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Overview of Nuclear Regulatory Inspection Program

14 March 2024

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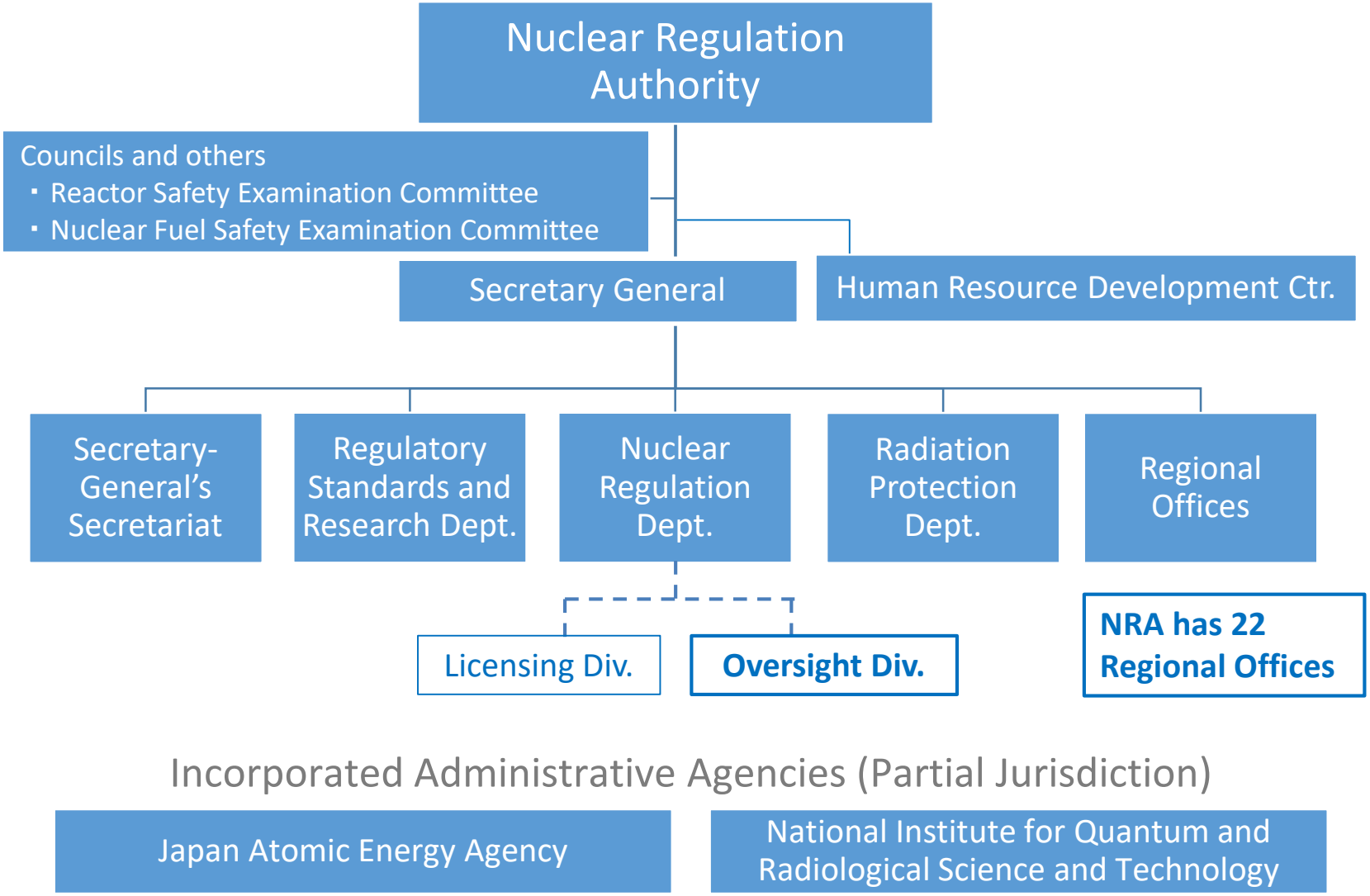
Nuclear Regulation Authority (NRA) Japan

About NRA

◆ NRA Organizational Structure



Regulatory Oversight Program Evolution

- In January 2016, The IAEA conducted an Integrated Regulatory Review Service (IRRS) mission to NRA
  - Recommendations and suggestions for the inspection program to be developed and improved

IAEA IRRS Mission to Japan, Jan. 2016, Report
https://www.iaea.org/sites/default/files/documents/review-missions/irrs_mission_report_japan_2016.pdf
IAEA IRRS Follow-up Mission to Japan, Jan. 2020, Report
https://www.iaea.org/sites/default/files/documents/review-missions/irrs_japan_follow_up_report.pdf

Key concepts

- *Risk-informed and Performance-Based*
- *Graded Approach*
- *Free Access to licensee facilities and information*

NRA has revised its inspection program introducing the US Nuclear Regulatory Commission (NRC) - Reactor Oversight Process (ROP)

- Inspections
- Performance Indicators (PIs)
- Plant Assessment Process

A new monitoring and assessment program started from **April 2020**

Key Concepts of Inspection Program

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(1) Regulatory inspections should be improved so that they do not substitute for the control, supervision, and verification activities conducted by the authorized party itself. → Responsibility for safety and Role of government

(2) The scope of regulatory inspections should cover all safety activities of licensees. → Free access

(3) The inspection approach should be more effective by applying risk-informed and performance-based inspections.

(4) The inspection framework should be simplified, flexible, and effective by streamlining the scope of various regulatory inspections and monitoring. → Allow NRA decisions about reactive inspections to be made at the lowest possible level. Graded approach

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Statements related to Inspection

- Key Concepts - (1) Responsibility for safety and Role of Government

Safety Fundamentals (SF)

Principle 1: Responsibility for safety

The prime responsibility for safety must rest with the person or organization responsible for facilities and activities that give rise to radiation risks.

Principle 2: Role of government

An effective legal and governmental framework for safety, including an independent regulatory body, must be established and sustained.

General Safety Requirements (GSRs)

Part 1 paragraph 4.49

Regulatory inspection cannot diminish the prime responsibility for safety of the authorized party, and cannot substitute for the control, supervision and verification activities conducted under the responsibility of the authorized party.

IAEA Safety Standard (cont.)

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Statements related to Inspection

- Key Concepts - (2) Free access, (3) more effective Inspections

General Safety Requirements (GSRs)

Part 1 Requirement 29, para. 4.52

Regulatory inspections shall cover all areas of responsibility of the regulatory body, and the regulatory body shall have the authority to carry out independent inspections. Provision shall be made for free access by regulatory inspectors to any facility or activity at any time, within the constraints of ensuring operational safety at all times and other constraints associated with the potential for harmful consequences. These inspections may include, within reason, unannounced inspections. The manner, extent, and frequency of inspections shall be in accordance with a graded approach.

IAEA Safety Standard (cont.)

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Statements related to Inspection

- Key Concepts - (4) Inspection framework

General Safety Requirements (GSRs)

Part 1 Requirement 2 paragraph 2.5 the government shall promulgate laws and statutes to make provision for an effective governmental, legal, and regulatory framework for safety. This framework for safety shall set out the following: … (10) Provision for the inspection of facilities and activities, and for the enforcement of regulations, in accordance with a graded approach;

Part 1 paragraph 4.52. The manner, extent, and frequency of inspections shall be in accordance with a graded approach.

Part 1 Requirement 30 The regulatory body shall establish and implement an enforcement policy within the legal framework for responding to noncompliance by authorized parties with regulatory requirements or with any conditions specified in the authorization.

Basic Concept of Nuclear Oversight Program

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	[Licensee]	[Regulatory agency]
Basic concept	Primary responsibilities by the licensee for ensuring safety	
Role and responsibility	• To confirm conformity to regulatory requirements • To improve safety on their own initiative	• To develop regulatory requirements • To confirm licensee's conformity to regulatory requirements for In-service • Oversight of whole operational safety activities • To prepare various enforcement options
Legal framework	To obligate licensee to conduct certain inspections (clarifying licensee's primary responsibility for ensuring safety)	• Permission and approval for In-service • Comprehensive monitoring and assessment
Key points of operation	Use risk information and safety performance indicators	Provide information → Adoption of risk informed and performance-based evaluation
	Improvement of transparency on licensee's activities	Carry out in cooperation ↔ Encourage continuous improvement of operational safety activities

What is Risk

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- **Risk –** Risk has many definitions, for example:

Risk = Probability x Consequences

Risk can also be expressed by the following three questions:

  - What can go wrong (accident scenario)?
  - How likely is it (frequency on a per reactor year basis)?
  - What are the consequences (impact on plant or on people)?

