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November 7, 2014

MEMORANDUM TO: Adelaide Giantelli, Branch Chief
Source Management and Protection Branch
Division of Material Safety, State, Tribal
and Rulemaking Programs
Office of Nuclear Material Safety
and Safeguards

FROM: Paul Goldberg */RA/*
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SUBJECT: QUESTIONS AND ANSWERS CONCERNING THE
APPLICATION OF 10 CFR PART 37 TO LICENSEES WITH
PART 73 SECURITY PLANS (SECOND GROUP OF
QUESTIONS FROM NUCLEAR ENERGY INSTITUTE)

The attached questions and answers are responses from the U.S. Nuclear Regulatory Commission (NRC) staff, approved by the Office of General Counsel, to questions from the Nuclear Energy Institute (NEI), provided in an email dated December 10, 2013, on how 10 CFR Part 37, Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material, applies to nuclear reactors and other facilities with security plans under 10 CFR Part 73. They have been made public on the NRC Web site at <http://www.nrc.gov/security/byproduct/> and provided to NEI.

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Responses to NEI Part 37 Questions Provided on December 10, 2013

1. Large Components and Exemptions

Over 65% of power reactor sites will have large equipment weighing in excess of 2000 kg (e.g., steam generators, reactor heads, contaminated turbine equipment, etc.) housed outside their Protected Areas, but within the Owner Controlled Area. These materials are self-protecting and should be exempt from the requirements of Part 37, in accordance with Part 37.11. Part 37.11(a), "The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest".

NRC RESPONSE:

NRC issued an Enforcement Guidance Memorandum (EGM), 2014-001, on March 13, 2014, (<http://pbadupws.nrc.gov/docs/ML1405/ML14056A151.pdf>), that deals, in part, with this issue. This EGM will remain effective until the underlying technical issue is dispositioned through rulemaking or other regulatory action. If a licensee has large components that are not covered by this EGM, a licensee may request individual exemptions under 37.11(a). NRC cannot grant a general exemption from major provisions of the rule, as suggested by the comment, since a general exemption could potentially be seen as circumventing the notice and comment requirements of the Administrative Procedures Act.

2. 37.11 Exemptions for Part 73 Security Plans (Credit for 10 CFR 73.55 (i)(5)(ii))

Materials (risk significant materials) of concern within the OCA located such that they are covered by the requirements of 10 CFR Part 73.55(i)(5)(ii) which states, "Continuous surveillance, observation, and monitoring responsibilities may be performed by security personnel during continuous patrols through the use of video technology, or by a combination of both." Licensee security plans required by Part 73 implement that rule requirement. Since this requirement is addressed in the Part 73 security plan, Part 37.11(b) applies and no other actions are required.

NRC RESPONSE:

See the response to previous questions, particularly the consolidated response to Questions 3, 4, 8, 9, 10 and 11, provided to NEI March 13, 2014 at <http://www.nrc.gov/security/byproduct/nei-pt-37.pdf>.

3. Part 73 Security Measures

Part 37 materials of concern stored inside the Protected Area (PA) are covered by requirements as delineated in the Physical Security Plan (PSP) for power reactors. Therefore, no further actions should be required for this material.

A Part 73 plan does not provide a broad exemption from Part 37. The scope of Part 73 does not include the radionuclides of concern in Part 37. However, as stated in the October 9, 2013 response to questions from NEI, "Generally, if risk significant byproduct material is inside the protected area (PA) of a power reactor, ISFSI or Category I SNM facility, the existing physical security measures required by Part 73 for the PA would provide protection equivalent to or greater than that required by the 10 CFR Part 37 performance requirements." (Consolidated

response to Questions 3, 4, 8, 9, 10 and 11; <http://www.nrc.gov/security/byproduct/nei-pt-37.pdf>) If a licensee is using its Part 73 security plan to meet the Part 37 requirements, the Part 73 security plan must be revised to include the Part 37 material in the protective strategy.

These measures must be documented in either a Part 37 plan or a Part 73 plan. The response to question No. 3 in the October 9, 2013 response to questions from NEI states that "The documentation should identify the 10 CFR Part 73 protective measures that are being credited (e.g., background investigations, access controls, and physical protection (such as access controls, physical barriers, intrusion alarms, weapons, tactical response))."

