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**NPP LICENSING**

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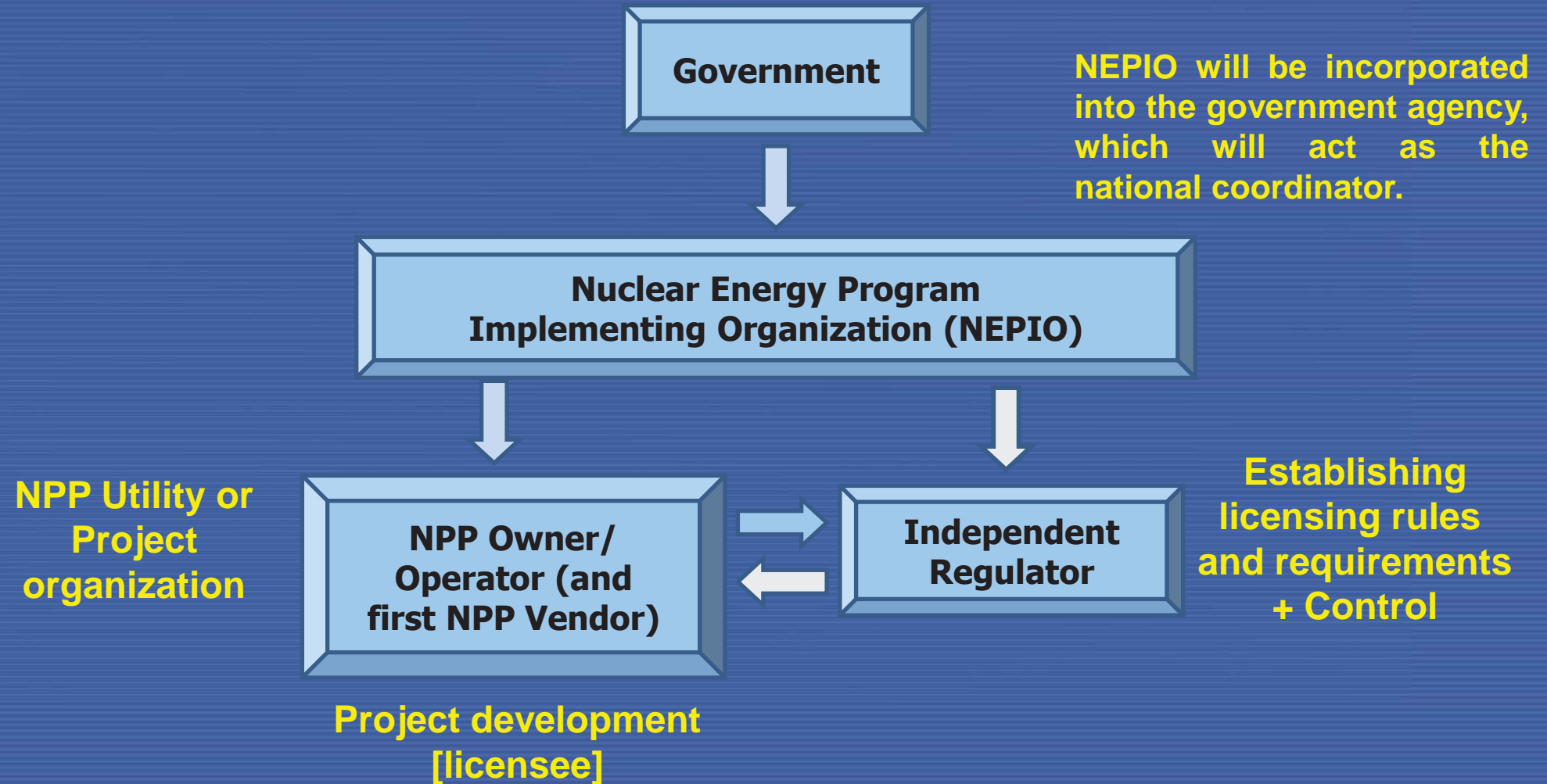
# NPP LICENSING

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# MAIN PLAYERS IN NUCLEAR POWER



# DEFINITIONS

- **Licence** is a legal document issued by the Regulatory Body and the final result of evaluation of the application, gives the applicant the formal authorization to proceed within the limits set by the conditions included in the licence
- **Licensing process** used for nuclear installations includes all licensing and/or authorization processes for a nuclear installation and its activities.
- **Licensee** is the holder (person or organization) of a current and valid licence and having overall responsibility for a nuclear installation and its activities.

