

Review and Assessment Process - Application in Korea -

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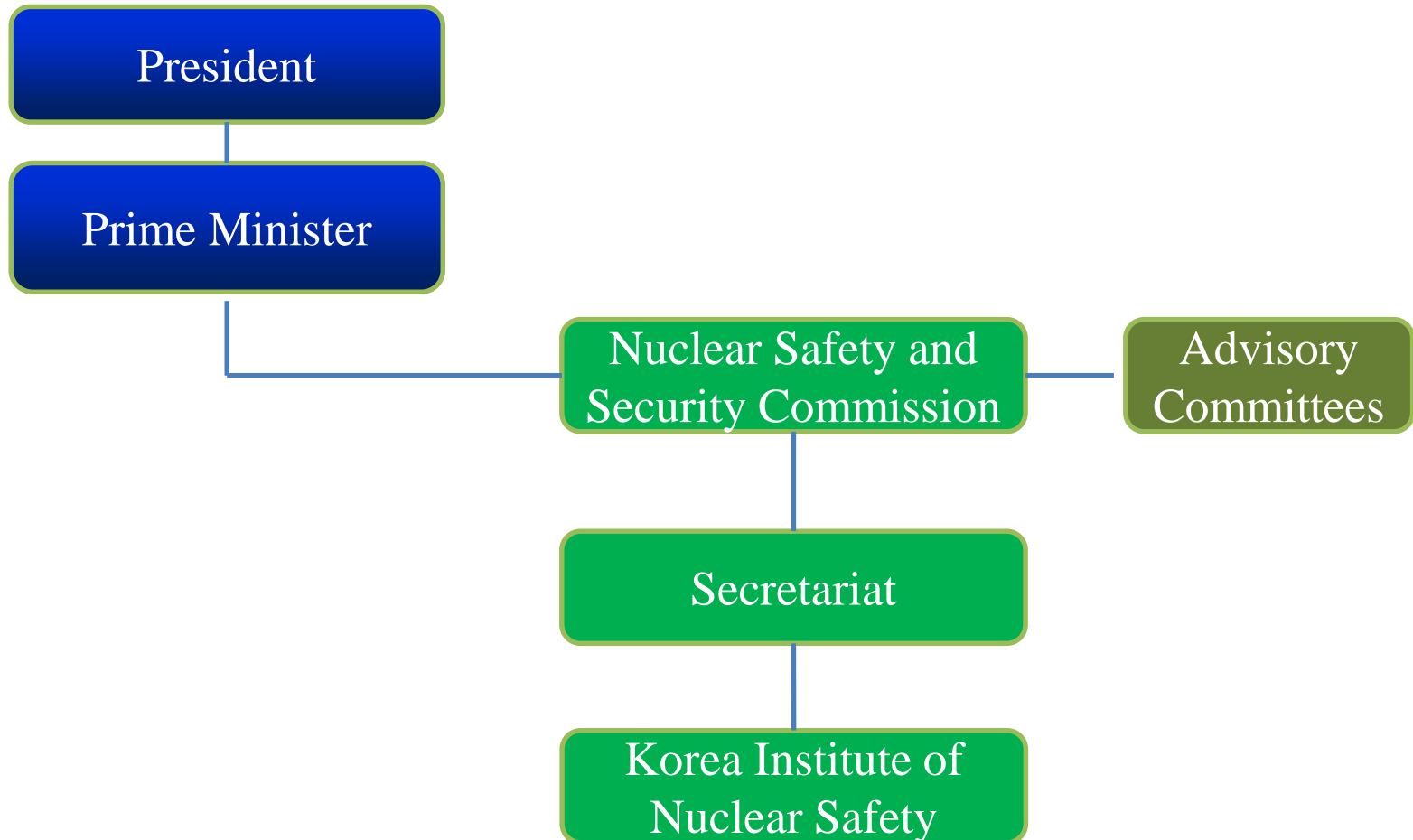
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 - (I.b) Management system of KINS
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 - (II.c) sample procedure for safety review
- **Summary**

