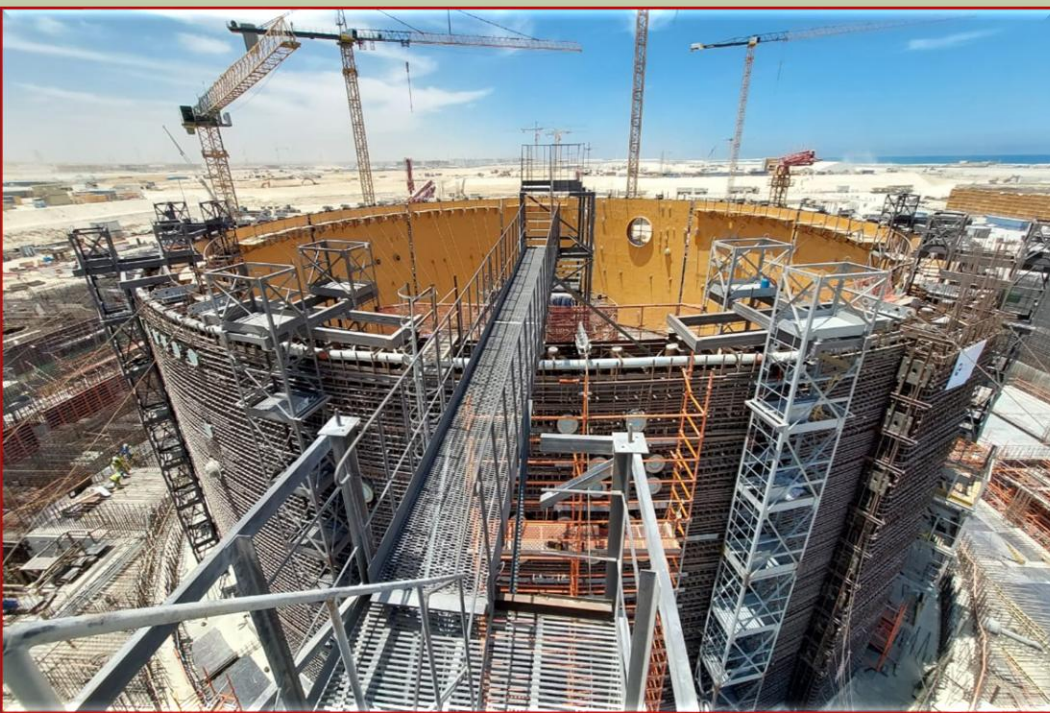
Reactor Pressure Vessel for Unit 1 is now on its way to El-Dabaa Site and planned to arrive in the last week of October



