

Session 3

Designing Force-on-Force Exercises Canadian Perspective



Force-on-Force Exercises

The “Why”

Why do we need Force on Force Exercises?

- ❁ **Validate** a Licensee’s ability to *Detect, Delay, Respond* to a DBT-level Security Event
- ❁ Used to **Test & Evaluate** the *Security Contingency Plan (Tactical Deployment Plan)*
- ❁ Evaluate the physical protection system to ensure it adequately supports effective response
- ❁ **Regulatory Requirement**



Force-on-Force Exercises

Guidance and Governance/Regulation



Program elements

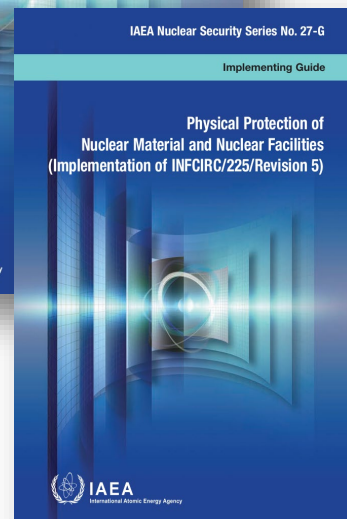
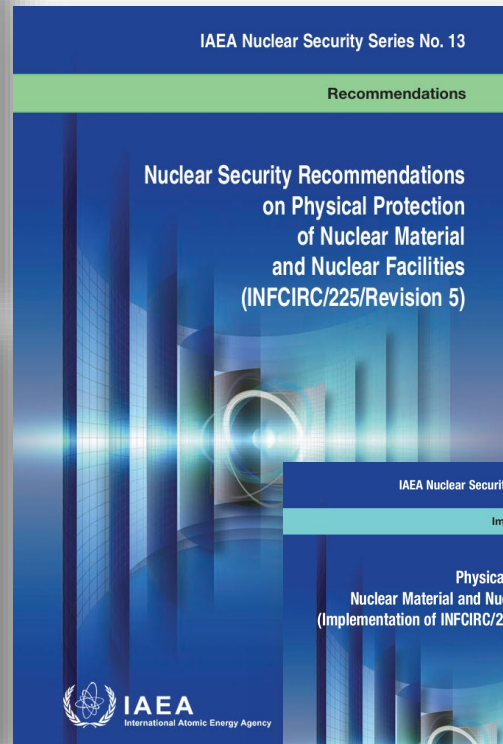
37 (1) A licensee must implement a security drill and security exercise program that, by means of physical drills, cyber security drills and security exercises, verifies and evaluates

- (a) the readiness of security personnel; and
- (b) the effectiveness of all elements of the contingency plan and the nuclear security system, including the nuclear security measures for the transport of nuclear substances.

Security exercise

39 (1) A licensee must, in cooperation with the off-site response force, at least once every two years, conduct a security exercise that tests

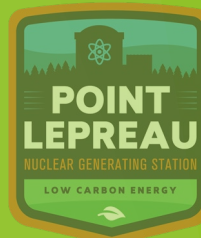
- (a) the ability of all elements of the contingency plan and the nuclear security measures to ensure that an effective intervention can be made, taking into account the design basis threat and any other threat identified in the threat and risk assessment; and
- (b) the readiness of its security personnel and the off-site response force to respond to the design basis threat and any other threat identified in the threat and risk assessment.



 Canadian Nuclear Safety Commission Commission canadienne de sûreté nucléaire



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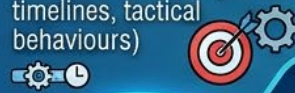


Development

FIVE STEPS FOR A NUCLEAR SECURITY FORCE-ON-FORCE EXERCISE

1. DEFINE OBJECTIVES

(DBT elements, response timelines, tactical behaviours)



2. SELECT TARGET SET & ADVERSARY GOALS

Specific examples, ex. critical infrastructure, materials, or control rooms, etc.