Probabilistic Risk Assessment (PRA) - PRA is a structured, analytical process for identifying potential weaknesses and strengths of a plant design in an integrated fashion. PRA provides a framework for explicitly addressing and presenting uncertainties (vs. making conservative assumptions to deal with uncertainty and risk)

An approach in which risk insights, engineering analysis and judgment (including the principle of Defense-in-depth and safety margins), and performance history are used, to (purposes)

(1) focus attention on the most important activities,

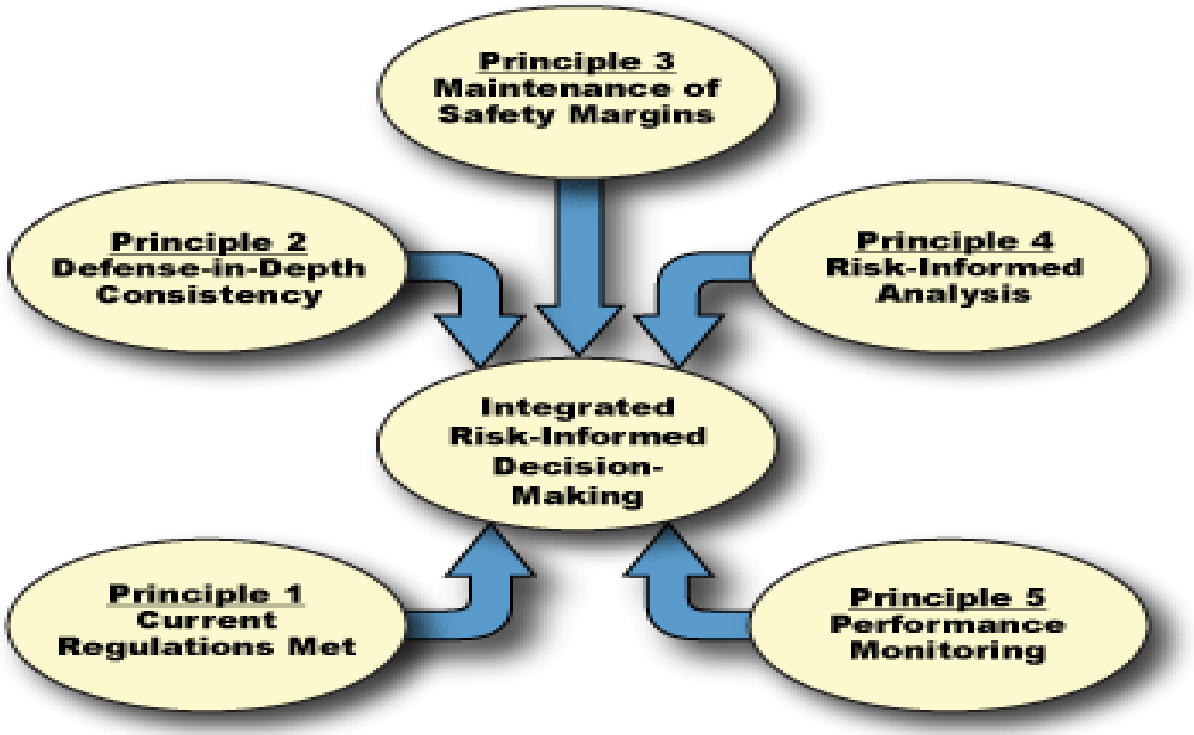
(2) establish objective criteria for evaluating performance,

(3) develop measurable or calculable parameters for monitoring system and licensee performance,

(4) provide flexibility to determine how to meet the established performance criteria in a way that will encourage and reward improved outcomes, and

(5) focus on the results as the primary basis for regulatory decision-making.

Risk-Informed Concept



Traditional "Deterministic" Approaches

- Unquantified Probabilities
- Design-Basis Accidents
- "Structuralist" Defense in Depth
- Can impose heavy regulatory burden
- Incomplete

Risk-Informed Approach

- Combination of traditional and risk-based approaches

Risk-Based Approach

- Quantified Probabilities
- Scenario Based
- Realistic
- "Rationalist" Defense in Depth
- Incomplete
- Quality is an issue

Regulatory Framework - Cornerstones

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- The regulatory inspection program measures plant performance in three key areas:
  - Nuclear Facility Safety - avoiding accidents and reducing the consequences if they do occur
  - Radiation Safety - for both plant workers and the public from unnecessary exposures
  - Physical Protection - protection of the plant against sabotage or other security threats.

- The three broad key areas are each divided into "**Cornerstones**" which provide "**inspectable**" areas.

- To measure plant performance, the regulatory inspection program focuses on seven **Cornerstones** that support the safety of plant operations in the three key areas.

Regulatory Framework - Cornerstones

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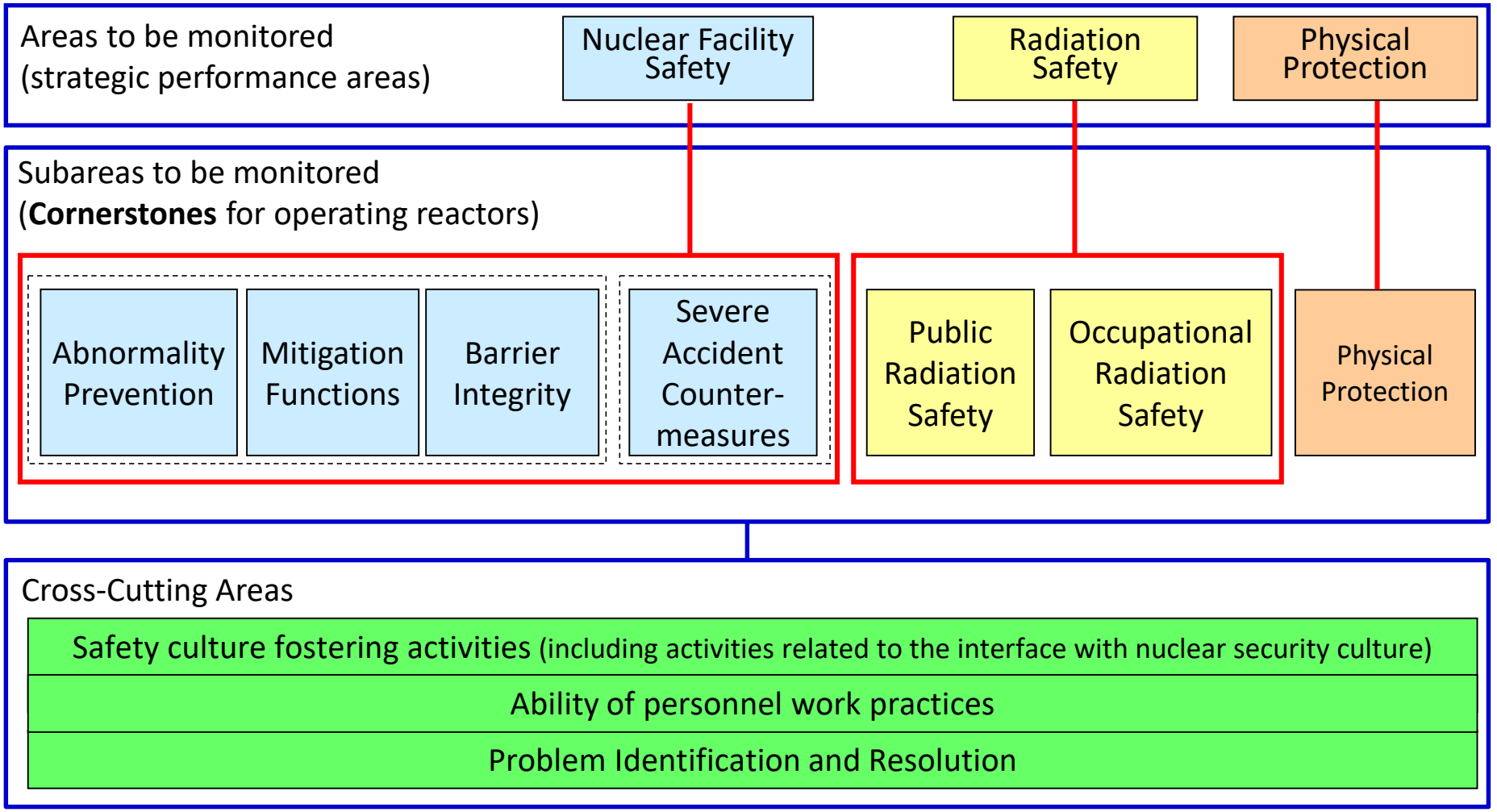
- The NRA's fundamental mission is to protect the general public and the environment through rigorous and reliable regulations of nuclear activities



