

Nuclear Security Regulatory Authorization and Assessment Process for Barakah NPP in United Arab Emirates



Presenter: **Sara Al Saadi** – Nuclear Security Manager

Outline

Introduction

The Legislative and
Nuclear Security Regulatory Framework

The Security Assessment & Licensing of Barakah
NPP

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Source: <http://www.uae-mission.ae/mission/iaea/Content/1185>

Introduction

UAE government aspiration to exceed international standards in the conduct of its evaluation of nuclear power and in any potential deployment of nuclear facilities within the UAE.

“the UAE will establish a regime of physical protection, and commit to effectively protecting nuclear materials in domestic use as well as during international transport across its territory. Moreover, any offence involving theft, robbery, and smuggling of nuclear material or sabotage of nuclear facilities will be treated as criminal under UAE law and be subject to severe penalties”

Goal 1

- Complete operational transparency

Goal 2

- Highest standards of non-proliferation

Goal 3

- Highest standards of safety and security

Goal 4

- Close cooperation with the IAEA

Goal 5

- Partnership with governments and firms of responsible nations

Goal 6

- Long-term sustainability

The Legislative and Security Regulatory Framework

The legislative and Regulatory Framework



Federal Law by Decree No 6 of 2009 on
Peaceful Uses of Nuclear Energy

Regulation for Physical Protection of Nuclear
Material and Nuclear Facilities

Regulatory Guides for Implementing the Regulation

The Federal Decree No.6 of 2009 – Nuclear Law

The Law establishes Federal Authority for Nuclear Regulation (FANR) as the independent nuclear regulator for safety, nuclear security, radiation protection and safeguards in the UAE.

- FANR authorities include all matters relating to the regulation, licensing, inspection and oversight of the nuclear field.
- **Article (45) of the Law:** “... the physical protection of Nuclear Material and Facilities shall be insured according to the requirements of the international treaties and agreements entered into the state in this regard...”
- **Article (46) of the Law:** “... Licensees engaged in a Regulated Activity must prepare a Physical Protection plan and obtain the Authority’s approval. The Physical Protection plan must be submitted to the Authority together with the application for a License ...”

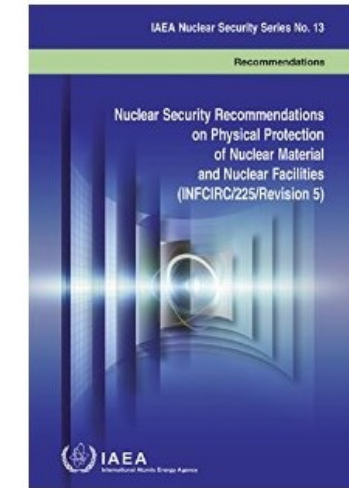


Source: <https://www.fanr.gov.ae>

The Nuclear Security Regulatory Framework

Regulation for Physical Protection of Nuclear Material and Nuclear Facilities - FANR-REG-08

- FANR-REG-08 is based on the revision 5 of INFCIRC/225 (IAEA Nuclear Security Series No. 13).
- FANR-REG-08 was issued in August 2010 and, after 5 years, revised version issued in August 2016.
- The licensee is required to submit a Physical Protection Plan (PPP) for Operation, which addresses the protection of nuclear materials and the nuclear facility against unauthorized removal of nuclear material and radiological sabotage up to and including the Design Basis Threat (DBT).



FANR
الهيئة الاتحادية للرقابة النووية
Federal Authority for Nuclear Regulation




Home » Rules & Regulations » Regulations & Guides

Regulations & Guides

The Regulations, Guides and Standards team establishes processes for the development of regulations and regulatory guides relating to the control and supervision of the nuclear sector.

FANR prepares, issues and implements regulations in line with the International Atomic Energy Agency (IAEA) Safety Standards. FANR regulations are imperative to ensure all aspects of safety. Regulatory guides are designed to provide licensees with guidelines on how to meet FANR requirements.

Regulated Activities

The Article 25 of the Federal Law by Decree No 6 of 2009, Concerning the Peaceful Uses of Nuclear Energy lists regulated activities that must be licensed by FANR. These activities form the basis for developing national regulations.

Board Resolutions
Regulations & Guides
Licenses & Regulatory Approvals
FANR Glossary
Exemptions
Training in Radiation Protection

7

The Nuclear Security Regulatory Framework

Regulatory Guides

Regulatory guides are issued to describe methods and/or criteria acceptable for meeting and implementing specific requirements in the regulations.