**Licence = Authorization = Permit = Certificate**

# WHY LICENSING PROCESS FOR NPP?

## IAEA Fundamental Safety Objective:

- ✓ To protect people and the environment from harmful effects of ionizing radiation
- ✓ Responsibility for safety rests with the NPP Owner/Operator. All reasonably practicable measures to prevent accidents and to mitigate their consequences shall be implemented
- ✓ Government (independent Regulatory Body) is responsible to ensure that radiation risks are properly controlled by the NPP Owner/Operator

# LICENSING BASIC PRINCIPLES

- Licensing process must be well-defined, clear, transparent and traceable.
- Two major players:
  - 1. Regulatory Body:**
    - Defines the safety criteria, requirements, guidelines and documents to be provided by the applicant (NPP operating organization).
    - Establish a mechanism to solve safety issues with the applicant.
  - 2. NPP Operating Organization:**
    - Prepare and submit the required documentation.
    - Be prepared to respond to the requests of the regulatory body.
- The public should be given an opportunity to provide their views during certain steps of the licensing process.

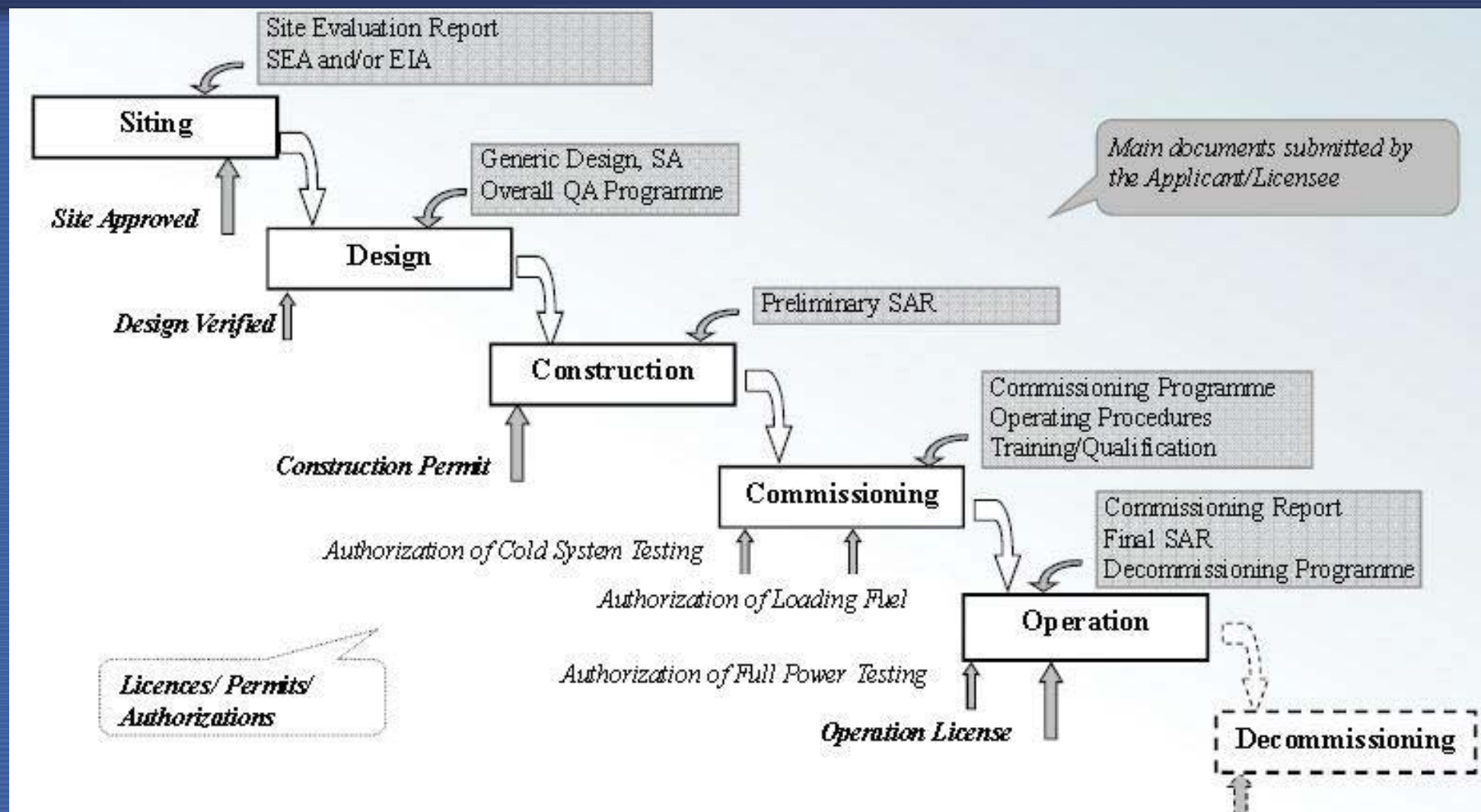
# PREREQUISITE FOR NPP LICENSING

Nuclear Safety requirements in place:

- ✓ Legislation (acts, ordinances, decrees)
- ✓ Regulations
- ✓ Guides
- ✓ International and industrial standards



# LICENSING PROCESS





# NPP OWNER (LICESEE) RESPONSIBILITIES

## Licensing Application:

- ✓ Demonstrates the safety of the facility or proposed activity
- ✓ Information is accurate and sufficient to enable verification of compliance with regulatory requirements
- ✓ Technical solutions, in particular any new ones, have been proven or qualified by experience or testing or both, and are capable of achieving the required level of safety

# REGULATORY BODY RESPONSIBILITIES

1. Establish, promote or adopt **regulations and guides**.
2. **Review and assess** the operator's submissions (prior to authorization, periodically).
3. Issues, amend, suspend or revoke **authorization** with conditions.
4. Perform regulatory **inspections**.
5. Require **corrective actions** if unsafe conditions occurred.