3. BUILD SCENARIO NARRATIVE & INJECTS

• Timeline of events, storyboards, simulation inputs for teams



5. VALIDATE, RED-TEAM, APPROVE

- Review the scenario
- Conduct adversary simulations (red-teaming)
- Formal sign-off



4. ASSIGN START STATES & PLAYER CONDITIONS

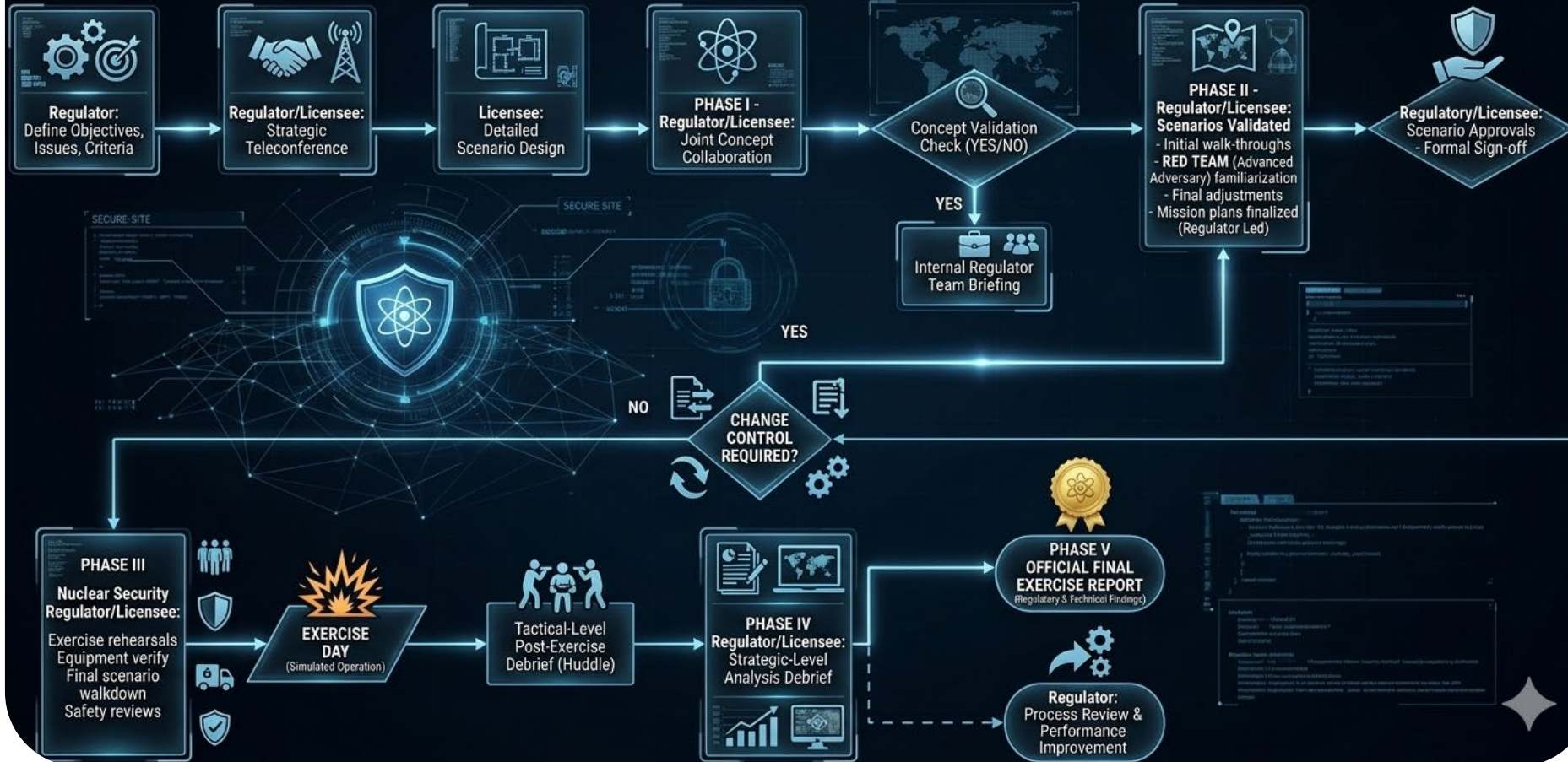
- Equipment status, rule-of-engagement, team positions, and available assets