4. Part 73 Security Plans

What is the level of detail to be included in a Part 73 security plan in order to comply with Part 37.11(b), "Any licensee's NRC-licensed activities are exempt from the requirements of subparts B and C of this part to the extent that its activities are included in a security plan required by part 73 of this chapter?"

NRC RESPONSE:

See the section "Part 73 Security Plans" in the consolidated response to Questions 3, 4, 8, 9, 10 and 11; <http://www.nrc.gov/security/byproduct/nei-pt-37.pdf>.

| Subject | Question | NRC Response |
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| <p>1. Waste Exempted from Subparts B, C, D</p> | <p>37.11(c) This section exempts radioactive waste that contains category 1 and category 2 quantities of radioactive material from the requirements of subparts B, C, and D of part 37.</p> <p>NUREG 2155-37.11(c) Q&A-Q3 discussion identify 'rubble and removed components' as waste once decommissioning has begun and 10 CFR Part 37 would then apply.</p> <p>My question is related to the applicability of 10 CFR Part 37.71 for components such as reactor vessel heads, steam generators that are transferred from the licensee classified as radioactive waste and contain 'diffuse category 1 or category 2 quantities of radioactive material.</p> <p>Note: The licensee is still operating and not decommissioning and dismantling the facility.</p> <p>(AM)</p> | <p>37.11(c) exempts wastes (other than discrete sources, ion exchange resins, and activated material weighing less than 2000 kg) with Category 1 or 2 quantities of material from Subparts B, C, and D of Part 37. The large components in question would be exempt from Subparts B, C, and D if they are waste materials that weigh more than 2000 kg.</p> |
| <p>2. Components and Activated materials</p> | <p>37.11(c) –NUREG 2155 37.11(c) Q&A-Q2 and Q3- What does the NRC consider to be components when referring to 'activated materials in walls and components'?</p> <p>(AM)</p> | <p>The phrase “activated material” means physical objects (such as walls or metal components) that have become radioactive by neutron irradiation. For example, control rod blades that have been exposed to neutron flux are activated material in components.</p> |

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| <p>3. Radwaste filters</p> | <p>37.11(c) – Are radioactive waste filters packaged in a High Integrity Container (HIC) classified by the licensee as radioactive waste exempt from Subparts B, C and D when it contains:</p> <ol style="list-style-type: none"> 1. Diffuse category 1 or category 2 quantities or 2. Category 1 or category 2 radioactive material quantities. <p>(AM)</p> | <p>Radioactive waste other than discrete sources, ion-exchange resins, or activated material that weighs less than 2,000 kg (4,409 lbs)) is exempt from the security requirements of 10 CFR 37, subparts B, C, and D. Therefore, if the aggregated waste in a package weighs less than 2,000 kg it must meet the requirements in Part 37, subparts B, C and D.</p> <p>If the aggregated waste in a package weighs more than 2,000 kg, it is exempt from the requirements in subparts B, C and D of Part 37. However, the exempted radioactive waste must be protected in accordance with the security requirements for exempted waste in 10 CFR 37.11(c)(1) through (4</p> <p>Note: A licensee with radioactive waste filters stored inside robust structures should review the Enforcement Guidance Memorandum (EGM) 2014-001, to see if the EGM may apply.</p> |
| <p>4. Radwaste filters vs. Ion exchange resin</p> | <p>37.11(c) What is the rationale for the security requirements of Parts 37 Subparts B, C, and D applying to ion-exchange resin that contain category 1 and category 2 quantities of radioactive material but the same requirements do not apply to spent filter cartridges that contain category 1 and category 2 quantities of radioactive material?</p> <p>(AM)</p> | <p>The NRC considered, among other things, specific activity level and the dispersibility of the material when drafting the 37.11(c) exemption. In future evaluation of Part 37, NRC will consider the need to apply Subparts B, C and D to spent filter cartridges.</p> |