Scheme of Nuclear Oversight Program

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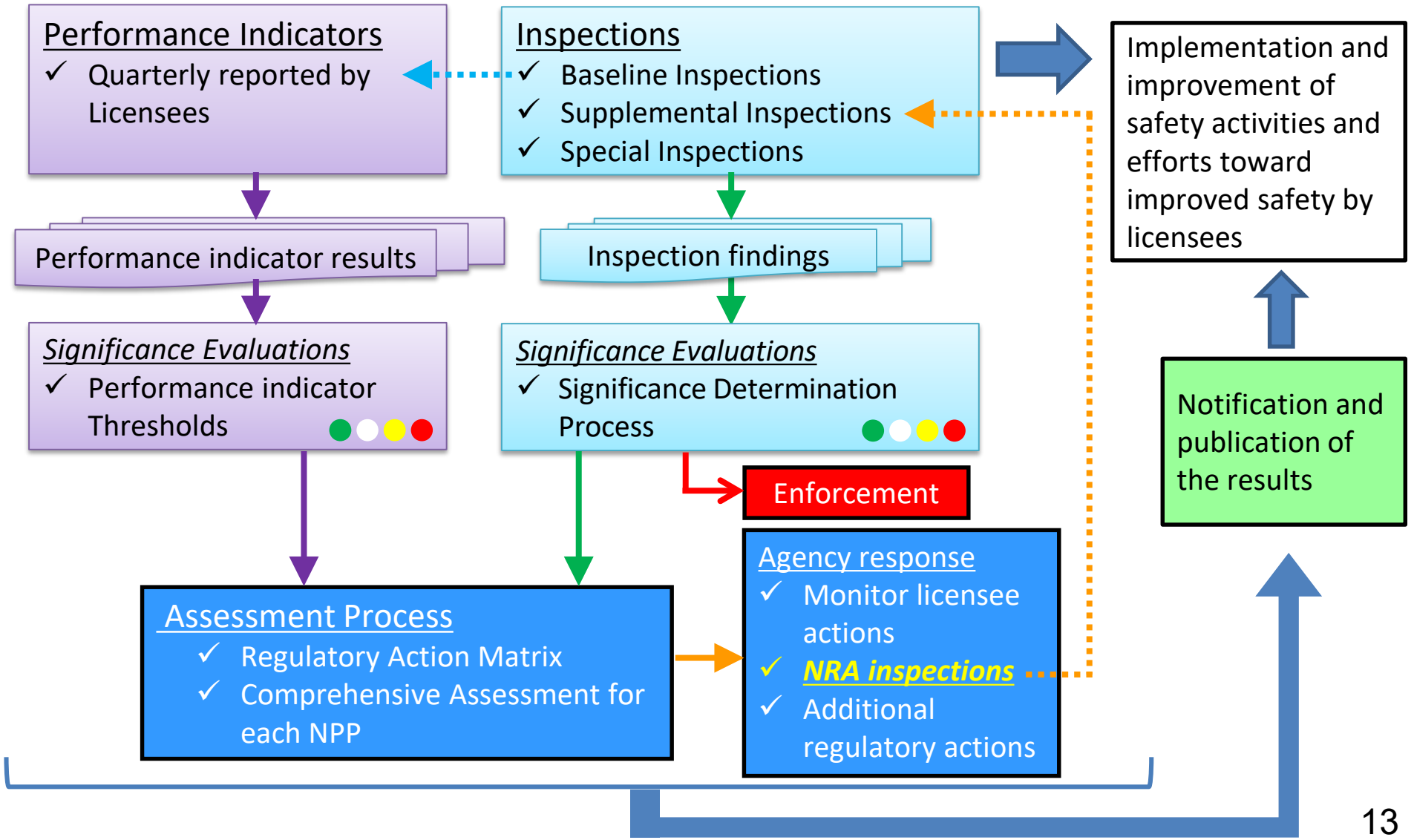
- Nuclear plant performance is measured and assessed by a combination of inspection findings and PIs.



Significance Evaluations

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- Classification according to the inspection findings and the performance indicators (Nuclear Power Plants)

Green	Very low and limited impact on Safety function and performance. Green significance indicates that the licensee performance is acceptable. It can be improved through licensee's corrective action. (Including no performance deficiency for performance indicators)
White	Low impact on Safety function and performance. Cornerstone objectives are met with minimal reduction in safety margin. NRA should monitor the corrective action of licensee.
Yellow	Substantial impact on Safety function and performance. Yellow significance indicates a decline in licensee performance that is still acceptable with cornerstone objectives met, but with significant reduction in safety margin.
Red	High impact on Safety function and performance.

Inspection

The nuclear regulatory inspection program is composed of several elements to provide indications of licensee performance.

NRA conducts Daily Inspections (mainly by resident inspectors), and Team Inspections (mainly by the headquarters inspectors with specialized knowledge at a certain frequency). In addition to these Baseline Inspections, Supplemental Inspections and Special Inspections will be conducted as needed.

1. Baseline inspections

   represent the minimum level of inspection required to ensure plant safety and security and are common to all intended nuclear plants and facilities.

2. Supplemental inspections

   are inspections of performance issues beyond the baseline program. These additional inspections are based on criteria specified in the assessment program to address declining licensee performance and is not included in the baseline program.

3. Special inspections

   are performed mainly in response to a significant operational event.

Definitions

- **Issue of Concern -** A well-defined observation or collection of observations that may have a bearing on safety or security which may warrant further inspection, screening, evaluation, or regulatory action.
- **Performance Deficiency** – An issue that is the result of a licensee not meeting a requirement or self-imposed standard where the cause was reasonably within the licensee's ability to foresee and correct, and therefore should have been prevented.
- **Inspection Finding** – A **performance deficiency** that is categorized as more-than-minor in significance.
- **Violation -** The failure to comply with a legally binding regulatory requirement, such as a statute, regulation, order, license condition, or a technical specification.

Inspection issue screening process

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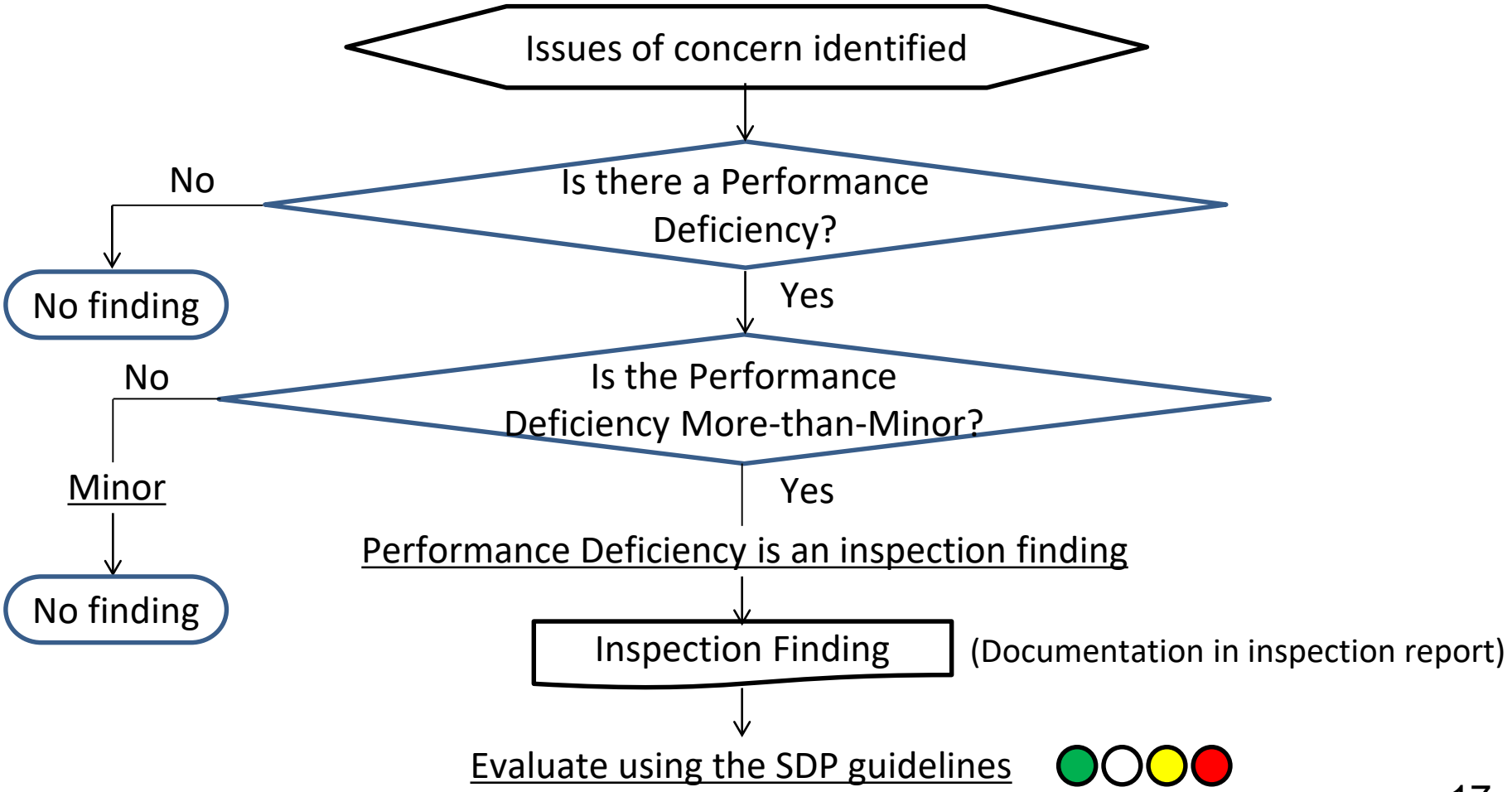
Two simple questions for Issue of Concern to identify Inspection Finding

