

The Challenge of Inspection Program Reform

- From the prospective of inspection practice at sites -

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Toshiyuki Koganeya

Nuclear Regulation Authority (NRA)

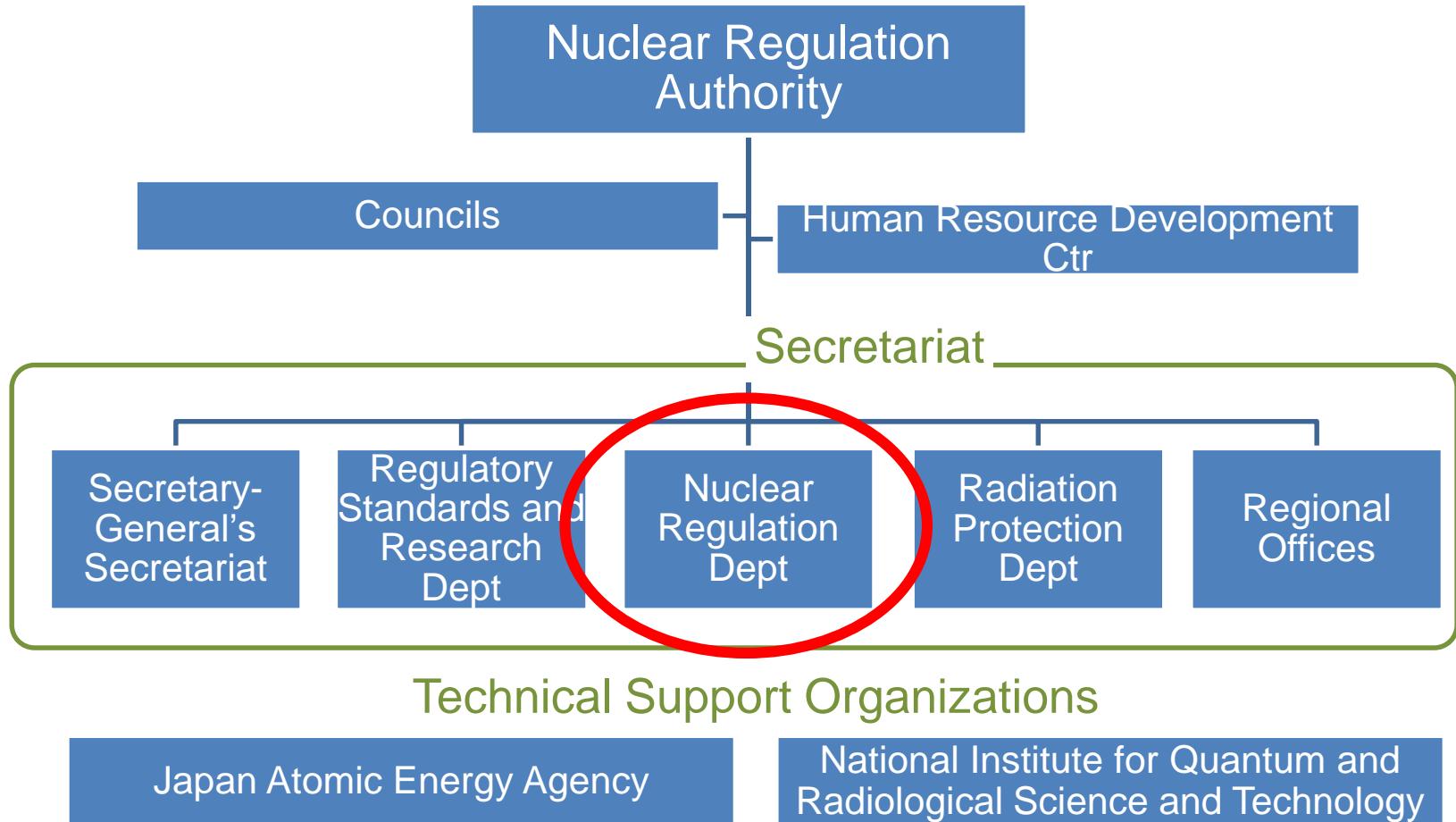
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1. Organization of the NRA