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| <p>5. Protection of SGI-M information</p> | <p>37.77(f) Protection of Information requires the schedule information furnished in advance notification of shipment of category 1 quantities of radioactive material (37.77(b)) to be protected against unauthorized disclosure as specified in 10 CFR 73.21.</p> <p>I understand that all records generated under Part 37 will no longer be designated SGI-M once the new immediate direct rule in SECY-13-0045 is final. When that document is final next March 19, 2014 then sensitive information generated under Part 37 will then be protected under 37.43(d).</p> <p>Are the records generated in 10 CFR 37 identified based on whether a licensee is required to protect that information in accordance with 37.43(d) or will the licensee need to make that determination?</p> <p>(AM)</p> | <p>Information to be protected is defined in 37.43(d) as the security plan, implementing procedures, and the list of individuals that have been approved for unescorted access.</p> <p>The advance notification information required by 37.77(b) that is now protected under 73.21 will be protected under 37.43(d) when the new SGI-M rule becomes effective.</p> <p>The new rule, described in SECY-13-0045, is expected to be issued in the next few months.</p> |
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| <p>6. Transportation requirements</p> | <p>10 CFR Part 37 Subpart D –</p> <p>Is a licensee implementing this subpart also required to implement 49 CFR 172 Subpart I- Safety and Security Plans or does 10 CFR Part 37 subpart D meet the requirement of 49 CFR 172.804?</p> <p>(AM)</p> | <p>Both 10 CFR 37 Subpart D and 49 CFR 172 requirements must be met. However, in accordance with the NRC and DOT regulations cited below, protective measures established in the Part 37 plan may be used to satisfy elements of the DOT requirements.</p> <p>NRC Regulation 10 CFR 71.5, “Transportation of licensed material” specifies requirements for the transportation of licensed material on public highways, or for persons who deliver licensed material to a carrier for transport. The NRC regulations require licensees to comply with the applicable requirements of the DOT regulations in 49 CFR Parts 107, <u>171 through 180</u>, and 390 through 397.</p> <p>49 CFR 172.804, “Relationship to other Federal requirements.”</p> <p>To avoid unnecessary duplication of security requirements, security plans that conform to regulations, standards, protocols, or guidelines issued by other Federal agencies, international organizations, or industry organizations may be used to satisfy the requirements in this subpart, provided such security plans address the requirements specified in this subpart.</p> |
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| <p>7. Security for radwaste shipments in preparation for transit</p> | <p>37.47– When a licensee is in the process of completing shipping papers to transfer a category 1 or category 2 quantity of radioactive material to a carrier outside of the protective area but inside of the owner control area, what are the applicable requirements related to 'security zones'?</p> <p>Does this requirement in Subpart C apply to a licensee implementing Subpart D that is exempt from Subpart B and Subpart C under 37.11(b)</p> <p>(AM)</p> | <p>If the material is subject to Subparts B and C, the licensee must use and store the material within a security zone. This would include waste materials.</p> <p>If the material subject to Subparts B and C has been moved outside the PA in preparation for transport, it remains subject to Subparts B and C and also to Subpart D., Licensees may satisfy these requirements by establishing a temporary security zone in accordance with 37.47(b) that provides the required protective measures.</p> <p>For Category 1 or 2 waste materials exempted from Subparts B, C, and D under 37.11(c) the waste is only subject to 37.11(c)(1-4) while in storage on site. Once the shipment begins, the waste is subject to DOT transportation security requirements.</p> |
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| <p>8. Large components storage (cont.)</p> | | <p>subject to Subparts B and C or to 37.11(c) (1-4), they would remain subject to those requirements</p> |
| <p>9. Exempt radwaste requirements</p> | <p><u>Initial Licensee Question 12</u> Can NRC please explain in detail the exemption in 37.11(c) as it applies to LLW?</p> | <p><u>Initial NRC Response</u> The security requirements of Part 37 Subparts B, C and D apply in their entirety to the following wastes that contain Category 1 and 2 quantities:</p> |
| | | <ul style="list-style-type: none"> • discrete sources • ion-exchange resins • activated material < 2,000 kg (i.e., irradiated metal or concrete) |
| | | <p>Other waste forms are exempted from the security requirements of Subpart B, C, and D. However, these waste forms, such as contaminated clothing, gloves, soil, or low specific activity waste must meet the security requirements of §37.11(c) (1) through (c) (4) if they contain Category 1 and 2 quantities.</p> |
| | <p><u>Follow-up Licensee Question 12</u> Under 37.11(b), licensees (with Part 73 security plans) are exempt from Subparts B and C. Are those licensees also exempt from the radwaste security requirements in 37.11(c)?</p> | |
| | <p>(EA)</p> | <p><u>Follow-up NRC Response</u> As explained in NUREG-2155, licensees with Part 73 plans are exempt from Subparts B and C only to the extent that their licensed activities are provided an equivalent or greater level of protection as documented under their Part 73 plan. An exemption under 37.11(b) would not exempt licensees from the 37.11(c) radwaste security requirements, which are in Subpart A.</p> |