Identification
of Target Sets and Timeline
Analysis



Physical Security of
Nuclear Facilities



Physical Protection of
Transportation of Nuclear
Material

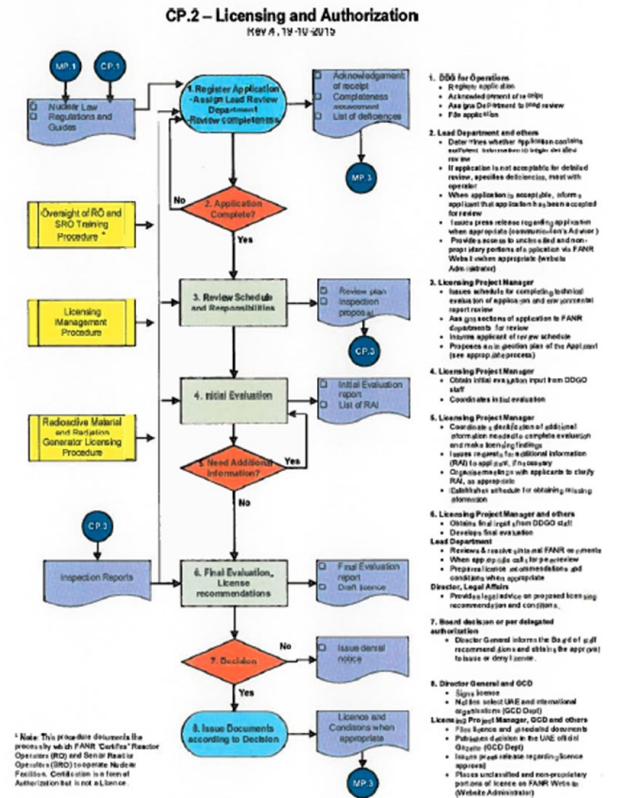


Contingency Plan for
Nuclear Facilities

The Security Assessment and Licensing of Barakah NPP

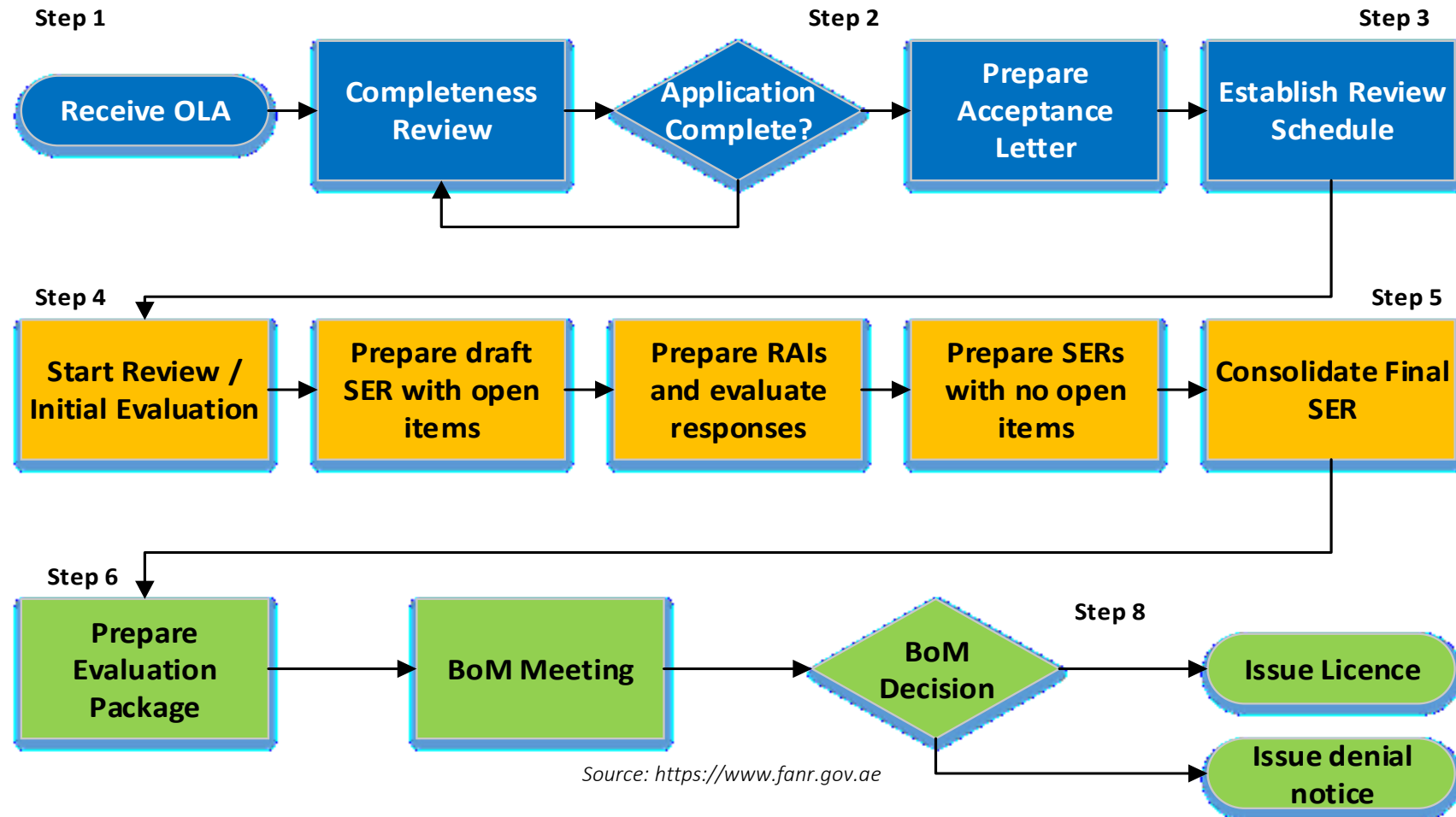
The General Assessment and Licensing of Barakah NPP

