

June 29, 2026

Subject: Breakthrough Institute Comment on Modernizing NRC Regulations for Byproduct Material Use, Docket ID NRC-2025-1205.

The Breakthrough Institute (BTI) appreciates the opportunity to comment on the Nuclear Regulatory Commission's proposed rule, *Modernizing NRC Regulations for Byproduct Material Use* (Docket ID NRC-2025-1205, RIN 3150-AL49).¹ BTI is an independent 501(c)(3) global research center that advocates for appropriate regulation and oversight of nuclear reactors and radioactive materials to enable the new and continued use of safe and clean nuclear energy. BTI acts in the public interest and does not receive funding from industry.

BTI has participated in the related rulemakings that the NRC is promulgating in response to direction under Executive Order 14300² and the ADVANCE Act,³ including the proposed modernization of physical protection requirements for Category 1 and Category 2 quantities of radioactive material⁴ and the proposed regulatory framework for fusion machines.⁵ This comment draws on that record. BTI supports the NRC's effort to modernize the byproduct material framework and to remove requirements that no longer carry safety or security weight, and several of the proposed changes should be finalized as drafted. The recommendations below concern a small number of issues where the final rule's statutory durability, administrability, and internal consistency would benefit from clarification.

Several of these recommendations could be addressed by the NRC in the final rule preamble, the planned interim staff guidance, or the NUREG-1556 series rather than through regulatory text. Where BTI recommends a guidance clarification, the NRC should preserve the relevant performance expectation in the final rule record.

¹ Nuclear Regulatory Commission, *Modernizing NRC Regulations for Byproduct Material Use*, Proposed Rule, 91 Fed. Reg. 28916 (May 18, 2026) (Docket ID NRC-2025-1205, RIN 3150-AL49) <https://www.federalregister.gov/documents/2026/05/18/2026-09877/modernizing-nrc-regulations-for-byproduct-material-use>, (*Hereinafter Proposed Rule*).

² Exec. Order No. 14300, *Ordering the Reform of the Nuclear Regulatory Commission*, 90 Fed. Reg. 22587 (May 29, 2025).

³ ADVANCE Act, Pub. L. No. 118-67, § 401, 138 Stat. 1462 (2024).

⁴ The Breakthrough Institute, *Comment on Modernizing Requirements Relating to Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material*, Docket ID NRC-2025-1238, May 11, 2026, <https://www.regulations.gov/comment/NRC-2025-1238-0033>.

⁵ The Breakthrough Institute, *Comment on Proposed Regulatory Framework for Fusion Machines*, Docket ID NRC-2023-0071, May 27, 2026, <https://www.regulations.gov/comment/NRC-2023-0071-0107>.

SUMMARY OF RECOMMENDATIONS

BTI offers five principal recommendations:

1. Consider eliminating the duplicative compliance for SNM-LSS by retaining the § 73.67 nexus and providing that compliance with it satisfies the corresponding §§ 20.1801 and 20.1802 obligations. Otherwise, identify the statutory basis under section 274 of the Atomic Energy Act for relinquishing the oversight associated with the § 73.67 physical protection of special nuclear material of low strategic significance, and explain whether Agreement State programs will require protection equivalent to that objective rather than relying on observed current storage practice.
2. Specify the enforceable standard against which standard general license registrants will be inspected, and explain the basis for the proposed allocation of the Subpart C provisions across compatibility categories, because the framework's national-market rationale depends on uniform adoption that the proposed allocation does not ensure.
3. Preserve a notification mechanism that maintains NRC awareness of newly abandoned irretrievable downhole sources under § 39.77(c)(1), distinct from the procedure-approval step the proposed deletion addresses.
4. Finalize the consortium and decommissioning financial assurance changes that support medical and PET radionuclide production, and, for the expanded microsource distribution pathways, characterize the new distributor population the rule would authorize.
5. Address, in the final rule preamble, how the modernized Part 30 framework interacts with the parallel Part 37, fusion machine, and medical use (Part 35) rulemakings.

I. DELETION OF 10 CFR 150.14 AND THE STATUTORY BASIS FOR RELINQUISHMENT

10 CFR § 150.14 requires Agreement State licensees that possess special nuclear material of low strategic significance (SNM-LSS) to meet the physical protection requirements of 10 CFR § 73.67.⁶ The proposed rule would delete § 150.14 and rely on the security requirements in §§ 20.1801 and 20.1802, administered by the Agreement States, as an adequate substitute. The NRC reserved regulation of SNM-LSS under its common defense and security authority; for that reason Agreement State licensees, otherwise regulated by their States, must comply with § 73.67 pursuant to § 150.14. The proposed substitution therefore replaces a security control the NRC has reserved with radiological safety controls that the Agreement States would administer. The concurrent proposed rule on Modernizing Security Requirements does not address this core issue, while validating our recommendations.⁷ This is further addressed in Section V.