- Is there a Performance Deficiency?
- Is the PD More-than-Minor?



Screening Questions for Issue of Concern

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Is there a Performance Deficiency?

The issue of concern is a PD if the answer to both of the following questions is “yes”:

- Licensee’s failure to meet a regulatory requirement or self-imposed standard?
- The cause reasonably within the licensee’s ability to foresee and correct and should the issue of concern have been prevented?

Is the Performance Deficiency More-than-Minor?

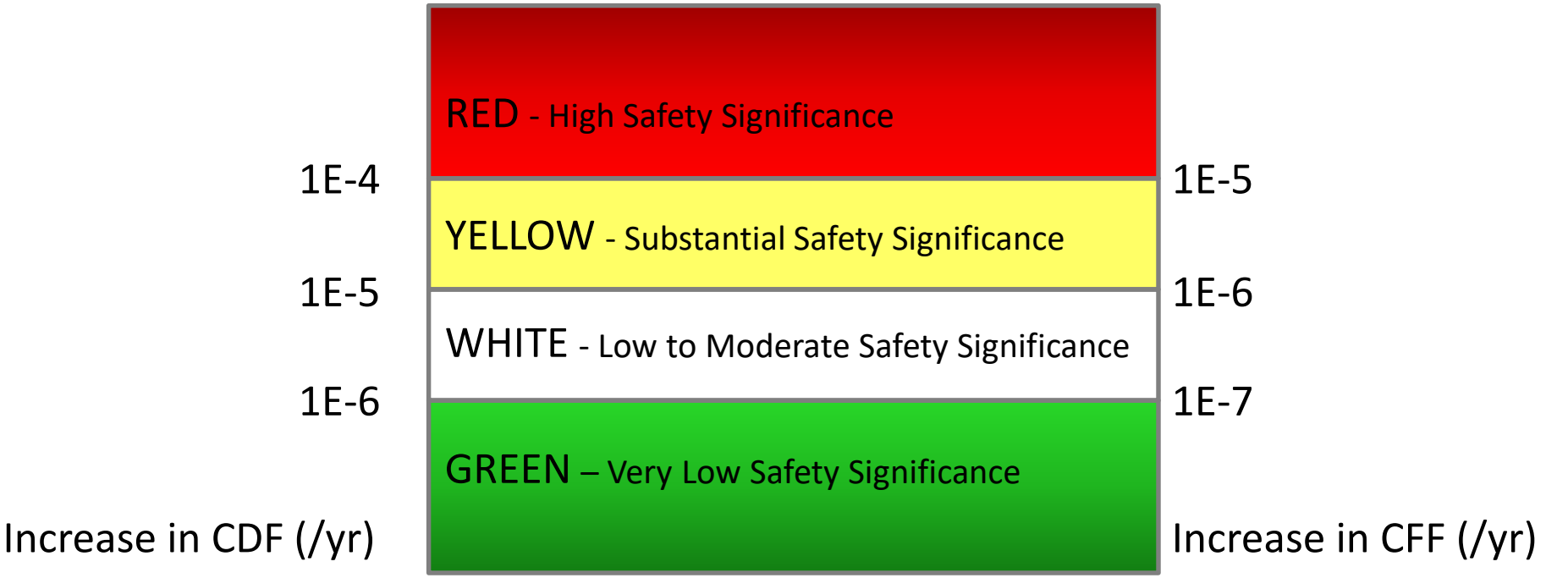
If the answer to any of the following questions is “yes,” then the PD is MTM and is a finding. If the answer to all of the following questions is “no,” then the PD is minor and is not a finding.

- Adversely affecting the associated cornerstone objective?
- Precursor to a significant event?
- If left uncorrected, Potential to lead to a more significant safety concern?

Significance Determination Process (SDP)

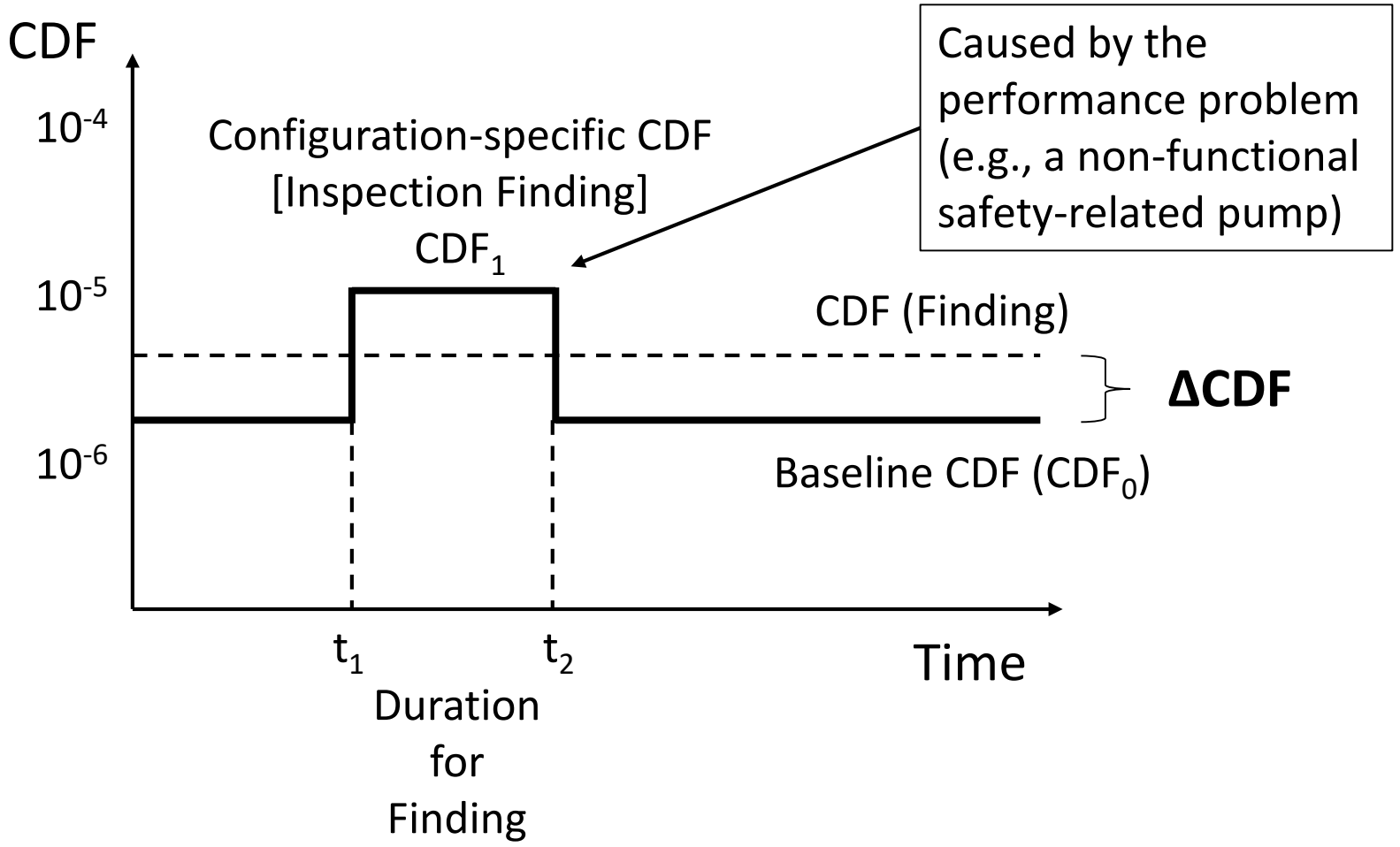
- SDP is a risk-informed process used to help NRA inspectors and staff determine the safety significance of inspection findings.