- FANR has established within its Integrated Management System (IMS) a process for establishing and revising regulations and guides that includes provisions for consultation with stakeholders and the public, and review and incorporation of their comments.
- FANR Core Process 2 “Licensing and Authorization.
- Procedure for an application for licence to construct or operate a nuclear facility (safety and security):
- Review and assessment
- Request for Additional Information (RAI)
- Safety/Security Assessment Report (SER)



Source: <https://www.fanr.gov.ae>

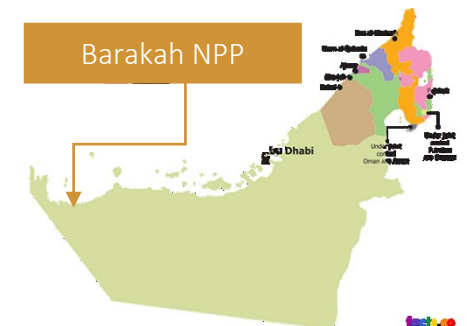
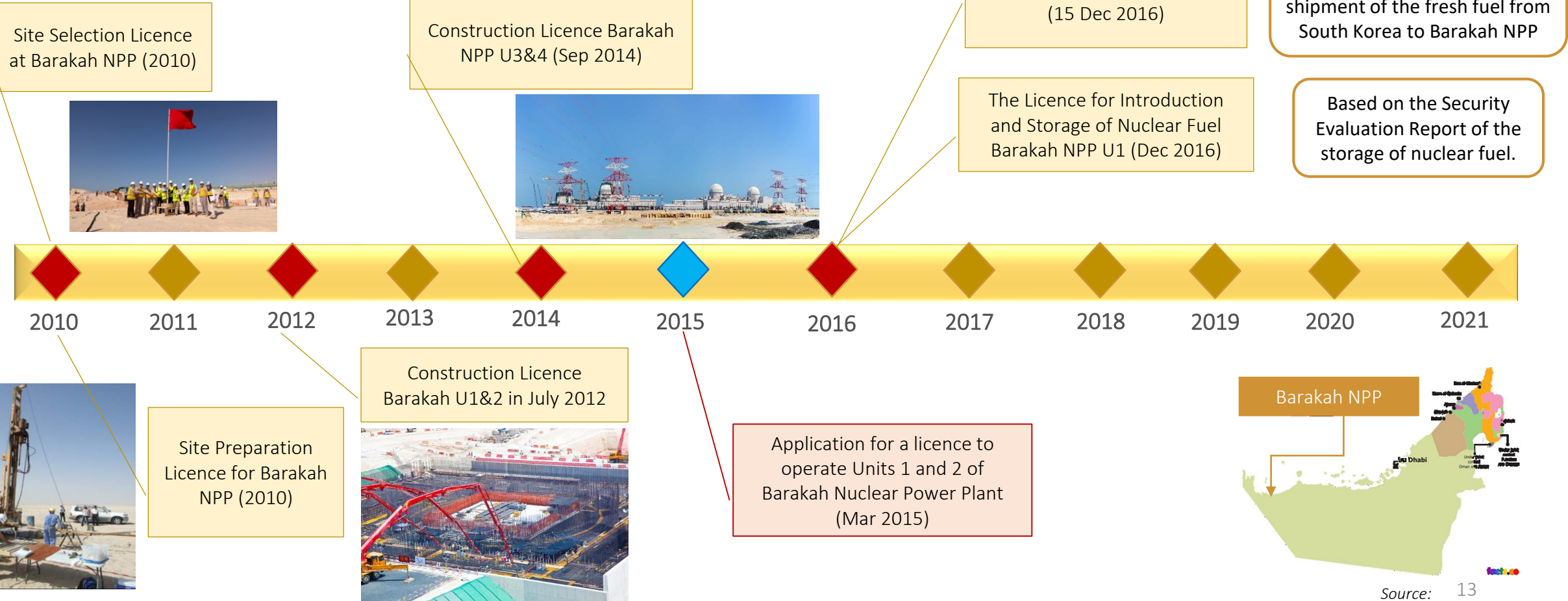
Licensing and Authorization process (CP2) of Barakah NPP