Part I. Introduction

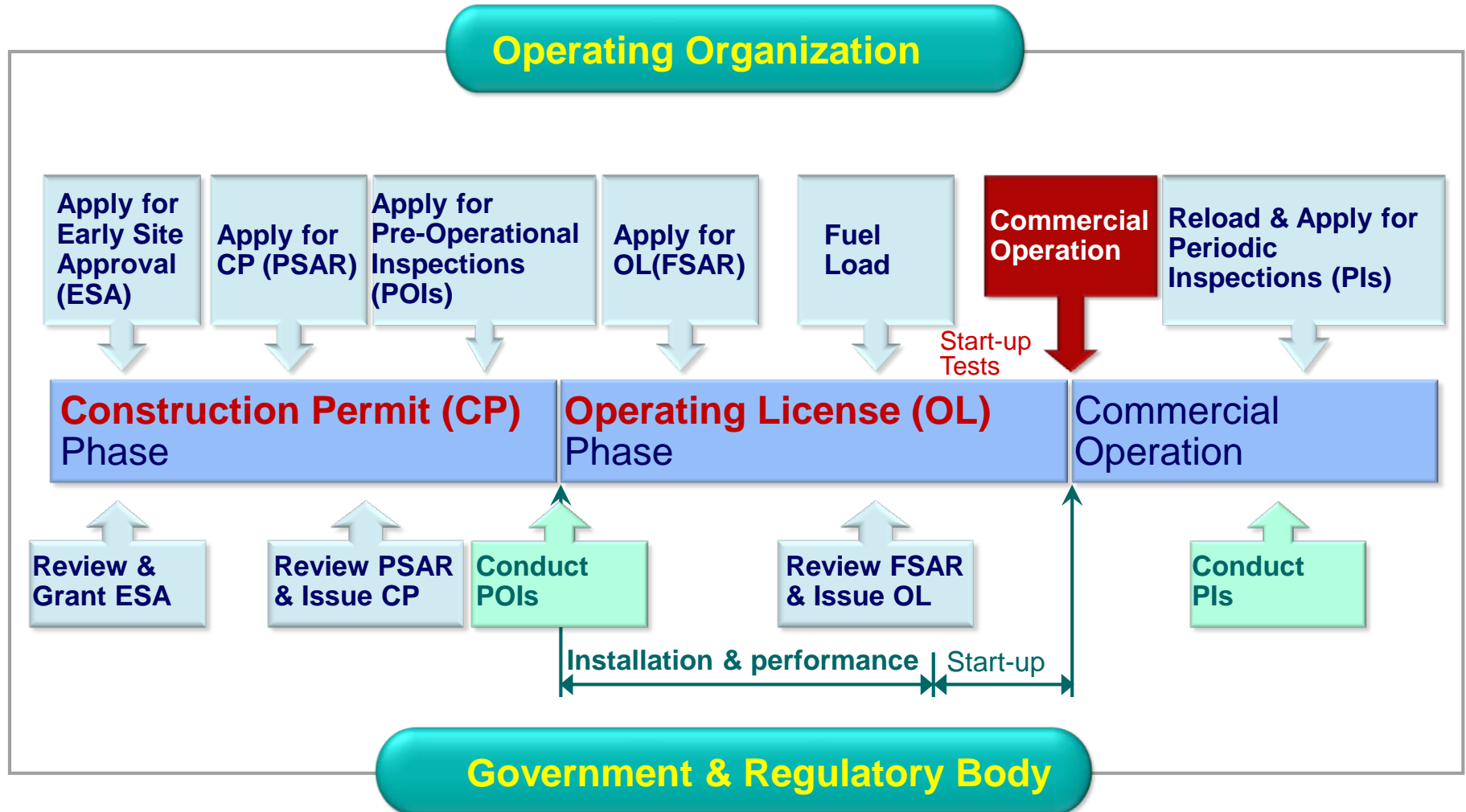
(I.a) Authorization Process in Korea

- **Organizational framework for nuclear regulation**



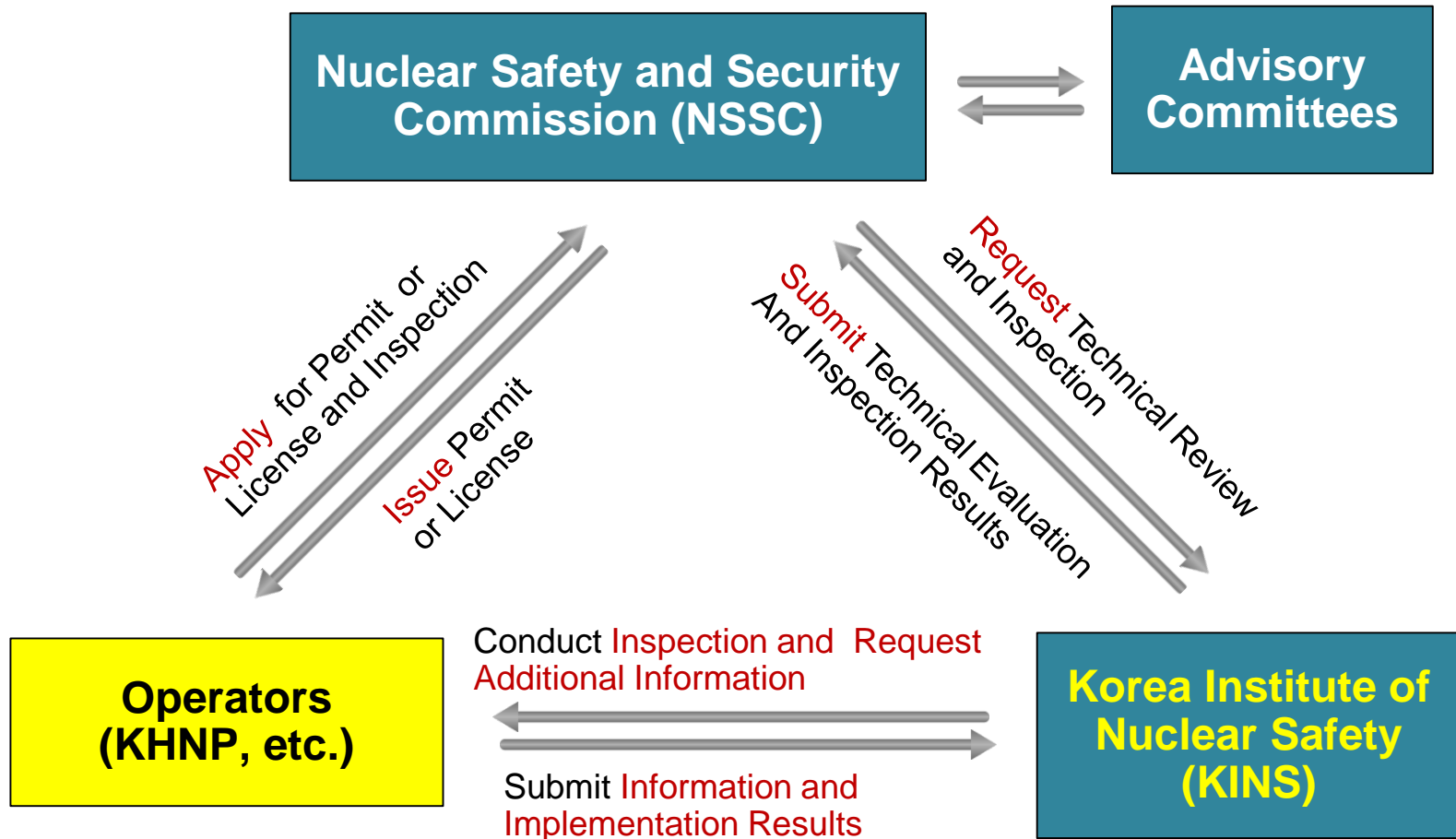