Development: Regulatory Steps



PTP EXERCISE SEQUENCE



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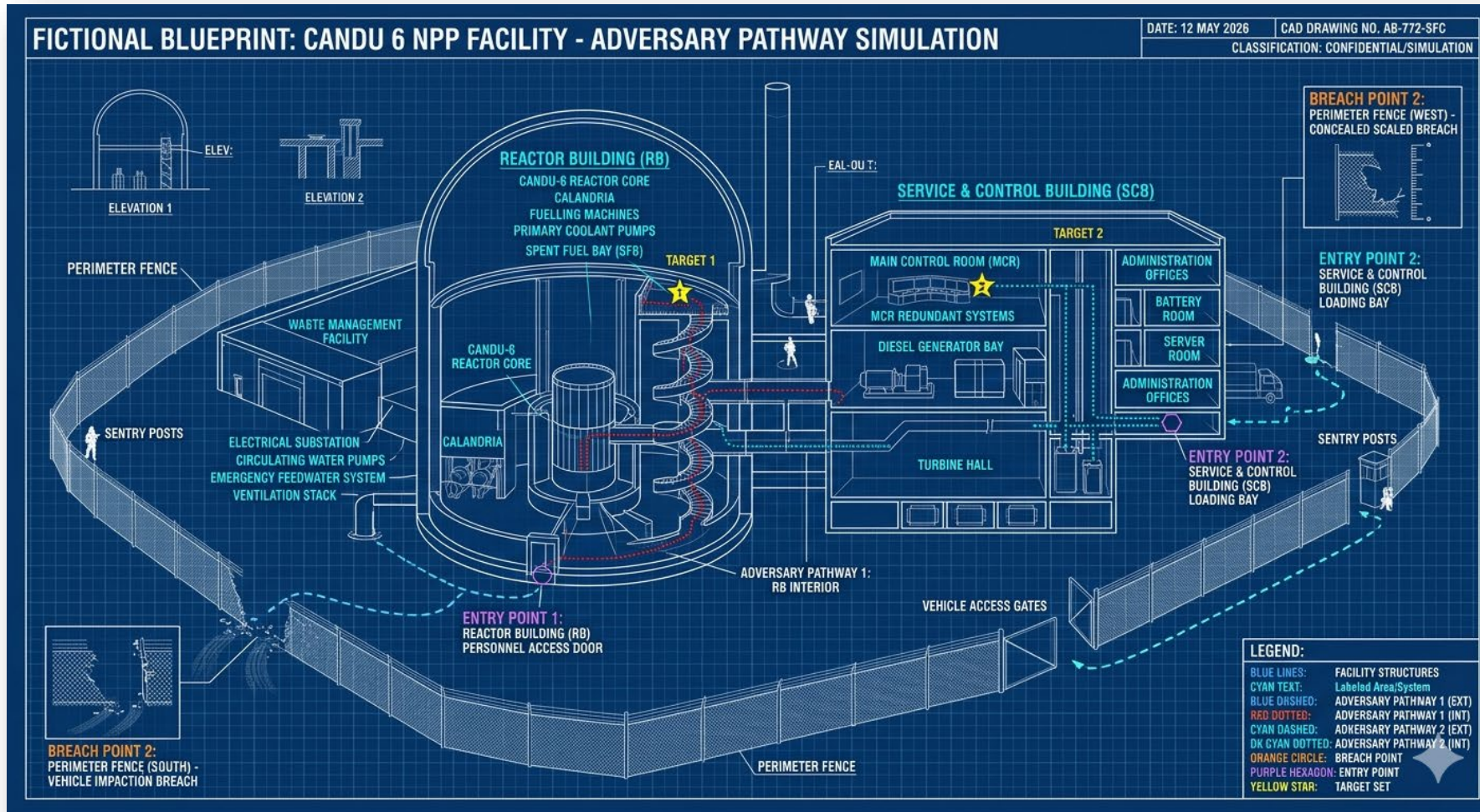
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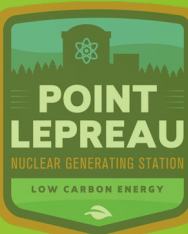
NRT
NUCLEAR RESPONSE TEAM