Quantitative Significance Evaluation (For NPP Inspection Findings At-Power)



CDF: Core Damage Frequency CFF: Containment Failure Frequency

Quantitative Significance Evaluation - ΔCDF



- Risk Significance:
  - Classified as ΔCDF averaged over 1 year

Qualitative Significance Evaluation

If no quantitative tools (e.g., PRA) exist to evaluate the finding, an integrated risk-informed decision-making approach using qualitative criteria should be used to evaluate its significance.

- Discussion items
  - What are the decision attributes
  - How to evaluate each attribute
  - How to integrate the results into the significance
- Basic concept

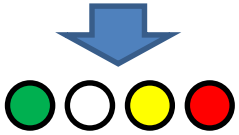
(Factors directly related to risk significance
(Defense-in-depth, Safety margin, Importance of safety function, etc.))

×

(Duration)

+

(Other factors affecting risk significance
(Recovery actions, Iteration, Operation experience, etc.))



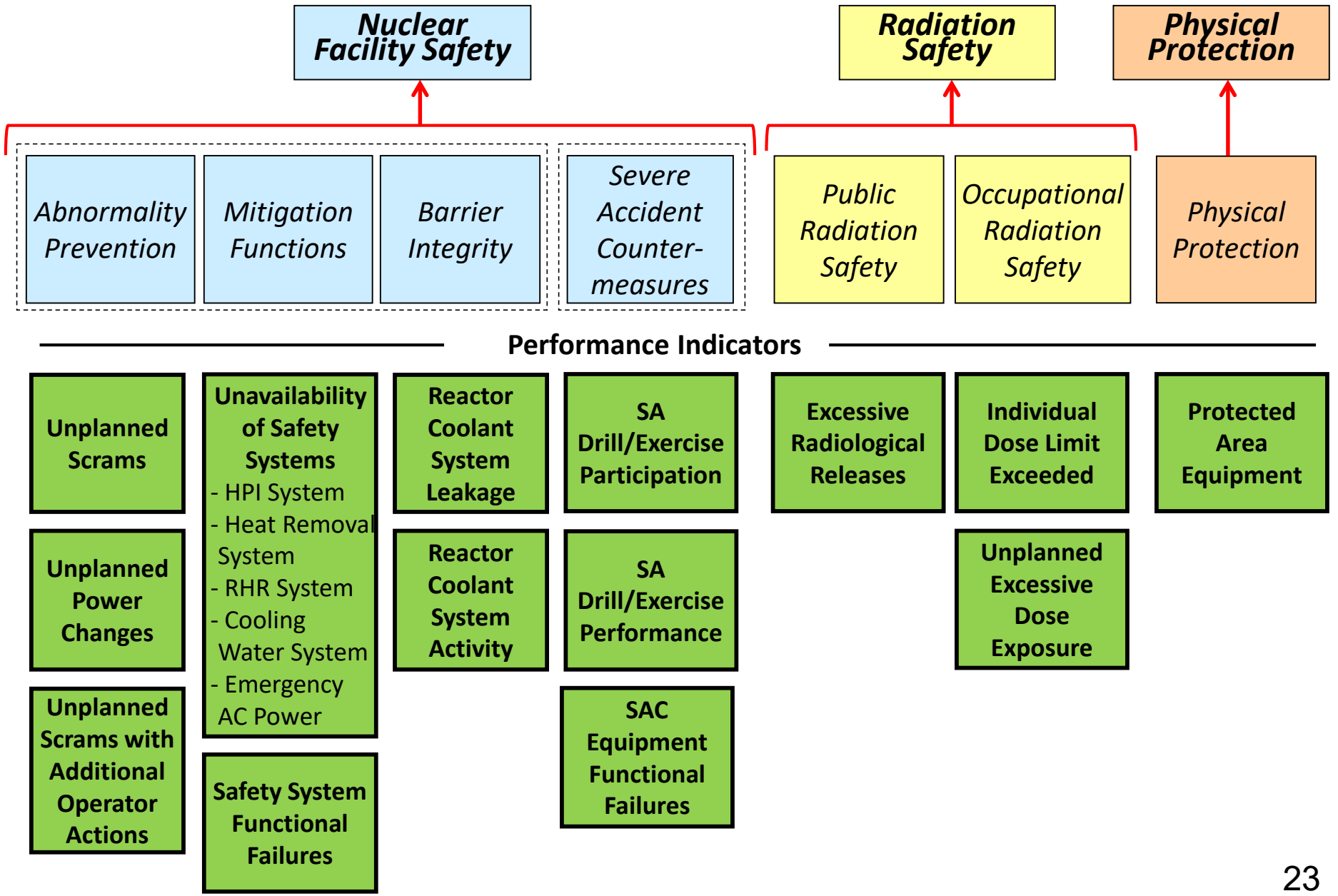
Performance Indicators

- A “performance indicator” is a **quantitative measure** of a particular attribute of licensee performance that indicates how well a plant is performing when measured against established ***thresholds***.
  - *For some PIs, White/Yellow or Yellow/Red thresholds were not identified, because the indicators could not be directly tied to risk data.*

- Performance indicators are “snap-shots” of licensee performance in certain areas over a one-quarter year period.

- Performance indicators are reported by the licensees on a quarterly basis, reviewed by the NRA staff, and posted on the NRA’s Web site.

Performance Indicators (cont.)



Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (1/7)

Cornerstone	PI	G	W	Y	R
#1 Abnormality Prevention	(1) Unplanned Scrams	0～2.0	＞2.0	＞6.0	＞25.0
	(2) Unplanned Power Changes	0～2.0	＞2.0	N/A	N/A
	(3) Unplanned Scrams with Additional Operator Actions	0～1	＞1	N/A	N/A

Definitions

- **PI(1):** The number of unplanned scrams during the previous four quarters, both manual and automatic, while critical per 7,000 hours.
- **PI(2):** The number of unplanned changes in reactor power of greater than 5-percent full-power, per 7,000 hours of critical operation, excluding manual and automatic scrams.
- **PI(3):** The number of unplanned scrams while critical, both manual and automatic, during the previous four quarters require additional operator actions as defined by the NRA's PI guideline.

Thresholds

- The Green/White threshold was established to identify outliers from industry norms, based on statistics of actual values (mean plus two standard deviations).
- The White/Yellow and Yellow/Red thresholds were linked to a risk basis.

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (2/7)

Cornerstone	PI	G	W	Y	R
#2 Mitigation Functions	(4) Unavailability of Safety Systems				
	- High Pressure Injection Systems	0～3.4%	＞3.4%	＞6.8%	N/A
	- Heat Removal Systems	0～3.4%	＞3.4%	＞6.8%	N/A
	- Residual Heat Removal Systems	0～3.4%	＞3.4%	＞6.8%	N/A
	- Cooling Water Systems	0～3.4%	＞3.4%	＞6.8%	N/A
	- Emergency AC Power Systems	0～3.4%	＞3.4%	＞6.8%	N/A
	(5) Safety System Functional Failures	≦3	≧4	N/A	N/A

Definitions

- **PI(4):** Ratio of the hours of occurrences of deviation for Limiting Condition for Operation (LCO) of the systems to the hours of critical operation during the previous 12 quarters.
- **PI(5):** The number of occurrences of deviation from LCO of the safety function of structures or systems as defined by the licensee's Operational Safety Program (OSP) (i.e. Technical Specifications) in the previous four quarters.