The NRC's own Temporary Instruction 2800/044 makes the case that the AEA requires NRC reserved authority above the § 150.14 thresholds, and that the instruction existed precisely because no systematic NRC oversight program was in place for that retained function.⁸ Physical protection against theft and diversion under § 73.67 and radiological safety under §§ 20.1801 and 20.1802 are distinct objectives resting on distinct authorities, even where the physical measures overlap. Treating the safety provisions as discharging the reserved security function collapses that distinction.

Section 73.67(f) requires a controlled access area, intrusion detection, a response capability, and procedures for responding to theft; §§ 20.1801 and 20.1802 require securing stored material from unauthorized removal and maintaining control and surveillance of material not in storage. A licensee that meets § 73.67 necessarily satisfies the storage-security objective of §§ 20.1801 and

⁶10 CFR § 150.14, "Persons in Agreement States possessing, using or transporting special nuclear material of low strategic significance in quantities greater than 15 grams of plutonium or uranium-233 or uranium-235 (enriched to 20 percent or more in the U-235 isotope) or any combination greater than 15 grams when computed by the equation grams=grams uranium-235+grams plutonium+grams uranium-233 shall meet the physical protection requirements of § 73.67 of 10 CFR part 73."

⁷ *Modernizing Security Requirements*, 91 Fed. Reg. 38928 (proposed June 26, 2026) (Docket ID NRC-2025-1303, RIN 3150-AL53)

⁸Temporary Instruction 2800/044, "Assessment of Physical Protection Requirements under § 150.14 for Agreement State Licensee Processing, Using, or Transporting Special Nuclear Material of Low Strategic Significance" (Mar. 6, 2023) (ML22091A049).

20.1802, but the converse does not hold. The likely consequences of this are likely negligible from a diversion standpoint, but the legal consequences if the rationale is not thorough are a larger risk.

The burden at stake is small by the agency's own account. The preamble identifies 10 affected Agreement State licensees, and the regulatory analysis characterizes the resource savings from the deletion as minimal.⁹ Where the efficiency gain is this limited, the option that has the fewest secondary effects is the better course. The duplicative compliance the NRC seeks to remove arises from applying two overlapping security regimes to the same material. Because § 73.67 already subsumes the storage-security objective of §§ 20.1801 and 20.1802, the NRC can eliminate that duplication by retaining the § 73.67 nexus and providing that compliance with § 73.67 satisfies the corresponding obligations under §§ 20.1801 and 20.1802 for the same material automatically. That approach delivers the practical relief the rule seeks: a single security program and a single inspection basis, without relinquishing a reserved function or substituting a safety control for a security one.

Recommendation. The NRC should achieve the intended reduction in duplicative compliance by retaining the § 73.67 nexus for SNM-LSS and providing that compliance with § 73.67 satisfies the corresponding obligations under §§ 20.1801 and 20.1802, rather than by deleting § 150.14 and relinquishing a function it has reserved under its common defense and security authority. If the NRC proceeds with the deletion, it should explain in the final rule how the radiological safety provisions discharge the security objective the reserved requirement was established to serve, and how the deletion is consistent with the limits on relinquishment in section 274 of the Atomic Energy Act.

⁹Nuclear Regulatory Commission, *Regulatory Analysis for the Proposed Rule: Modernizing NRC Regulations for Byproduct Material Use*, ML26125A393, <https://www.nrc.gov/docs/ML2612/ML26125A393.pdf>, at tbl. ES-1 and § 2.2.8. The net cost savings of approximately \$2,987,000 (7-percent discount rate) is a rule-wide figure; the analysis characterizes the § 150.14 deletion as a "minimal resource savings."

II. STANDARD GENERAL LICENSES: ENFORCEABLE BASELINE AND COMPATIBILITY

The proposed rule establishes a new class of general licenses, Standard General Licenses (SGL), in 10 CFR Part 31, Subpart C (§§ 31.13–31.18) for portable gauging, certain fixed gauging, certain medical uses, certain analytical equipment, and certain in vitro testing, granted by regulation upon submission of a registration, fee, and certification of understanding in place of an individualized specific license. The NRC states the SGLs would be subject to an inspection program “equivalent to the inspection for the same specifically licensed activities,” while noting that it is reviewing inspection frequency under Inspection Manual Chapter 2800.¹⁰

Under specific licensing, the enforceable safety basis for each licensee is captured in license conditions tied to the application. The SGL framework replaces that individualized basis with rule text, the registrant’s certification, and the essential standard commitments codified in §§ 31.13–31.18. This is a workable design, and the existing § 31.5 general license operates on similar logic. However, in the absence of an application, a NUREG-1556 review record, or individualized license conditions, the final rule should identify what inspectors will inspect against and how staff will document compliance. An assertion of equivalent inspection cadence does not by itself establish the enforceable baseline.