POINT LEPREAU
NUCLEAR GENERATING STATION
LOW CARBON ENERGY

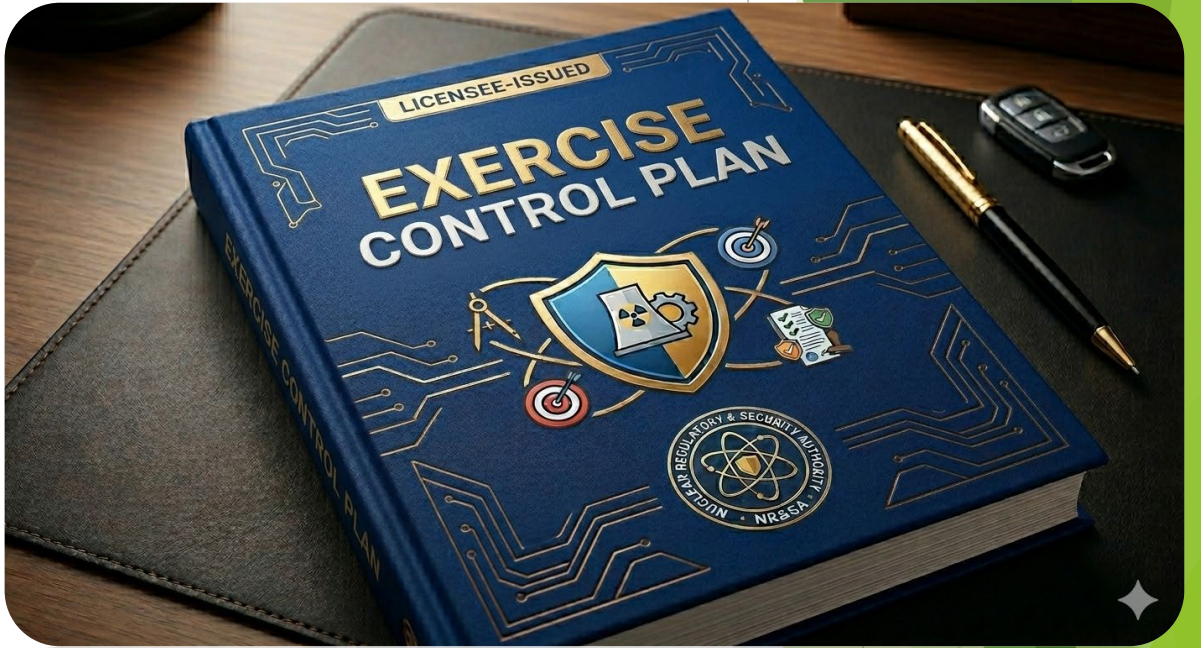
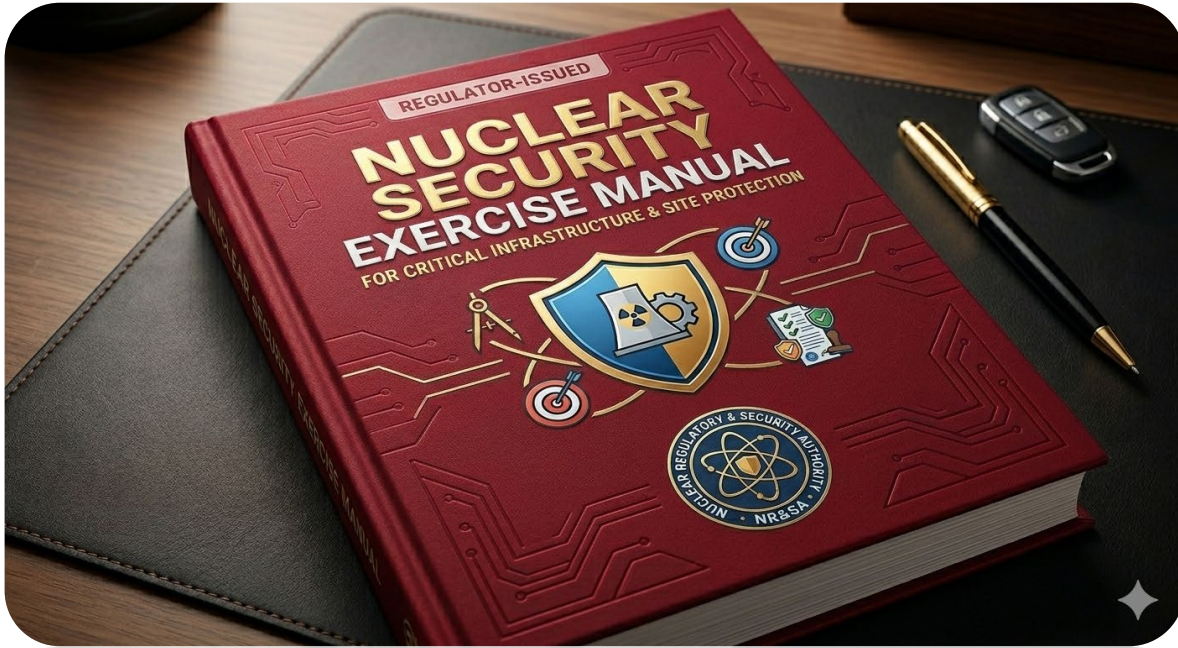
Scenario Development