(I.a) Authorization Process in Korea

- **Two-step** licensing process for nuclear power plants



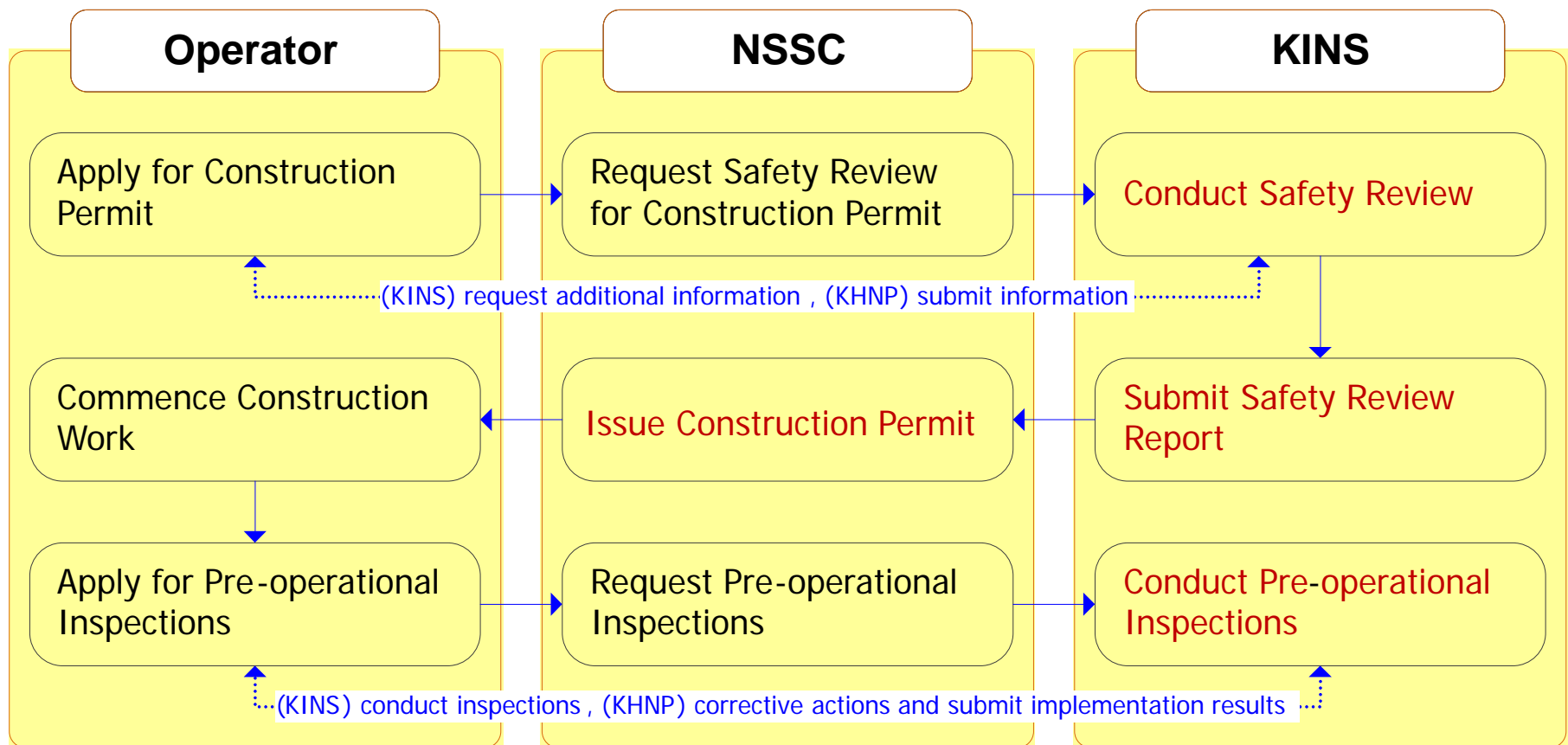
(I.a) Authorization Process in Korea

- Regulatory activity interactions among organizations