6. Take **enforcement actions** if safety conditions were violated.

# ACTIVITIES OF THE REGULATORY BODY (1)

## **Review and assessment:**

- ✓ Principles and criteria being used should be available to the operators.
- ✓ Information - complete, accurate, verifiable.
- ✓ Program of review and assessment.
- ✓ Periodic safety re-assessment.

# ACTIVITIES OF THE REGULATORY BODY (2)

## **Inspection and enforcement:**

- ✓ Cover all areas of regulatory responsibility:
  - Facilities, equipment
  - Documents
  - Persons
- ✓ Timely identification and correction of deficiencies/deviations.
- ✓ Distribution of lessons learned – feedback process.

# ACTIVITIES OF THE REGULATORY BODY (3)

## Authorization:

- ✓ Safety has to be demonstrated.
- ✓ Graded approach (design registration, multi-stage authorization process).
- ✓ Guidance on format and content of the documents (PSAR, FSAR, etc.).
- ✓ Basis for decision has to be available.



# CONTENTS OF A LICENCE (1)

## Includes:

- ✓ A sufficiently detailed description of the nuclear installation, its location and its activities, including a description of the site boundaries
- ✓ The maximum allowable inventories of radiation sources covered by authorizations;
- ✓ The obligation of the licensee for notifying the Regulatory Body of any modifications that are significant to safety;
- ✓ Any limits on operation and use (such as dose and discharge limits)
- ✓ The requirements for reporting events and incidents at the nuclear installation;
- ✓ The requirements for providing routine reports to the Regulatory Body

## CONTENTS OF A LICENCE (2)

- ✓ The requirements for retention of records by the person or organization responsible for the nuclear installation and its activities, including the time periods for which records should be retained
- ✓ The requirements for arrangements for emergency preparedness
- ✓ The means and procedures for changing any information stated in the licence
- ✓ The documentary basis: the documents in support of the application and those prepared and/or used by the Regulatory Body in the review and assessment process, which together form the basis for issuing the licence;