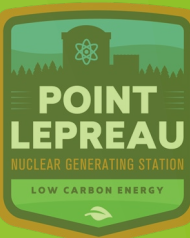
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Scenario Inputs & Constraints



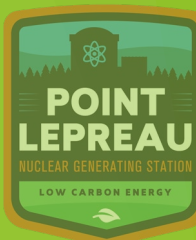
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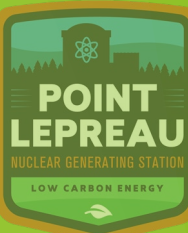
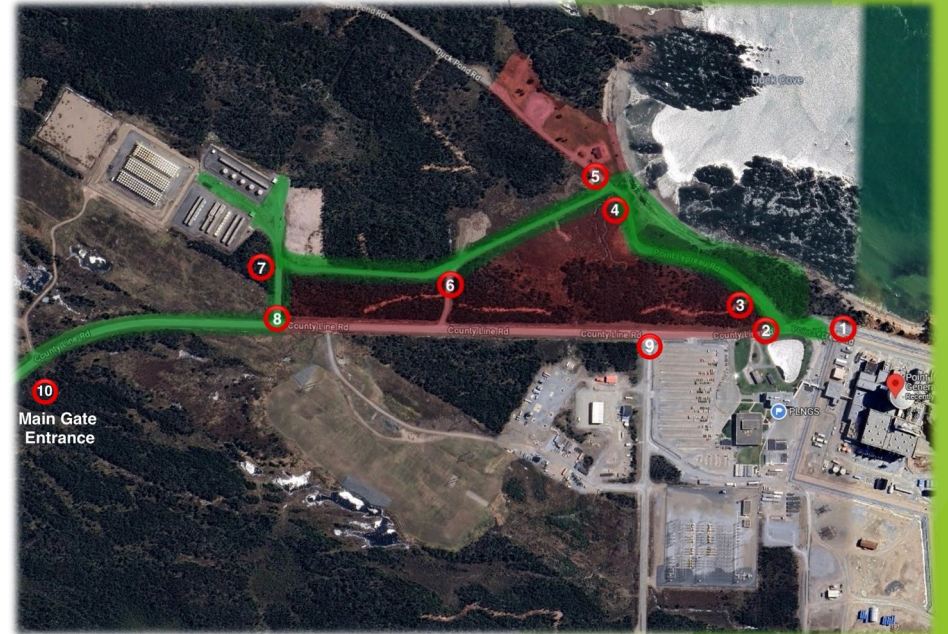
Engagement Simulation Systems