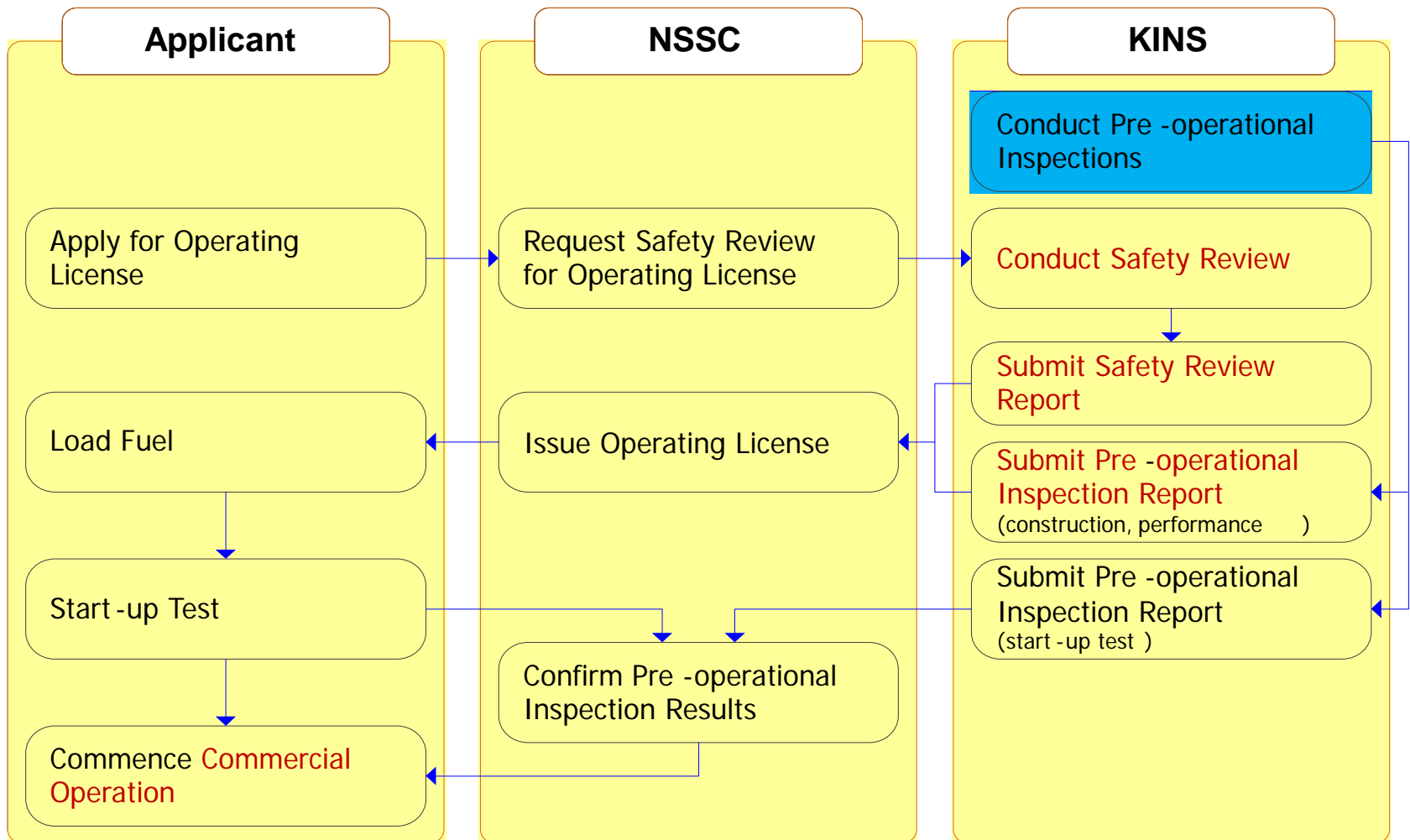
(I.a) Authorization Process in Korea

- Specific review process for **construction permit** and **inspection process** for construction stage