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| | <p>What about large areas of equipment storage or in open areas of the power block in the plant or Protected Area? This would not be waste material, but all of the equipment in a large storage area might exceed category 2. This clarification is key as all power plant licensees have storage areas for equipment</p> <p>Should sites estimate Curie content of equipment aggregated within the plant or within the Protected Area? While there may not be a Subpart B or C requirement inside the Protected Area, is it expected that all areas inside the Protected Area have the activity quantified?</p> <p>If areas inside the Protected Area are generically exempt as part of the Part 73 program, would the Protected Area itself just be considered a single "Security Zone"?</p> <p>Shouldn't equipment items or areas receive a similar exemption from B, C, and D similar to diffuse types of wastes specified in 37.11(c) or is that implied? (EA)</p> | <p>Licensees must define their own licensee-established security zones in accordance with Part 37.47(a). Licensees could choose to define the Protected Area as a single security zone or define multiple security zones within the Protected Area. Within a security zone, if material is separated by barriers so that the breach of any one barrier would not permit access to an aggregated quantity, the material is not considered aggregated. A physical barrier is a natural or manmade structure or formation sufficient for the isolation of a category 1 or category 2 quantity of radioactive material within a security zone. One crucial distinction is between security zones and barriers. Not all the material within a security zone is aggregated: there can be barriers within the security zone that separate the material. Aggregation is based on the ability to gain access to the material by the breach of a single barrier.</p> <p>In order to determine whether Part 37 requirements are applicable, licensees should determine whether materials accessible by the breach of a single barrier contain activity aggregating to Category 2 levels. Licensees are allowed to conservatively bound the amount of activity as "more than" or "less than" a Category 2 amount of activity. Licensees may find it useful to put the activity into material categories; e.g., ion exchange resin, filters, equipment contamination.</p> <p>Areas inside the protected area are not exempt from Part 37 if the aggregated material exceeds a Category 2 quantity. However, licensees are allowed to use their part 73 plans to protect the material from theft and diversion as required by Part 37.</p> <p>37.11(c) exempts diffuse wastes from Subparts B, C, and D but they remain subject to 37.11(c) (1-4). There is no exemption in Part 37 for equipment items or areas. 37.11(a) allows licensees to apply for exemptions from requirements if they can articulate a basis for meeting the exemption criteria.</p> |
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| <p>11. New Reactors</p> | <p>How does 10 CFR 73 and/or 10 CFR 37 apply to new reactors during construction (e.g., a shepherd calibrator may be shipped to new site under construction and need to store for a period of time)?</p> <p>(EA)</p> | <p>If the Part 73 plan is in effect, and documents the protection of the material at a level equivalent to or greater than Part 37, the calibrator is protected. If the Part 73 plan does not provide at least an equivalent level of protection, then a Part 37 plan must be established and implemented. See also Part 37.41.</p> |
| <p>12. Robust structures</p> | <p>We have a radwaste facility located outside the PA. The facility is used to process liquid waste and store primary resins and filters until packaged and shipped for disposal. Access is controlled with a card reader. A single liner is stored in a bunker. Each bunker is covered by a large shielding block. Removal of the shield blocks can only be performed using an overhead crane. Several questions, could a facility like this be exempted from 10 CFR 37 similar to S/G mausoleums?</p> <p>If not, do all the liners stored in each of the bunkers need to be aggregated to determine if Cat 1 or 2 quantities are exceeded?</p> <p>(EA)</p> | <p>Licensees may apply for exemptions in accordance with Part 37.11 and provide justifications for the exemption requests.</p> <p>The facility as described may be subject to enforcement discretion as provided by EGM 2014-001. In the absence of an exemption or enforcement discretion, licensees must provide the protective measures required by Part 37. There is no exemption from Part 37 for steam generator mausoleums.</p> <p>Licensees need to define their security zones, and determine whether the aggregated material accessible by the breach of a single barrier reaches the Category 2 activity level. See Q&A # 14 below.</p> |