NRA Organizational Structure



検査体制

Organizations for Inspection

本庁 4 課 4 Division at the Head Quarter

- 検査総括課 Oversight Planning and Coordination Division
検査プログラムを企画立案・管理
Inspection program development and revise
- 実用炉監視部門 Division of Oversight of Nuclear Power Plants
実用炉への検査を実施。規制事務所の検査をサポート
Inspect reactors, and support resident inspectors (RIs)
- 核燃料施設等監視部門 Division of Oversight of Nuclear Fuel Related Facilities and Research Reactors
核燃料施設への検査を実施。規制事務所をサポート。
Inspect nuclear cycle facilities, support RIs.
- 専門検査部門 Division of Specified Inspection
技術的専門性の高い検査を実施。
Conduct technically specific inspections

2 2 原子力規制事務所 22 Regional Offices

- 14 for reactors, 5 for nuclear cycle facilities, 2 for both, and 1 for Fukushima Daiichi

NRA Regional Offices





2. Current Inspection

Current Inspection Program

Legal Framework

- **Licensees** are **obligated to comply with the regulatory requirements**.
- The NRA verifies if the licensees meet the requirements, and oversees licensees' operational safety activities **with many types of inspections**.

Licensees

NRA

Types of Inspection

Operational safety activities

Verification of SSCs to meet the requirements

- **Periodic Facility Inspection**
- Pre-Service Inspection
- Fuel Assembly Inspection

Operational safety activities

Surveillance of licensees' activities

- **Operational Safety Inspection**
- Safety Management Inspection on Welding
- Periodic Safety Management Review

Operational safety activities

- Obligated to comply to specific requirements
- Observation of licensees' activities

- On-site Inspection

** In addition, Inspectors conduct daily observation of plant status without any legal basis.*

運転プラントに対する主な検査

Major Inspections for Operational Plants

1) 保安検査

Operational Safety Inspection

- 事業者の様々な保安活動を検査。例えば、運転管理、施設管理、放射性廃棄物管理、是正措置活動、マネジメントレビュー
- Inspect licensees' various safety activities, such as Operation, Maintenance, Rad-waste control, CAP, and Management system

2) 施設定期検査

Periodic Facility Inspection

- 運転停止時に事業者の施設管理や施設の状況を検査。
- Inspect licensees' maintenance activities and SSCs during every outage

保安検査

Operational Safety Inspection

- 事業者の様々な保安活動（例えば、運転管理、施設管理、放射性廃棄物管理、是正措置活動、マネジメントレビューなど）を検査。法令上要求されている安全機能が維持されているかどうかまでは確認しない。

Inspect licensees' various safety activities, such as Operation, Maintenance, Rad-waste control, CAP, and Management system, but Not verify operability of safety-related SSCs

- サイト駐在検査官が実施

Done by resident inspectors,

- 四半期ごとに実施。1回あたりの期間は2-3週間

Every quarter, 2-3 weeks for one time

- 事業者の保安活動を広く検査。このため実際の保安活動を直接確認するよりも記録確認が中心。

Cover very broad safety activities of licensees, so do more record checks rather than observe intact licensee's activities

施設定期検査

Periodic Facility Inspection

- 運転停止時に安全上重要な施設の状況やその管理を検査
Inspect safety-related SSCs and licensees' maintenance activities during the outage
- 本庁の専門検査官が実施
Done by HQ inspectors
- 事業者は運転停止期間（一般的には約3か月かそれ以上）に様々な点検・保守活動を実施、それに併せて検査も実施。
Licensees conduct various maintenance/repairs during outages (generally 3 months or more), and NRA inspects those activities in accordance.
- 安全に関わる設備・機器を広く検査を行うため、実際の保守活動を直接確認するよりも記録確認が中心。
- Inspect broad safety-related SSCs, so do more record checks rather than observe real activities, such as post-maintenance tests

駐在検査官の日常活動パターン (1/2)

Typical daily activities of resident inspectors

- 8:30 オフサイトにある検査官事務所に出勤
Commute to the RI Offices located out of the site
- 9:30 検査官事務所からサイトに出勤
Commute to the sites
- 10:00 事業者の検査官担当と定例会議、提供された運転記録や要改善事項を確認
Have a daily meeting with several representatives of the licensee, where inspectors hear plant status and see operation logs, and CRs etc. provided
- 11:00 中央制御室を巡視
Control Room observation
- 12:00- 13:00 昼食 Lunch