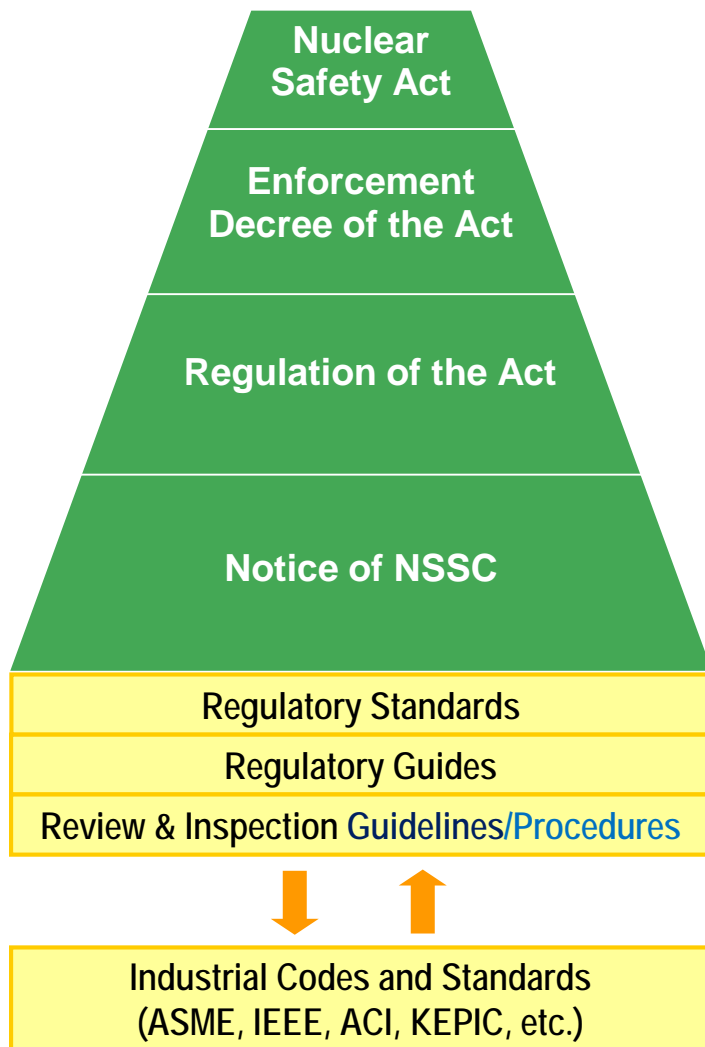


(I.a) Authorization Process in Korea

- Specific review process for **operating license stage**



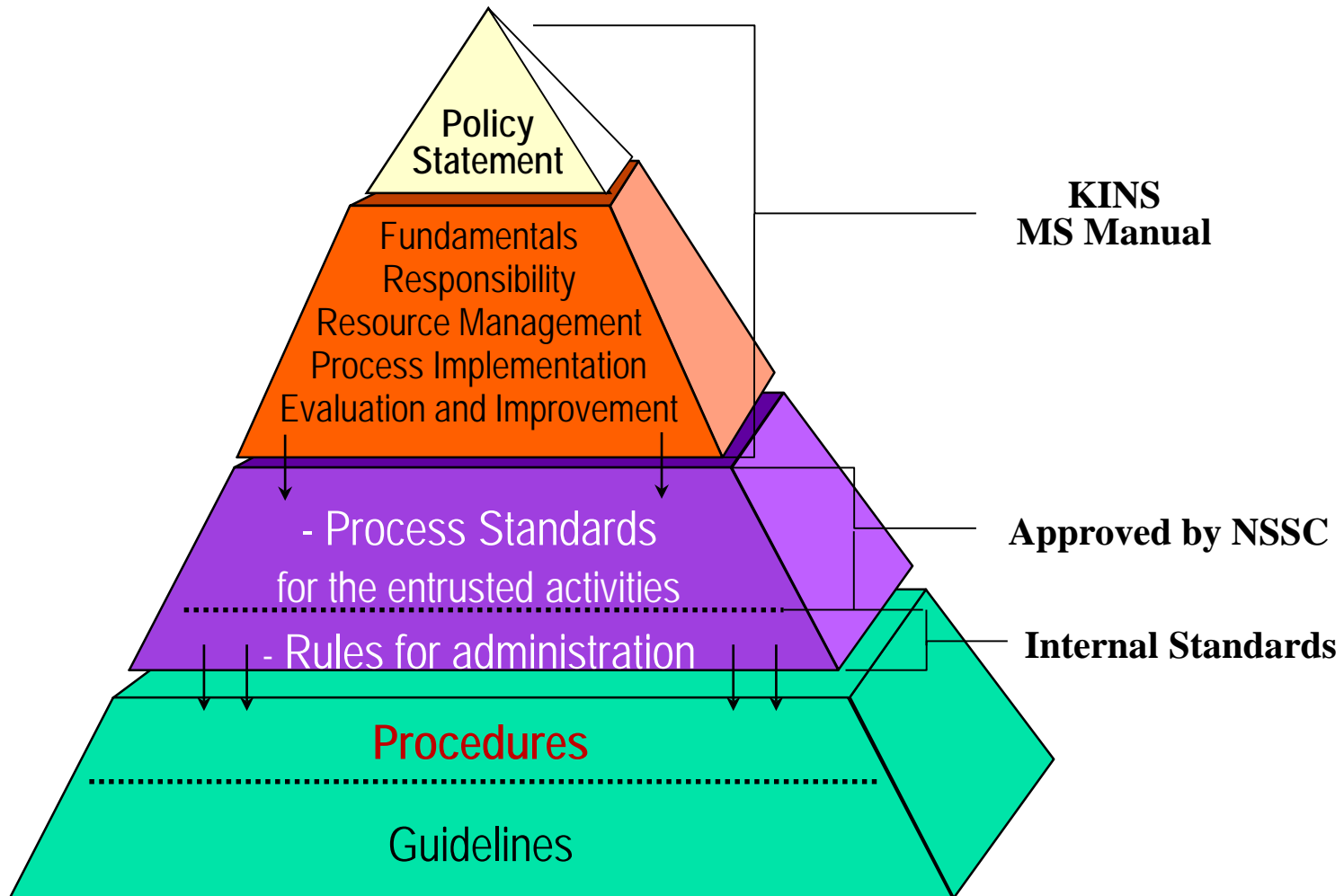
(I.a) Legal Hierarchy for NPP Regulation



- The Act provides the **bases and fundamental matters** regarding safety regulations
- The Decree provides particulars entrusted by the Act and necessary for **the enforcement of the Act**
- The Regulation provides the **technical standards and particulars** entrusted by the Act and the Decree such as detailed legal procedures and format of documents
- The Notice provides **detailed particulars for the technical standards and general design criteria**
- The Regulatory Standards and Guides provide the **interpretation, detailed criteria, acceptable methods, conditions, and specifications of the technical standards.**
- The Review & Inspection Guidelines/Procedures provide **the staff guidance in carrying out regulatory activities.**
- Codes and Standards for materials, design, test, and inspection of components and equipment

(I.b) Management System of KINS

- **Documentation of KINS management system**



Part II. Safety Review Process

(II.b) Procedures and Guidelines for Safety Review

- List of procedures for safety review and inspection(**KINS MS**)
 1. **Licensing review** procedure for NPPs
 2. License **amendment review** procedure for NPPs
 3. Review procedure for **periodic safety review** of NPPs
 4. Review procedure for **topical reports**
 5. **Periodic inspection** procedure for NPPs
 6. **Pre-operational inspection** procedures for NPPs
 7. Special inspection procedures for NPPs
 8. Management procedure for inspection findings
 9. Management procedure for resident inspectors
 10. Establishment and management procedure for review and inspection procedures
- others... (procedures for research reactors, fuel cycle facilities, etc.)


(II.b) Procedures and Guidelines for Safety Review

- **KINS Safety Review Guidelines (SRGs) for safety analysis report of NPPs**
 - **KINS SRGs are almost identical with Standard Review Plan (NUREG-0800, ...) of US NRC.**
 - **KINS SRGs provide the staff guidance and review procedures in view of the related technical areas.**
 - **KINS SRGs are not requirements, but the operator is expected to evaluate the facility as recommended by the SRGs.**
 - **This evaluation must include an 'identification and description of all differences in design features, analytical techniques and procedural measures' proposed for the facility and those corresponding features in the SRGs.**