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| <p>13. Waste ready for Transport</p> | <p>For waste packaged and ready for transportation for disposal that exceeds Cat 1 or 2 quantities, who has the responsibility for ensuring compliance with 10 CFR 37 when the waste leaves the PA (transporter or power reactor licensee,) inside the owner controlled area, and on the highway? My concern is that in most cases the vendor will not accept title to the waste until it arrives at the disposal or processing facility.</p> <p>(EA)</p> | <p>As long as the licensee is in possession of material subject to Part 37, the licensee must comply with the rule. If the waste material is onsite, whether in the PA or outside the PA, the licensee is responsible for the security of the material until the transportation carrier accepts the consignment for shipment.</p> <p>For material that is staged for shipment, the licensee may protect the material by establishing a temporary security zone around the material. In accordance with the Federal Register Notice, 78 FR, No. 53, p. 16933, "Similarly, when work is being done inside a temporary zone, a licensee could meet the requirements for controlling unescorted access by having the material, persons, and area within the zone under direct control of approved individuals at all times."</p> <p>For material in transit, see pp. 240-243 of NUREG-2155, particularly Q&A # 5 on p. 242 (excerpted below):</p> <p>Q5: 10 CFR 37.79(a)(2) requires constant control and/or surveillance "during transit." When does "transit" begin and end for the purposes of this requirement?</p> <p>A5: In general, transit begins when the carrier accepts the consignment of radioactive material for shipment. Transit ends when the receiving licensee accepts the shipment from the carrier.</p> <p>During transport, the material must be protected in accordance with Subpart D (e.g., using movement control centers and direct control and constant surveillance).</p> <p>The shipping licensee is responsible for meeting the requirements unless the receiving licensee agrees in writing to arrange for the in-transit physical protection, including preplanning and coordination activities. A shipping licensee that uses a carrier must ensure that the carrier can meet the physical protection requirements for shipments.</p> |
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| <p>14. Aggregation</p> | <p>Aggregated definition - Sea/land containers are large enough to be a storage area, yet are also containers in transit. Would several sea/land containers grouped together be individual security zones as each is protected by its individual barrier?</p> <p>Would the amount of aggregated material be that material in each Sea/Land container or based on all the containers combined? (EA)</p> | <p><i>Aggregated</i> means accessible by the breach of a single physical barrier that would allow access to radioactive material in any form, including any devices that contain the radioactive material, when the total activity equals or exceeds a category 2 quantity of radioactive material.</p> <p>Whether material is aggregated depends on whether access to it requires the breach of one barrier, not on how much is in a security zone. Licensees may define each Sea/land container as its own security zone, or licensees may define a security zone as having multiple containers. Within a security zone, if material is separated by barriers (e.g., locked Sea/Land containers), so that an aggregated amount would be accessible only by the breach of multiple barriers (for example breach of two SeaLand containers), the material is not considered aggregated.</p> <p>If Sea/Land containers with material are not locked, then the material is considered aggregated.</p> |
| <p>15. Licensee Verification Systems</p> | <p>37.71: Based upon the exemptions in 37.11(b) and (c), is the Licensee Verification System only required for category 2 or higher waste discrete sources, ion exchange resins, activated metal <2000 kg, and non-waste byproduct equipment or source shipments? Shouldn't non-waste byproduct material like equipment shipments be exempt like other diffuse sources of waste in 37.11(c)? (EA)</p> | <p>Under the rule, license verification is required under 37.71 for transfers of Category 1 or 2 material (except for waste exempt from Subparts B, C and D under 37.11(c)).</p> <p>The transport of Category 1 and 2 materials (other than waste materials exempted in 37.11(c)), whatever the form, is subject to license verification and other requirements of Part 37. EGM-14-001 provides the possibility of enforcement discretion for large components and material in robust structures.</p> |

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| <p>16. Material inside fences</p> | <p>If there is a locked building that contains several locked fences (different lock from each other and the building door) and radioactive material in any fenced in area is less than category 2 quantities of radioactive material, is this considered not aggregated in which Part 37 does not apply?</p> <p>(RL)</p> | <p>If an adversary has to breach more than one physical barrier to gain access to radioactive material located in different areas within the building or room to equal a Category 2 or greater quantity of material, the material would not be considered aggregated and would not be subject to Part 37 security measures.</p> <p>If the building or fence is robust enough to constitute a physical barrier, the material is considered isolated. Under 10 CFR 37.47(c) (1), a physical barrier is a natural or manmade structure or formation sufficient for the isolation of a category 1 or category 2 quantity of radioactive material within a security zone.</p> |
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