Equipment Manufacturing

**Planned to be installed in Unit 1
next November**

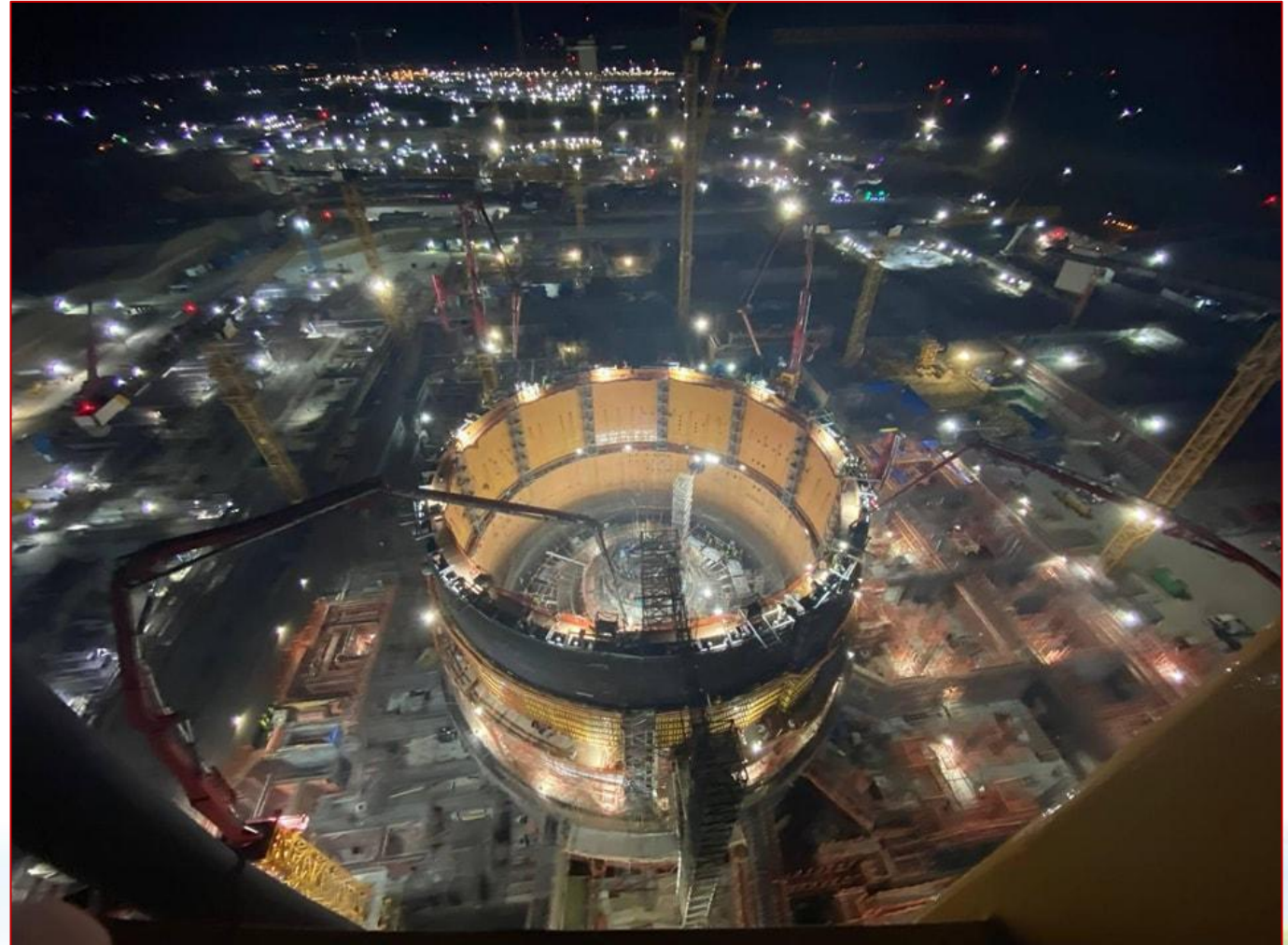




Status of Units 1, 2, 3 and 4



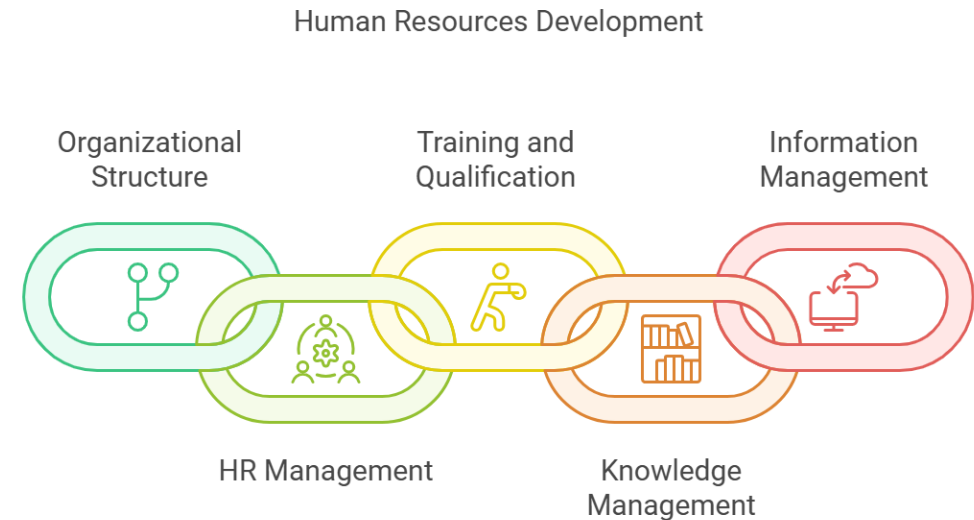
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Capacity Building

Human Resources Development in progress:

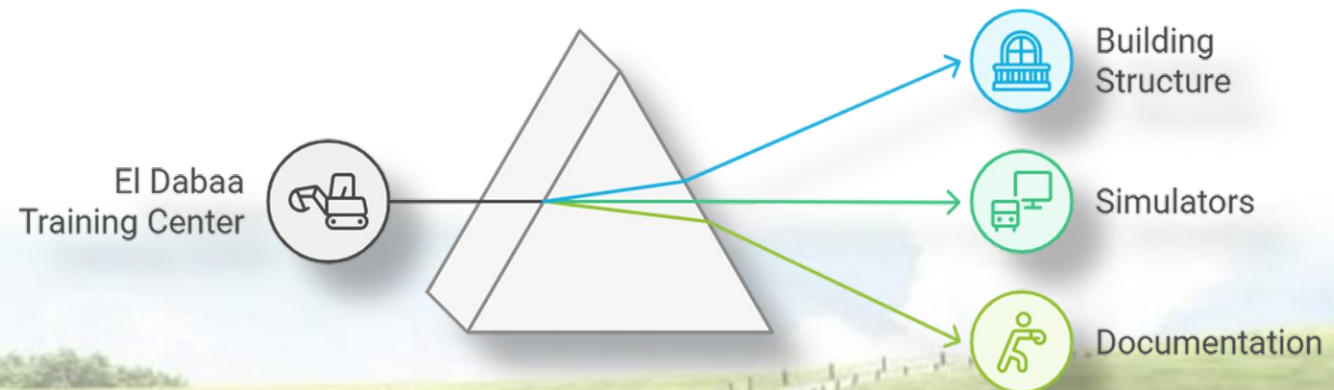
- Establishing of adequate organizational structure, including high hierarchical level of units for people management and personnel training
- Integrated Management System - development of subprocesses HR Management, Training and Qualification, Knowledge Management and Information Management



Capacity Building

Training Facilities

- An impressive building of the El Dabaa Training Center is under construction and expected to be in operation next year.
- Training Center will be provided with 2 sets of Full Scope Simulators.
- Training Center will be provided with full set of training and methodological documentation, including training management procedures, training programs, set of courses, etc.



Commissioning

The commissioning of El-Dabaa NPP is planned and will be implemented with consideration of the IAEA standards, guides and TECDOCs.

Status of Preparation for Commissioning:

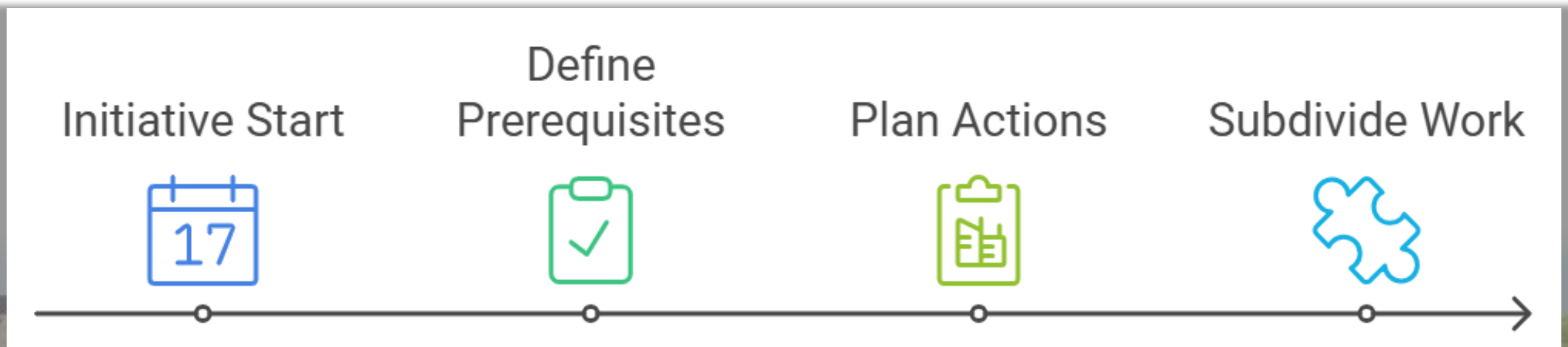
- Commissioning Schedule approved
- Development and approval of the PMM documents in progress
- Development and approval of the Commissioning organizational documentation (lists of documents, regulations, etc.)
- Development and approval of Detailed Commissioning Program then the Operational and Maintenance procedures (lists of O&M documents, procedures, etc.)



Operational Readiness

New NPPA Initiative to Prepare for Operations

- Formally started in April 2024.
- Systematic approach to define prerequisites (requirements) and plan actions for ensuring NPPA's readiness to operate the NPP.
- Work has been subdivided into functional areas to ensure the full scope is considered.





Thank You for your Attention