(II.b) Procedures and Guidelines for Safety Review

- **KINS established and use various safety review guidelines.**
 - **Safety review guidelines for light water reactors.**
 - Safety review guidelines for licensing review;
 - Safety review guidelines for continued operation;
 - Safety review guidelines for power uprates.
 - **Safety review guidelines for heavy water reactors.**
 - Safety review guidelines for licensing review;
 - Safety review guidelines for continued operation.
 - **Safety review guidelines for research reactors.**
 - **Safety review guidelines for radiological environmental reports.**

(II.c) Sample MS Procedure for Safety Review

	Licensing Review Procedure for Nuclear Power Reactors and related facilities	원전심사-안규-01 Revision : 4 Pages : 1/17
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(II.c) Sample Procedure for Safety Review

- **Objective**

- **A procedure should prescribe its objective.**
- **The sample procedure prescribe its objective as**

1. Objective

The objective of this Procedure is to prescribe the specific implementation process for the safety review of the authorization of nuclear power reactor and related facilities, which is entrusted to KINS on the basis of Article 311 and Article 319 of the Enforcement Decree of the Atomic Energy Act (AEA).

(II.c) Sample Procedure for Safety Review

- **Scope**

- **A procedure should prescribe its scope (used for what activity).**
- **The sample procedure prescribe its scope as**

2. Scope of Application

This Procedure applies to the safety review of the standard design approval, construction permit or operating license of the nuclear power plant and related facilities from among the entrusted safety review activities.

(II.c) Sample Procedure for Safety Review

- **Applicable references**

- **A procedure should prescribe its references (regulations, etc.).**
- **The sample procedure prescribe its references as**

3. Applicable References

- 3.1 The AEA: Article 11 (Construction Permit) Paragraph 1 and Paragraph 3, Article 12-2 (Standard Design Approval) Paragraph 1, Article 96-2 (Restriction on Installation of Hazardous Facilities).
- 3.2 The AEA Enforcement Decree: Article 21 (Application for Construction Permit), Article 24 (Application for Approval of Standard Design), Article 33 (Application for Operating License) Paragraph 1, Article 297-8 (Scope of Restriction on Installation of Hazardous Facility and Facility Subject to Restriction) Paragraph 1 and Paragraph 2.
- 3.3 The AEA Enforcement Regulation: Article 6 (Application for Construction Permit, etc.) Paragraph 1, Article 11-2 (Application for Standard Design Approval, etc.), Article 15 (Application for Operating License, etc.) Paragraph 1 and Paragraph 2.
- 3.4 KINS Rules for Entrusted Regulatory Activity

(II.c) Sample Procedure for Safety Review

- **Definitions**

- **A procedure should prescribe definitions of terms used in it, as necessary.**
- **A part of definitions of the sample procedure is like this.**

4. General Aspects

4.1 Definitions

4.1.1 "Review Executive" is the vice president of KINS who is in charge of the safety review activities as stipulated by the KINS Rule for Work Assignment.

4.1.2 "Review Director" is the Director under the Review Executive who is in charge of overall safety review activities for nuclear facilities.

4.1.3 "Review Project Manager" is the Project Manager (PM) who is in charge of the management of safety review activities including the initiation, progress and

(II.c) Sample Procedure for Safety Review

● Responsibilities

- A procedure should prescribe responsibilities for the process.
- A part of responsibilities of the sample procedure is like this.

4.2 Responsibilities

4.2.1 The president of KINS

- 1) Approval of review Guidelines, review Procedures, review plan and review report.
- 2) Holding the KINS Nuclear Safety Council and Approval of the result of the Council.

4.2.2 Nuclear Safety Council

- 1) Decision of major matters regarding nuclear safety review.
- 2) Deliberation, decision and consultation for major safety review results.

4.2.3 Nuclear Safety Expert Council

(II.c) Sample Procedure for Safety Review

- **Documents to be reviewed**
 - **A part of 'documents to be reviewed' of the sample procedure is like this.**

4.3 Documents to be reviewed

4.3.1 In case of review for the standard design approval, the following documents are to be reviewed.

- 1) Descriptions for standard design.
- 2) Standard Safety Analysis Report.
- 3) Plan for preparation of Emergency Operation Procedures.
- 4) Explanatory report for the usage purpose of the reactor.
- 5) Explanatory report for technical capabilities for the design of the reactor.