駐在検査官の日常活動パターン

Typical daily activities of resident inspectors

12:00 昼食 Lunch

13:00- 現場巡視、事業者会議の傍聴 など

Walk-down in plants, observe meetings

16:00 事業者の検査官担当と会議

Daily Meeting with representatives of licensees

16:30 オフサイトの事務所に戻る

Commute back to the Offsite RI office

17:30 退庁

Leave the Office



3. New Oversight Program

IRRS Recommendation/Suggestions

1. Ensure inspectors' authority of **unfettered access**
2. Establish process with **more flexibility of inspections**
3. Modify **inspection program more proactive** on the basis of experience from other nuclear power plants
4. Improve and **simplify the inspection framework**
5. Increase flexibility to provide for **performance based and risk informed regulation**
6. Improve **training and re-training of inspectors**

Amendment of Reactor Regulation Act



- April 2017, Reactor Regulation Act was amended.
- Integrating various types of inspections into one inspection, Nuclear Regulation Inspection, which inspects overall licensees safety activities.
- Nuclear Regulation Inspection will start April 2020.

Pre-service inspection

Fuel assembly inspection

Welding safety management review

Periodic facility inspection

Periodic safety management review

Operational safety inspection

Nuclear Regulation Inspection

Now, New Oversight Program is being developed under this legal framework of inspection.

新しい検査プログラムの特徴（1/2）

New Oversight Program

- 米国のものに似た検査ガイドを用いて検査を実施
Use various inspection procedures similar to those of the USNRC
- リスク情報を活用して検査対象を絞り込み、限られた数の検査対象に対し技術的深みのある検査を実施。（例：安全機能が維持されているかやパフォーマンス劣化の有無を確認する。）
Sample limited number of SSCs using risk information, and conduct more technical “deep-dive” inspections (i.e. Verifying performance deficiency and operability, rather than just seeing appearance of SSCs and checking test records)
- 駐在検査官は年間を通してガイドに沿って検査を実施。
Resident Inspectors do inspection in accordance with inspection procedures whole through a year

新しい検査プログラム(2/2)

New Oversight Program

- 検査官は検査活動に必要な様々な情報や場所やスタッフ（関連企業のスタッフ含む）に自由にアクセス。

Inspectors can access licensees' data, documents, SSCs, and staffs (including contractors' staffs) necessary for their duty

- 特に駐在検査官は、昼夜・休日に関わらず、事前連絡なしに自由にサイトを訪問し、事業者の保安活動を監視する。

Especially, resident inspectors will visit NPP sites and observe licensees activities whenever they want (day/night, holydays) without any pre-announcement to licensees.

- 事業者は「低裾切り&大量」改善活動プログラムを導入し、原子力安全に関係ないものも含め、あらゆる要改善事項をこのプログラムに登録し、サイト内で広く情報の共有を図る。

Each licensee is expected to introduce a “Low-threshold High-volume” CAP, where all condition reports would be shared broadly within the licensee and inspectors as well.



4. Challenges

サイトにおける新検査制度移行に関する課題

Challenges at sites due to the transition

- 全ての検査官と事業者スタッフによる十分な理解
Full understanding of all inspectors and licensee staffs at sites on the new inspection program
- 検査慣行の大変革（例；定例会合、検査官活動の事業者内周知）
Big changes of current inspection practice; such as routine meetings, record checks, and info share of inspectors activities within licensees
- 全検査官による検査ガイドの実践
Implementation of the new inspection procedures by every inspector
- 検査官と事業者スタッフとの良好なコミュニケーション
Good communication between inspectors and licensee's staffs
- 検査官間の経験・知見の共有
Knowledge and experience sharing among inspectors



5. Summary

まとめ

Summary

- 日本では2020年4月から米国のROPと類似の新検査制度を導入予定
New oversight program, similar to that of the USNRC, will start April 2020.
- 検査官はリスク情報を活用して安全上重要なものを検査対象に選定し、検査ガイドに沿って技術的深みのある検査を実施する。
Inspectors will sample safety-related SSCs using risk information, and implement “deep-in-dive” inspections with inspection procedures
- 業務上必要な場合、事業者のあらゆるものに自由にアクセス可能になる
Inspectors can access any licensee’s staffs (data, staffs, documents etc.) which are necessary for their duty.
- 従来の検査慣行を抜本的に変更することになる。特にLow-threshold & High-volume CAPはキー。
Current inspection practice should be changed drastically. Especially, “Low-threshold & High-volume” CAP is the key.



QUESTIONS ?