Thresholds

- **PI(4):** The Green/White threshold was based on the completion time (Allowed Outage Time: AOT) required when the LCO occurs as defined by the OSP (10 days (240 hours) for 7,000 critical hours).
- **PI(5):** The Green/White threshold was established to identify outliers from industry norms, based on statistics of actual values (mean plus two standard deviations).

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (3/7)

Cornerstone	PI	G	W	Y	R
#3 Barrier Integrity	(6) Reactor Coolant System Leakage	0～50.0 %	＞50.0 %	＞100.0 %	N/A
	(7) Reactor Coolant System Activity	0～50.0 %	＞50.0 %	＞100.0 %	N/A

Definitions

- **PI(6):** The maximum leak rate from RCS inside the Containment Vessel identified each month as defined in the OSP, expressed as a percentage of the OSP limit (LCO) in the previous four quarters.
- **PI(7):** The maximum monthly activity level of Iodine-131 in RCS per the OSP, expressed as a percentage of the OSP limit (LCO) in the previous four quarters.

Thresholds

- The thresholds for these indicators have a regulatory basis which is only indirectly linked to a risk basis and were set at 50 percent and 100 percent of the limit.

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (4/7)

Cornerstone	PI	G	W	Y	R
#4 Severe Accident Countermeasures	(8) Severe Accident Drill/Exercise Participation	≧80.0%	＜80.0%	＜60.0%	N/A
	(9) Severe Accident Drill/Exercise Performance	100~ 90.0%	＜90.0%	＜70.0%	N/A
	(10) Severe Accident Countermeasure Equipment Functional Failures	≦3	≧4	N/A	N/A

Definitions

- **PI(8):** The percentage of personnel deployed to perform activities for the maintenance of nuclear facilities that have participated in a drill or exercise for Severe Accident based on the OSP within the previous one year.
- **PI(9):** The percentage of actions that met the estimated time required for the action of Severe Accident Countermeasures, etc. in a drill or exercise for Severe Accident based on the OSP within the previous one year.
- **PI(10):** The number of occurrences of deviation from LCO of the function of Severe Accident Countermeasure Equipment as defined by the OSP in the previous four quarters.

Thresholds

- **PI(10):** The Green/White threshold is the same as in PI(5) - Safety System Functional Failures

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (5/7)

Cornerstone	PI	G	W	Y	R
#5 Public Radiation Safety	(11) Excessive Radiological Releases	＜1	1	≧2	N/A

Definitions

- **PI(11):** The number of releases of radioactive waste materials exceeding the management targets defined by the OSP that occurred during the fiscal year.

Thresholds

- The thresholds for this indicator have a regulatory basis.
- The Green/White threshold was set to 1 due to no history of excessive releases.

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (6/7)

Cornerstone	PI	G	W	Y	R
#6 Occupational Radiation Safety	(12) Individual Dose Limit Exceeded	＜1	1	≧2	-
	(13) Unplanned Excessive Dose Exposure	＜1	1	≧2	-

Definitions

- **PI(12):** The number of cases in which the radiation doses of radiation workers exceeded the legally stipulated dose limits during the fiscal year.
- **PI(13):** The number of unplanned exposure occurrences exceeding the effective dose that is the criteria for reporting accidents as stipulated by laws and regulations (5mSv) during the fiscal year.

Thresholds

- The thresholds for these indicators have a regulatory basis.
- **PI(12):** None if less than the dose limit specified by law.
- **PI(13):** The Green/White threshold was set to 1 as there were no actual reports.

Performance Indicators (cont.)

Cornerstones and Associated Performance Indicators (7/7)

Cornerstone	PI	G	W	Y	R
#7 Physical Protection	(14) Unavailability of Protected Area Equipment	0~0.080	＞0.080	N/A	N/A
(Not Publicly Available)					

Plant Assessment

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Measuring and Assessing Performance

Inspection Findings Results

+

Performance Indicators Results

- Adequate Performance = Normal Regulatory Attention
  (e.g., baseline inspections)
- Declining Performance = Increasing Regulatory Attention
  (e.g., supplemental inspections)

Supplemental inspections are performed when white, yellow, or red inspection findings are identified or when performance indicators exceed response thresholds.

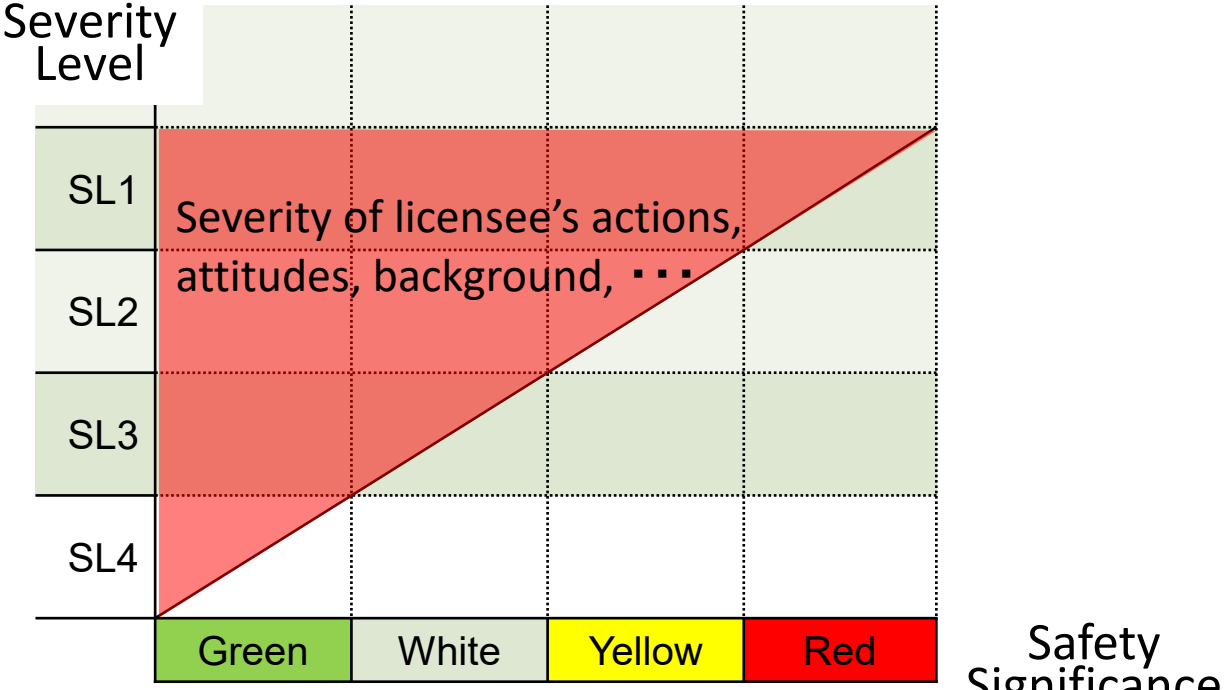
Enforcement Process

Severity Evaluation of Violation

Violation → In associated with
1. Impeding the regulatory process
2. Actual consequences on nuclear safety
3. Willfulness

→ Severity Level 1 - 4

Relationship between Safety Significance and Severity Level



Results of nuclear regulatory inspection

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Inspection Findings

Fiscal Year		Safety						Security					
		NPPs				NFFs, etc.		NPPs				NFFs, etc.	
		Significance Evaluations											
		G	W	Y	R	Low	High	G	W	Y	R	Low	High
2020	1st Q	2						1					
	2nd Q	5						1				1	
	3rd Q	3							1				
	4th Q	7						5			1		
2021	1st Q	4				2		1					
	2nd Q	6				3							
	3rd Q	12						1					
	4th Q	5						2					
2022	1st Q	4				2		1					
	2nd Q	6				1		3				1	
	3rd Q	3				1		1				2	
	4th Q	5						3					
2023 (As of end-December)	1st Q	8						1					
	2nd Q	4				1		1					
	3rd Q	2						1					

※ Including the violations evaluated only with the severity level

※ NFF : Nuclear Fuel Facility

Results of nuclear regulatory inspection (cont.)

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Security Significant Issues at Kashiwazaki-Kariwa

1. Unauthorized Access to the Controlled Area: White/SL III

- A licensee(TEPCO)'s staff accessed the control room by using another staff's ID card in Sep. 2020
- Security guards did not have adequate personality check and the TEPCO's staff identification data was re-registered on the different staff's ID card.

