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Licensee Submittals and Review and Assessment for Decommissioning [M05.L07]

**International Training Course on Regulatory Functions
for Security of Nuclear Material, Nuclear Facilities and
Associated Activities**

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NSTDC, Seibersdorf, Austria**

**Division of Nuclear Security
Department of Nuclear Safety and Security**

Learning Objectives

Upon completion of this lesson, participants should be able to:

1. Recognize that physical protection of a nuclear facility is still needed while it is being decommissioned,
2. Identify regulatory submittals that may be required during decommissioning, and
3. Understand the review and assessment activities that may need to be performed by the regulatory body during facility decommissioning.



Nuclear Security Considerations during Decommissioning (1/3)

- The Decommissioning stage includes activities that will ultimately lead to the removal of nuclear and other radioactive materials from the nuclear facility.
- The Decommissioning stage usually consists of one or more sub-stages, which may be subject to regulatory approval.



Nuclear Security Considerations during Decommissioning (2/4)



- Nuclear security requirements need to be continually reevaluated as the inventories of nuclear and other radioactive material change and may vary with decommissioning steps.
- The radioactive material may be in the form of activated and contaminated structures, systems, or components.
- Insider threat may evolve
 - Increased number of workers on-site from organizations different from the facility operator
 - Short-term assignments
 - Large number of decommissioning activities increases the potential attack vectors

Nuclear Security Considerations during Decommissioning (3/4)



- Changes in material inventories can result in:
 - New targets for adversaries
 - Different radiological consequences associated with sabotage
 - Different attractiveness levels for unauthorized removal
 - The operator should identify new targets, re-evaluate the risk of theft and sabotage, and initiate modifications to the PPS accordingly
- Changes to the existing authorization or license conditions related to nuclear security may be needed based on the status of facility decommissioning activities.
- Decommissioning activities can lead to an unusual amount of transports across the site boundary that could represent an opportunity for adversaries. Specific protection strategies may be required in those situations.

Nuclear Security Considerations during Decommissioning (4/4)



- After nuclear material is removed, new regulatory requirements may apply (only radioactive material will remain on-site). In this situation, the licensee should consider an update of the security plan to comply with the new requirements.
- The regulatory body may consider a graded approach for evaluating the adequacy of nuclear security based on site conditions and material inventories (sabotage and unauthorized removal scenarios change).
- The licensee/operator should not be permitted to lower the performance level of the facility's PPS, even after nuclear material has been removed, without prior authorization of the regulatory body.

Licensee Submittals during Decommissioning (1/3)



- When the decision is made to permanently shutdown the facility, the licensee/operator should formally notify the competent authority about the intended transition.
- The national regulatory framework may require the licensee to request an authorization for decommissioning.
 - Such authorization should be requested well before termination of operation of the facility.

Licensee Submittals during Decommissioning (2/3)



- The security plan and associated sub-plans should be revised prior to the transition to decommissioning and submitted to the CA for approval.
- The revised plan should address:
 - Identification of any new areas for storage of radioactive material and changed vital areas
 - Personnel screening and reliability programme for decommissioning vendors/contractors

Licensee Submittals during Decommissioning (3/3)



- Updates to the material inventory listing should be submitted to the regulatory body as the steps of decommissioning proceed.
- Following completion of the decommissioning programme, the licensee should submit a report to the regulatory body, declaring that all nuclear and radioactive material has been removed from the site and no security-related concerns exist.

Review and Assessment during Decommissioning (1/3)



- The competent authority should review and approve the operator's revised security plan for the decommissioning stage.
- The competent authority should review and approve the operator's revised contingency plan for the decommissioning stage and confirm its consistency with the national response plan.

Review and Assessment during Decommissioning (2/3)



- The competent authority should ensure that the licensee considers necessary changes to the PPS, including maintaining response plans (as part of the contingency plan) that may be appropriate based on the decommissioning process.
- The competent authority should adapt its inspection activities, including the scope and frequency of inspections, using a graded approach.

Review and Assessment during Decommissioning (3/3)



- After the licensee formally declares that all nuclear and radioactive material has been properly removed from the site, the regulatory body may release the site from regulatory control after appropriate verification and in accordance with national requirements.

Summary

- During decommissioning, nuclear security requirements need to be continually reevaluated as the inventories of nuclear and other radioactive material change and may vary over time.
- When the decision is made to permanently shutdown the facility, the licensee/operator should formally notify the competent authority about the intended transition.
- The competent authority should ensure that the licensee considers necessary changes to the PPS and should adapt its inspection activities using a graded approach.



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Thank you!