(II.c) Sample Procedure for Safety Review

- **Review standards**

- **'Review standards' means the regulations and guides used for review and assessment.**
- **A part of 'review standards' of the sample procedure is like this.**

4.4 Review Standards

4.4.1 The AEA, the AEA Enforcement Decree, the AEA Enforcement Regulation,

4.4.2 The relevant NSSC Notices,

4.4.3 Safety Review Guidelines for LWR nuclear power reactor and related facilities,

(II.c) Sample Procedure for Safety Review

- **Implementation Procedures**

- **'Implementation procedures' means work-flow and specific activities to perform the review and assessment process.**
- **A part of 'Implementation procedures' of the sample procedure is like this.**

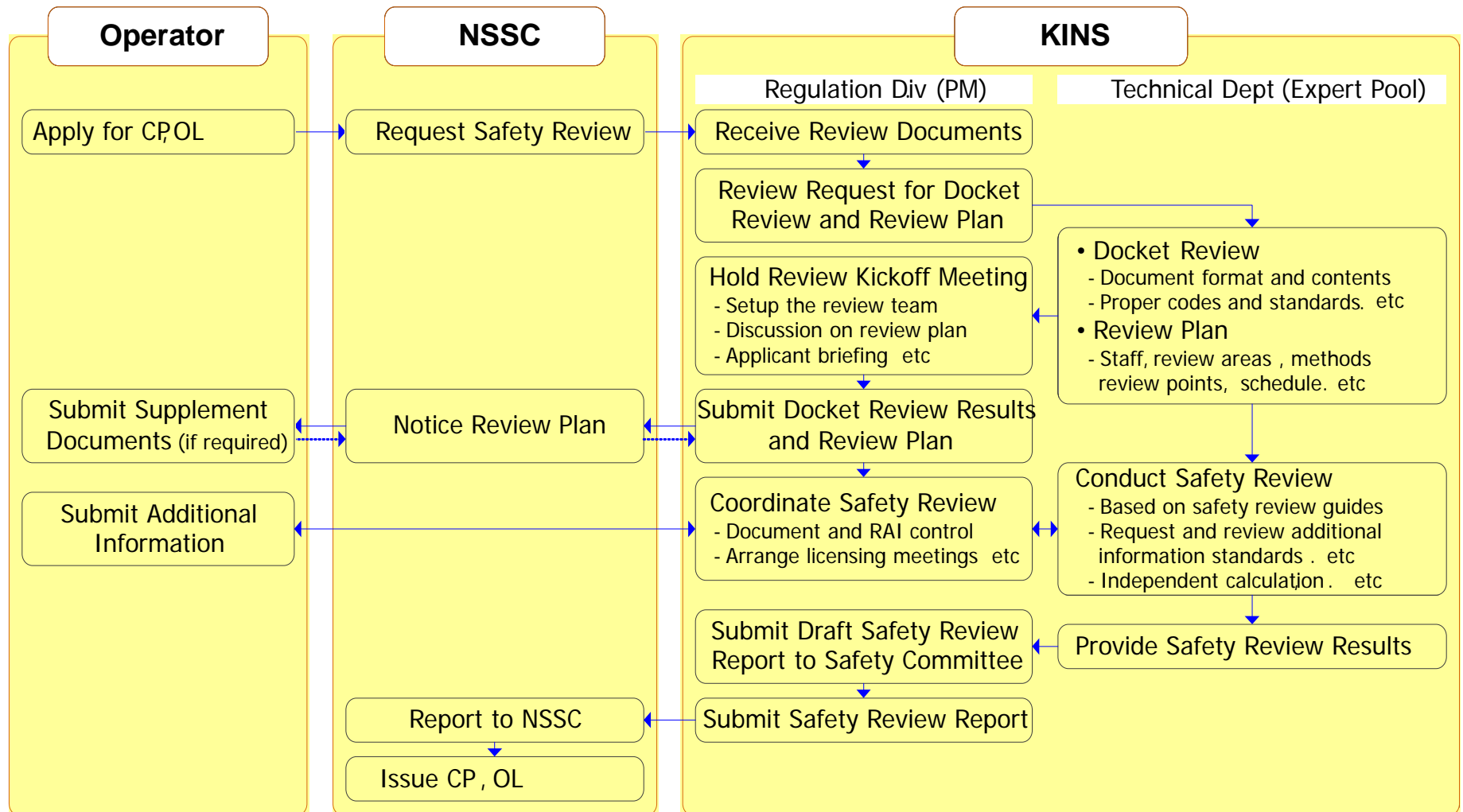
5. Implementation Procedures

5.1 Receipt of application and establishment of review plan

- 5.1.1 Receipt of application: the Review Project Manager verifies the official letter requesting the safety review from NSSC and the attached documents for application, and then obtain the approval of the receipt from the Review Director.
- 5.1.2 Review on the appropriateness of the application documents: the Review Project Manager requests within 7 days after the receipt the Branch Review Managers to review the documentation appropriateness of the application in view of the documentation structure, completeness of the contents of documents, description of the relevant technical standards, and so on.

(II.c) Sample Procedure for Safety Review

● Detailed work flow for licensing review process



Summary

- **Part I. Introduction**

- **Organizational framework of Korean nuclear regulation is introduced.**
- **The authorization process for NPPs are briefly explained.**

- **Part II. Safety Review Process**

- **Safety review procedures and guidelines are introduced.**
- **Detailed contents of a sample procedure are explained.**