2. Partial Loss of Physical Protection Function: Red/SL I

- Several physical protection equipment had been defective, without sufficient complementary measures since Mar. 2020.

- NRA determined to carry out supplemental inspections in Mar. 2021 and issued an order which banned movement of nuclear fuel in Apr. 2021.
- **Supplemental inspections** conducted by NRA
  - Phase 1 (Apr. 2021 – Sep. 2021): Fact-check
  - Phase 2 (Oct. 2021 – Apr. 2023): Confirmation of TEPCO's improvement status
  - Phase 3 (May 2023 – Dec. 2023): Continue to review unresolved issues
- NRA issued the inspection report and lifted the ban on movement of nuclear fuel on December 27, 2023.

Results of Performance Indicators

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- Webpage Examples

実用発電用原子炉施設安全実績指標（PI）

1．2022年度第4四半期安全実績指標（PI）一覧

プラント		PI																	
		1	2	3	4−1	4−2	4−3	4−4	4−5	5	6	7	8	9	10	11	12	13	14
泊	1号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	緑	緑	緑
泊	2号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	緑	緑	緑
泊	3号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	緑	緑	緑
美浜	1号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
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高浜	1号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	緑	緑	緑	緑	緑	緑	緑
高浜	2号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	N/A	N/A	緑	緑	緑	緑	緑
高浜	3号炉	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
高浜	4号炉	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
島根	1号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
島根	2号炉	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	N/A	N/A	N/A	N/A	N/A	緑	緑	緑	緑
島根	3号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑
伊方	1号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
伊方	2号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
伊方	3号炉	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
玄海	1号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
玄海	2号炉	—	—	—	—	—	—	—	—	—	—	—	—	—	—	緑	緑	緑	緑
玄海	3号炉	N/A	N/A	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
玄海	4号炉	N/A	N/A	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
川内	1号炉	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑
川内	2号炉	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑	緑

https://www2.nra.go.jp/activity/regulation/kiseikensa/joukyou/pi.html (in Japanese)

Results of Performance Indicators (cont.)

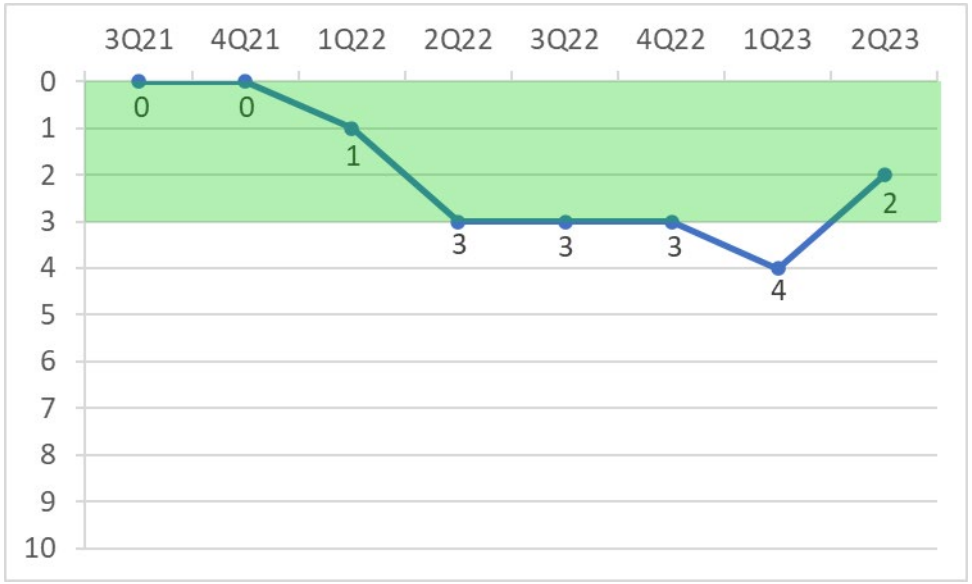
NRA, Japan
Nuclear Regulation Authority

Takahama NPP Unit 3

- PI(10): Severe Accident Countermeasure Equipment Functional Failures

	FY2021		FY2022				FY2023	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
No. of SACE Functional Failures in quarter (Deviations from LCO)	0	0	1	**2**	0	0	**2**	0
Total in previous four quarters (Deviations from LCO)	0	0	1	3	3	3	**4**	2
Indicator Value	0	0	1	3	3	3	**4**	2
Color	G	G	G	G	G	G	**W**	G

Thresholds	
Green	≦3
White	≧4
Yellow	N/A
Red	N/A



Note: Fiscal Year in Japan starts on April 1st and ends on March 31st in the next year.

Results of Performance Indicators (cont.)

NRA, Japan
Nuclear Regulation Authority

- One White PI result submitted by the Takahama NPP Unit 3 licensee for the first quarter of FY2023.
  - Based on the submission dated August 9,2023, the NRA's review of Takahama Unit 3 identified that the Severe Accident Countermeasure Equipment Functional Failures performance indicator has crossed the Green-White threshold.
  - This PI was the result of four functional failures in association with the Severe Accident Countermeasure cornerstone during 2Q/FY2022 through 1Q/FY2023.
  - In response to the White PI result, NRA notified the licensee of **a supplemental inspection plan** on December 25, 2023.

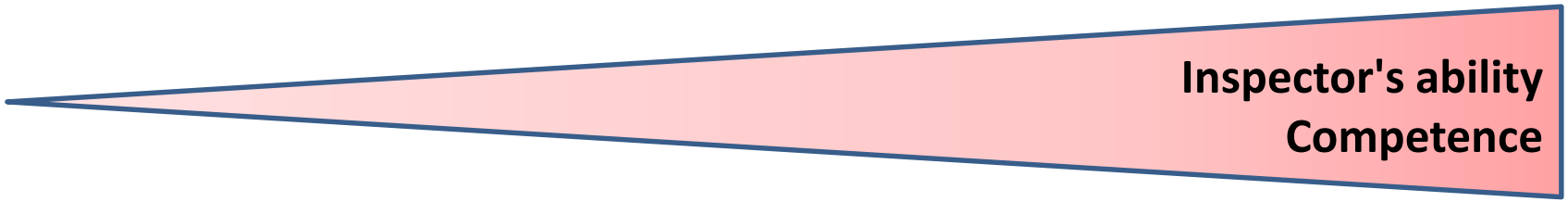
    <Scope>
    - Appropriate identification of Direct Cause and Root Cause,
    - Effectiveness of the plan for improvement and corrective action, etc.

Inspector education program

Those who aim at the inspector acquire basic knowledge in the (1) Classroom, then improve their skills with various documents in (2) Self Learning, and complete knowledge and skills as an inspector by (3) On the Job Training in the field.

(1) Classroom → **(2) Self Learning** → **(3) OJT**

- QMS
- Facility Management
- Operation management
- Radiation control
- Nuclear fuel management etc.



Inspector repetitive education program

- Retraining menu for Inspectors
  In order to extend the qualifications of inspectors, it is necessary to receive the following retraining.

  - Simulator training
  - Communication education
    （Senior inspectors receive team building education.）
  - Regulatory updates
    (regulation changes, institutional issues, latest operational experience, etc.)
  - On-site Walk-down training

All inspectors need to carry out this re-education within three years.

Activities of NRA Resident Inspectors

- Examine the licensees' safety performance.
- Pay attention to the circumstances, events, and results of licensees' safety efforts.

Resident inspectors meeting every morning at the Reginal Office to confirm what inspection activities are scheduled for the day.

Activities of NRA Resident Inspectors (cont.)

The NRA Resident Inspector is a specially trained nuclear power expert who works at the plant site.

Activities of NRA Resident Inspectors (cont.)

To attend the licensee's "Plan of the Day" meeting, each morning.

Activities of NRA Resident Inspectors (cont.)

To visit the Main Control Room and get information on the plant status.

Activities of NRA Resident Inspectors (cont.)

To walk through the plant and inspect plant facilities and operations.
Also observe plant workers.

Activities of NRA Resident Inspectors (cont.)

To ask the licensee a question if it looks wrong.

Activities of NRA Resident Inspectors (cont.)

To meet with the licensee to discuss plant safety issues found during the inspections.

Activities of NRA Resident Inspectors (cont.)