The licence may refer to the  
**“Operational Limits and Conditions”**



# SUPPORT DOCUMENTATION FOR LICENSING (1)

- ✓ Plan for the project, including phases and anticipated schedule
- ✓ Site Evaluation Report, which may include a report on the Environmental Impact Assessment including the environmental radiation monitoring
- ✓ Reports on the use of cooling sources and discharges to the environment
- ✓ Public inquiry strategy, plans and reports according to each State's legal framework and practices
- ✓ Report on the management and organization of the design/engineering and construction organizations, including responsibilities and a list of contractors/sub-contractors
- ✓ Report on the acquisition/procurement program.
- ✓ List of the structures, systems and components important to safety (safety related)

# SUPPORT DOCUMENTATION FOR LICENSING (2)

- ✓ Preliminary Safety Analysis Report (PSAR) before to begin construction
- ✓ Final Safety Analyses Report (FSAR) before to start operation
- ✓ Probabilistic Safety Assessment (PSA)
- ✓ Technical design/engineering documents
- ✓ Physical protection/security plans, which are prepared using design related threat analyses
- ✓ Fire protection plans
- ✓ Plans for accounting and control of nuclear material (safeguards)
- ✓ Operating manuals and procedures/instructions
- ✓ Training and qualification plans for operation personnel
- ✓ Commissioning program and commissioning reports
- ✓ Emergency plan and procedures

# WHAT IS AN “INTELLIGENT NPP CUSTOMER”?

An NPP **intelligent customer** should:

- ✓ Understand nuclear safety requirements of all activities
- ✓ Have capability to set, interpret and ensure achievement of safety standards
- ✓ Take responsibility for managing NPP safe operation



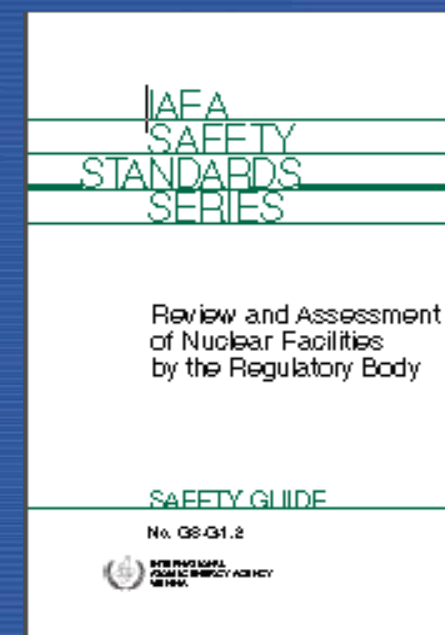
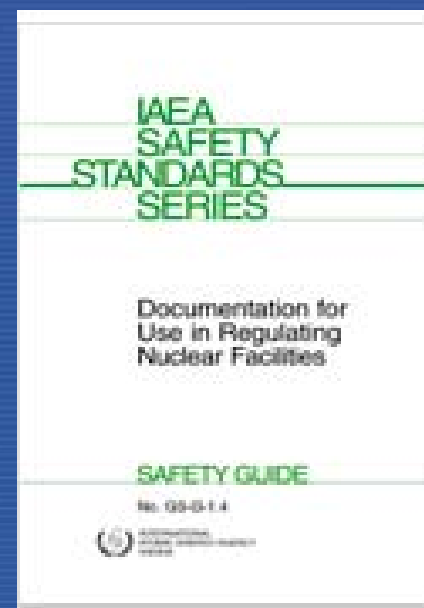
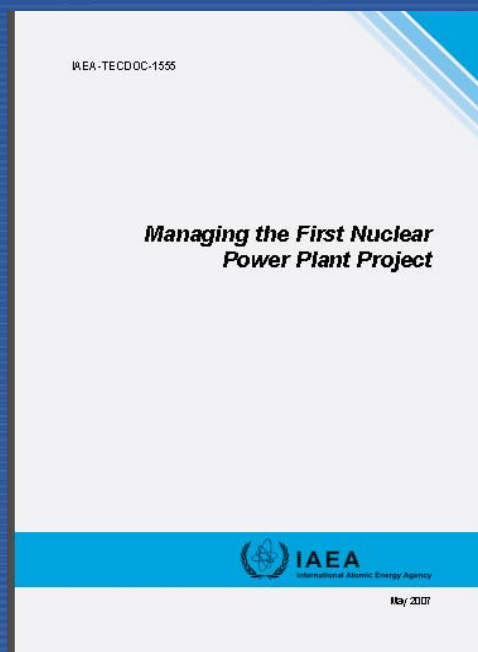
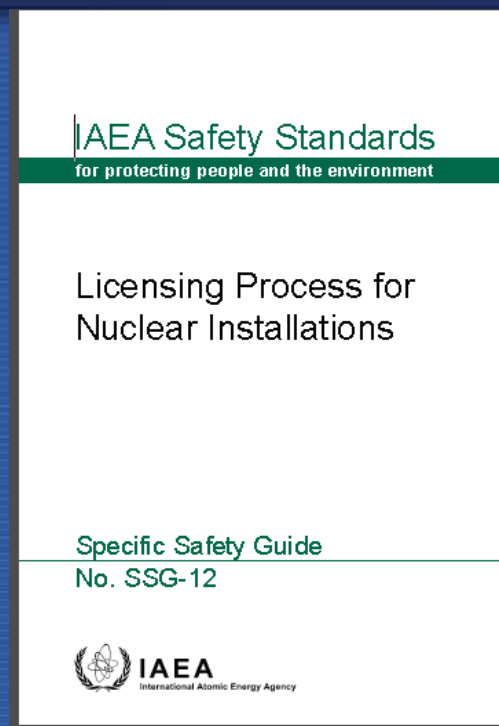
# REGULATORY PROCESS