Review Instructions for Nuclear Security Assessments – Licensing and Authorization

- FANR-SCD-RI-001 for Physical Protection for Construction of Nuclear Power Plant and for Storage of Nuclear Material (Category I to III).
- FANR-SCD-RI-002 for the Physical Protection for Transportation of Nuclear Material (Category I to III).
- FANR-RI-020 on Physical Protection of Nuclear Power Plant.

The Status of Barakah NPP – 4 Units



Source: 13

<http://uaemap.facts.co/uaemapof/uaemap.php>

Current Status of the Security Assessment and Licensing of Barakah NPP

- A Workshop on Operating License Application Contents conducted on 26th January 2015.

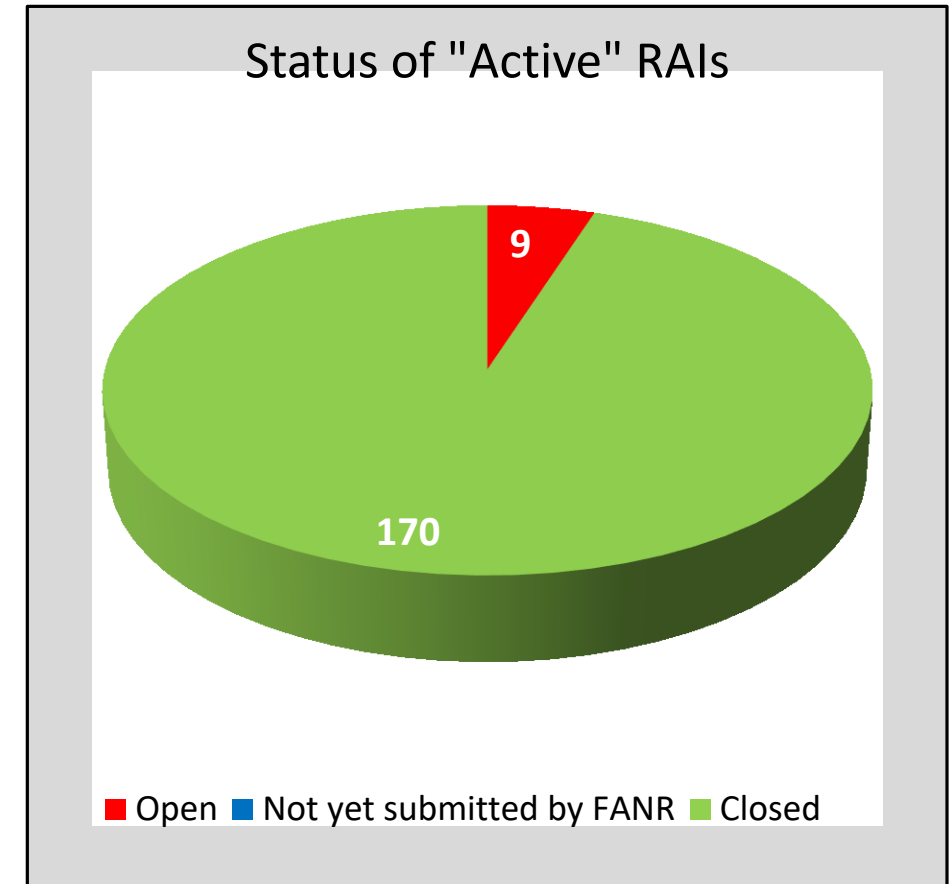
Outcomes of the OLA Workshop:

1. Structure and content of the Physical Protection Plan for Operations.
2. Structure and content of the Cyber Security Plan.
3. Structure and content of the Contingency Plan.
4. Content of the Target Set Analysis.
5. Content of the Summary of Vulnerability Assessment Results.

Current Status of the Security Assessment and Licensing of Barakah NPP

- Chapter 20 of the FSAR included a Physical Protection Plan for Operations.
- Operating License Application for Barakah Unit 1:

95% RAIs are closed for Nuclear Security.





Nuclear Security Inspections



Nuclear Security Inspections

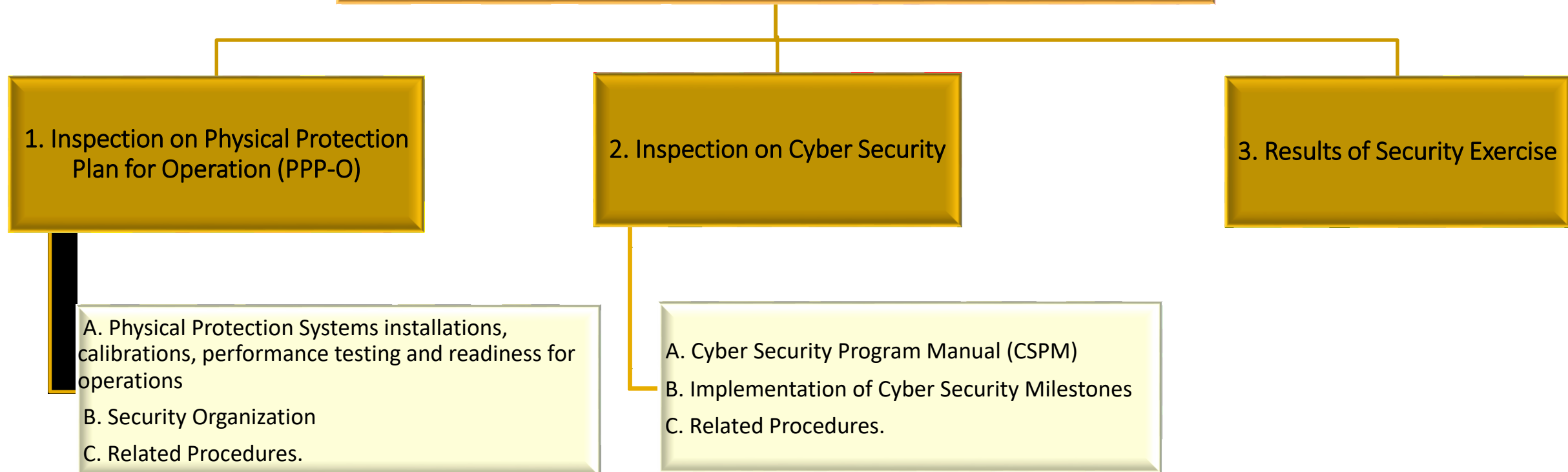
- Verify compliance with applicable requirements (The Law and Regulations) and conditions of the license
- Training and qualifying of FANR inspectors
- Following Generic Inspection Guidance (GIG) and specific Inspection Instructions
- Security inspections Instructions.
- Performed Nuclear Security Inspection:
 - Information protection, Physical Protection during construction and storage of fuel, cyber security, etc.



Source: <https://www.fanr.gov.ae>

Nuclear Security Readiness for Operations Inspection

NUCLEAR SECURITY READINESS FOR OPERATION INSPECTION



Conclusion

- FANR has established a strong and holistic legislative and regulatory framework on nuclear energy and, based on these Law and regulations and its management system, FANR reviewed and assessed the application of a licence for Barakah Nuclear Power Plant.
- The review of the nuclear security of the operation of Unit 1 of Barakah Nuclear Power Plant is under the way by FANR.



Source: <https://www.fanr.gov.ae>

Thank you