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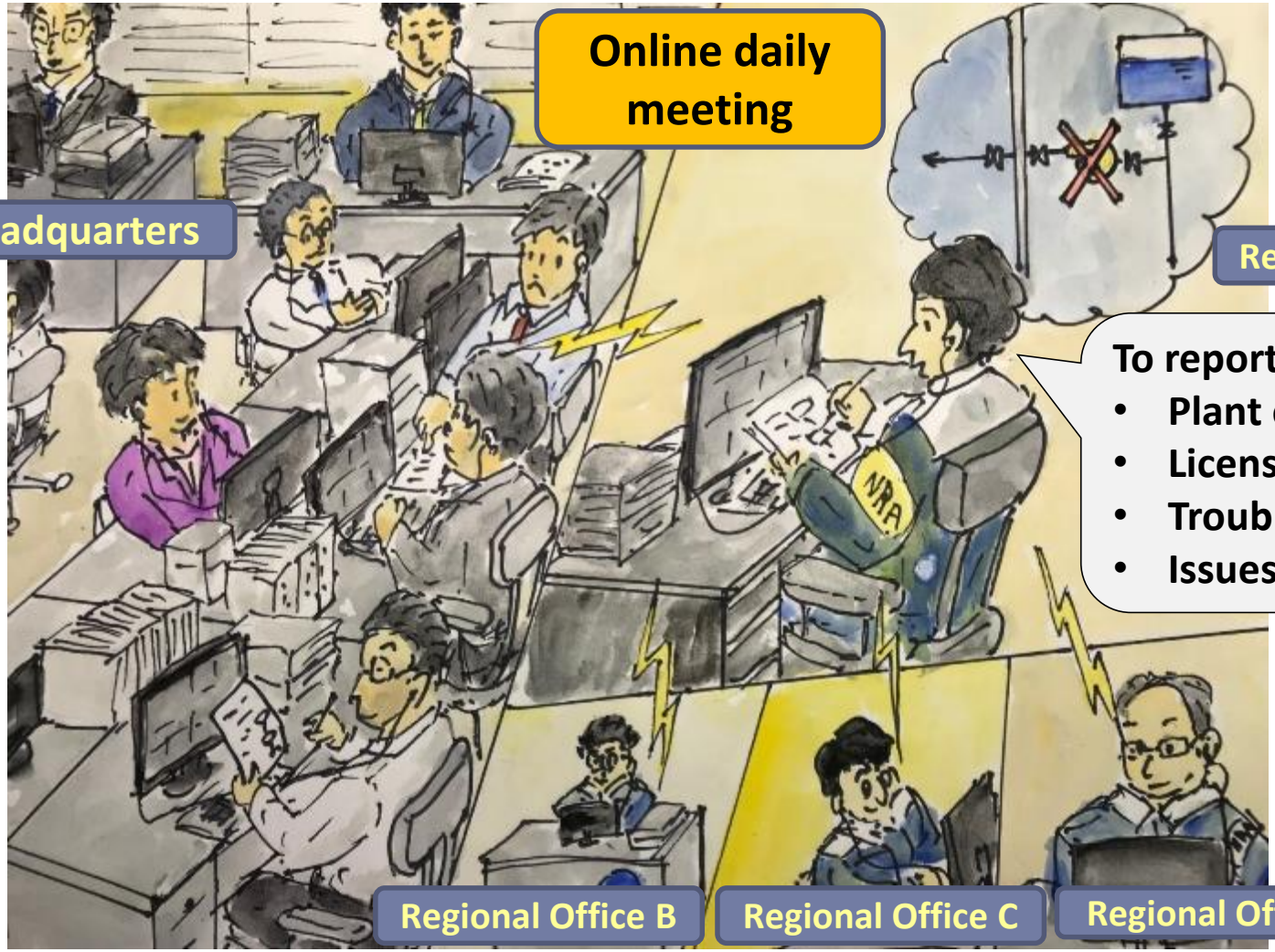
Inspectors are at the front line of eyes and ear of the NRA



To report, communicate

- **Plant operation status**
- **Licensee's activities**
- **Troubles**
- **Issues of concern, etc.**

NRA has 22 Regional Offices

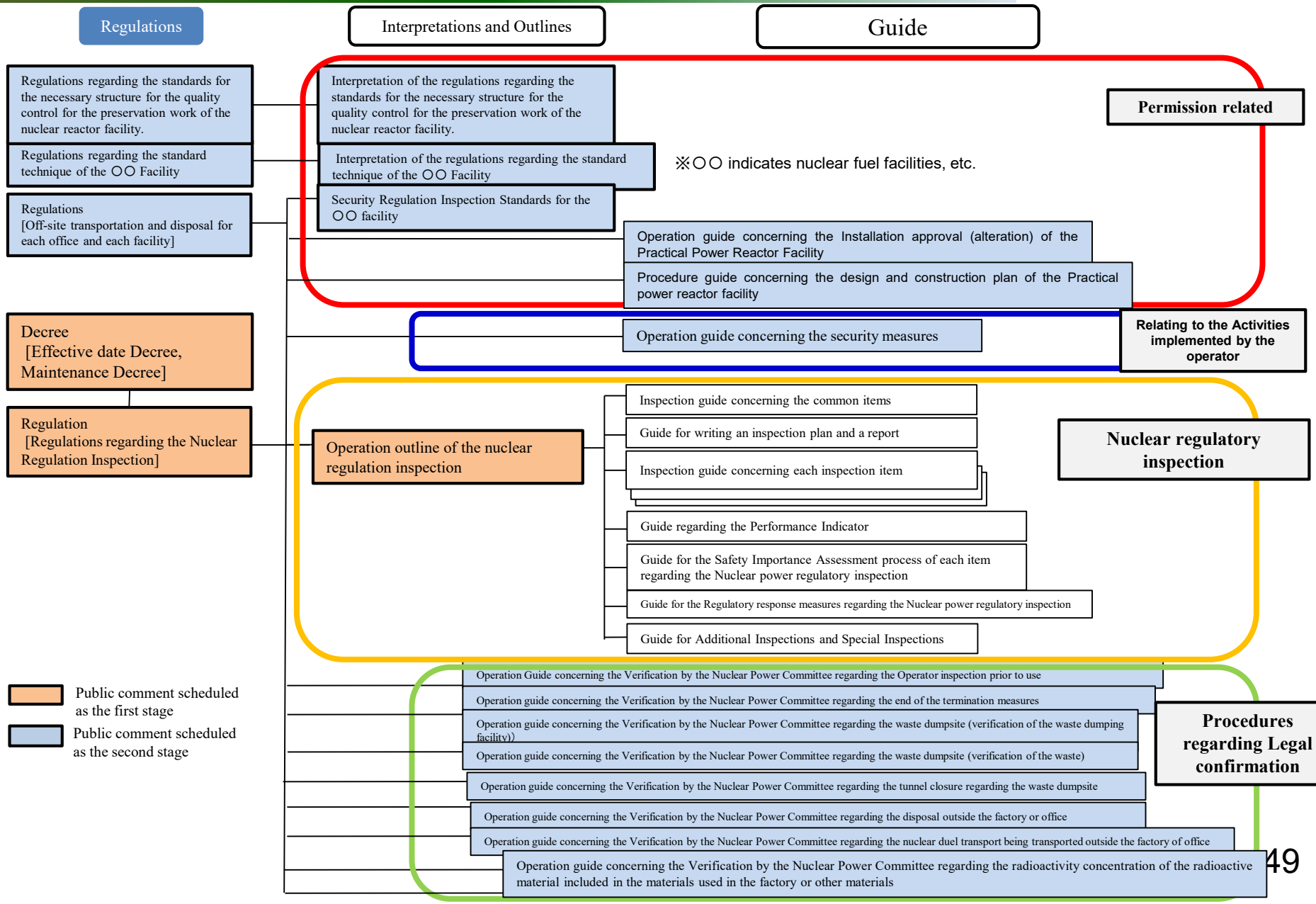
Interactions with Industry

NRA JAPAN
Nuclear Regulation Authority

Approaches to Success…

- In order to develop and improve the inspection and PI programs for regulatory oversight, it is essential to have intensive and frequent engagement with nuclear industry.
- NRA basically once a quarter holds an information exchange meeting with nuclear industry on the nuclear oversight program and results.
- NRA's activities are recognized by nuclear industry through an open and transparent dialogue with them and the NRA encourages licensees' efforts on safety improvement.

(Reference) List of Regulations and Guides



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Thank you for your attention

https://www.nra.go.jp/english/

Questions and Answers