Country	Licence Period	Measures of Control
Belgium, Czech Republic, France, Germany, Hungary, Japan, Netherlands, Sweden, UK	Lifetime	<ul style="list-style-type: none"> <li>• Continuous monitoring and safety reviews through inspection program</li> </ul>
Switzerland	Lifetime ex. 2 NPPs with fixed terms	<ul style="list-style-type: none"> <li>• Comprehensive safety reviews</li> </ul>
Finland, Mexico, USA	Fixed terms (10–40 yrs)	<ul style="list-style-type: none"> <li>• Periodic Safety Reviews (PSRs) every 10 years for NPPs</li> </ul>
Spain	Variable (5–10 yrs)	
Canada [before 2002]	Fixed term (2 yrs)	Same but no PSRs

# IAEA ASSISTANCE: WORKSHOPS

<b>Suggested sequence</b>	<b>When is recommended</b>	<b>Subject of WS</b>
<b>7</b>	<b>Beginning of Phase 2</b>	<b>Interfaces with NPP Owner/Operator in a BOO/BOOT approach</b>
<b>8</b>	<b>Middle of Phase 2</b>	<b>Stakeholder involvement</b>
<b>9</b>	<b>Middle of Phase 2</b>	<b>NPP bidding process, including BIS preparation</b>
<b>10</b>	<b>Late in Phase 2</b>	<b>NPP Project Management</b>
<b>11</b>	<b>Late in Phase 2 Beginning of Phase 3</b>	<b>Interfaces of NPP Owner/Operator with Regulatory Bodies for the first NPP licensing</b>
<b>12</b>	<b>Late in Phase 2 Beginning of Phase 3</b>	<b>Management of Construction of the NPP Project</b>
<b>13</b>	<b>Beginning of Phase 3</b>	<b>Management of Commissioning of the NPP Project</b>
<b>14</b>	<b>Beginning of Phase 3</b>	<b>Emergency Preparedness and interfaces with stakeholders</b>

# IAEA SPECIFIC GUIDANCES



# CONCLUSION

- ✓ NPP Owner/Operator has the ultimate responsibility for safety and safe operation of an NPP.
- ✓ By licensing process NPP Owner/Operator demonstrates to the Regulatory Body that his responsibility has been, is, and will continue to be discharged.
- ✓ Licensing process is a continuing one which does not end even with the granting of the full operating licence.
- ✓ Newcomers countries: mandatory to have trained and knowledgeable Regulatory Body, starting with Phase 2 of the program.



# Thank you!