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Implementation Rules (safety & security)

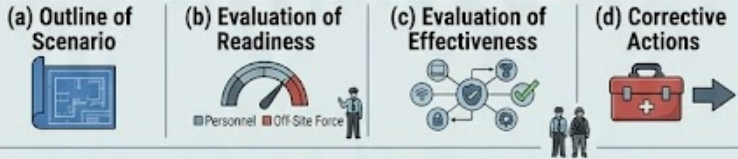


Evaluation/Corrective Actions



2025-11-19 Canada Gazette Part II, Vol. 159, No. 24

Section 40: RECORDS TO BE KEPT

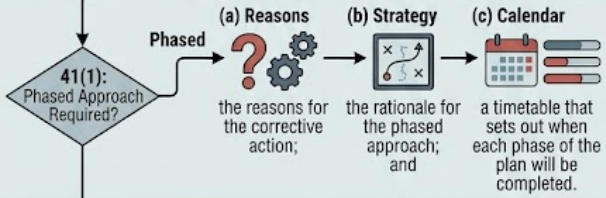


- (b) an evaluation of the readiness of its security personnel and the off-site response force;
- (c) an evaluation of the effectiveness of the elements of the contingency plan and the nuclear security measures that were tested; and
- (d) a description of any corrective actions that, taking the results of those evaluations into account, are necessary.

Section 40 (2): provided – security exercise

180 days The licensee must, within **180 days after the day** on which a security exercise is completed, provide to the Commission a copy of the record for that exercise.

Section 41 (1): CORRECTIVE ACTION PLAN



Section 41 (2): IMPLEMENTATION

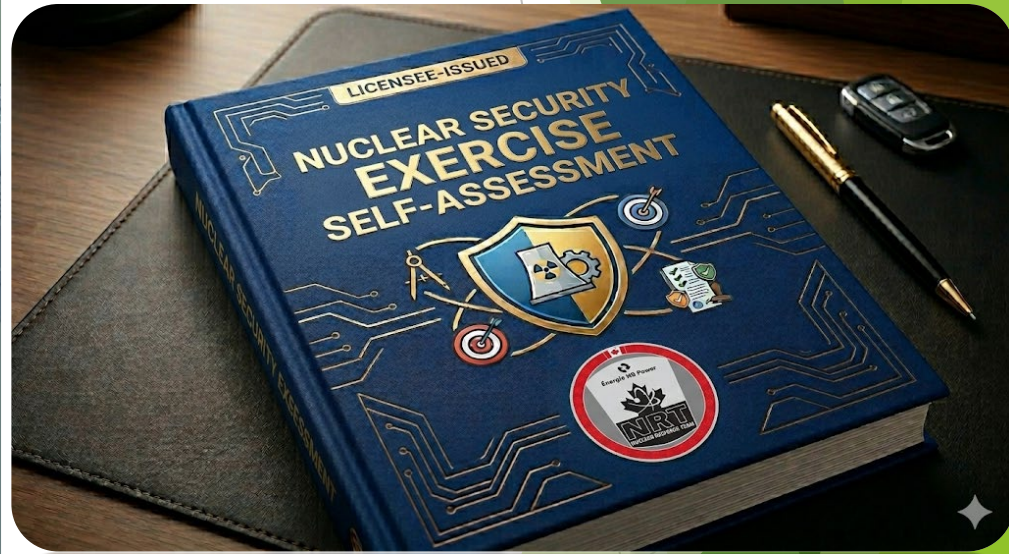
The licensee must implement the corrective actions and, if they are to be implemented using a phased approach, each phase must be completed in accordance with the timetable set out in the corrective action plan.

Section 41 (2) - Implementation:

- implementing compensatory measures as required;
- evaluating the effectiveness of each phase;
- updating the contingency plan and security measures as necessary.

Section 41 (3): CORRECTIVE ACTION PLAN TO BE PROVIDED

90 days The licensee must, within 90 days after the day on which the related security drill or security exercise is completed, provide a copy of the corrective action plan, if any, to the Commission.



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Questions?




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