The NRC’s first specific request for comment asks how many current specific licensees would transition to an SGL. The agency does not yet know the size of the transitioning population, and that population determines the scope of the inspection program, the anti-competitive-barrier benefit the rule claims, and the cost savings the regulatory analysis estimates. BTI is not positioned to supply the count, but recommends that the NRC develop it before finalizing, because the enforceability framework cannot be evaluated against an unquantified population.

The federalism design of Subpart C bears on the same concern. The proposed rule does not require Agreement States to adopt Subpart C; a State may decline, in which case the pathway is unavailable in that jurisdiction. Within Subpart C, the NRC proposes a split: the provisions specifying which sealed sources and devices qualify are designated Compatibility Category B,

¹⁰ Proposed Rule, *supra* note 1 (§§ 31.13–31.18; inspection program “equivalent to the inspection for the same specifically licensed activities,” with frequency under review pursuant to Inspection Manual Chapter 2800, “Materials Inspection Program”).

because there is a need for consistency across jurisdictions, while the validation provision (§ 31.13(a)(2)) and the medical radionuclide list (§ 31.16(a)(2)) are Category C, and administrative requirements are Category D.¹¹ The NRC has already recognized that the part of the framework most in need of national uniformity warrants Category B. The same rationale applies to the provisions that establish the enforceable baseline. A national pathway intended to remove anti-competitive barriers, but adopted unevenly across States and split across compatibility categories, reintroduces the jurisdictional variation the framework is meant to reduce.

Recommendation. BTI recommends that the NRC specify in regulatory text the standard against which SGL registrants will be inspected and how compliance will be documented; develop and disclose the estimated transitioning population; and either align the compatibility designation of the provisions that determine the enforceable baseline with the Category B treatment already proposed for device eligibility, or explain the basis for designating them otherwise. At a minimum, the NRC should state and justify each Subpart C compatibility designation in the final rule.

III. WELL LOGGING: SOURCE ACCOUNTABILITY UNDER 10 CFR 39.77(c)(1)

Section 39.77(c)(1) currently requires a licensee that cannot retrieve a downhole source to notify the NRC by telephone and obtain approval before implementing abandonment procedures. The proposed rule would remove the requirement, reasoning that the abandonment procedures are approved at licensing, that the real-time approval does not change those procedures, and that the notification is therefore a duplicative approval step.¹²

The NRC's rationale addresses the approval function of § 39.77(c)(1) but not its accounting function. A notification at the moment of abandonment does more than re-confirm pre-approved procedures: it creates a contemporaneous record that a specific radioactive source has become irretrievable at a specific location and time. That record supports source

¹¹ Proposed Rule, supra note 1 (Compatibility of Agreement State Regulations). The provisions specifying eligible sealed sources and devices are proposed as Compatibility Category B; § 31.13(a)(2) and § 31.16(a)(2) as Category C; administrative requirements as Category D; and adoption of Subpart C is not required for compatibility.

¹² Proposed Rule, supra note 1 (§ 39.77(c)(1); Specific Requests for Comments).

accountability, meaning the ability of the NRC and Agreement States to know where abandoned sealed sources are located, which bears on long-term well integrity, subsequent land use, and the broader effort to keep sources from becoming orphaned or unaccounted for. Eliminating the notification removes that accounting input even if the procedure-approval step is, as the NRC states, duplicative.

If the NRC finalizes the removal of the approval step, BTI recommends that it preserve the accounting function through a streamlined, after-the-fact notification or reporting mechanism, such as a record of abandoned irretrievable sources submitted on a defined schedule rather than a real-time call requiring approval. This retains source-accountability information at low burden and is consistent with the burden-reducing intent of the change. As with the § 150.14 deletion, the environmental assessment's categorical "equivalent level of safety and security" finding should separately address the abandonment of irretrievable sources, which is among the higher-consequence events in well logging.

Recommendation. The NRC should preserve a notification mechanism that maintains NRC awareness of newly abandoned irretrievable downhole sources, because the source-accountability function of § 39.77(c)(1) is distinct from the procedure-approval step the proposed deletion addresses. BTI offers this recommendation in response to the NRC's specific request for comment on event reporting and notification requirements across 10 CFR Parts 30–34, 39, 40, and 150.

IV. MEDICAL AND PET PROVISIONS

Two changes meaningfully reduce barriers to medical and PET radionuclide production without diminishing safety. First, the revised § 30.4 consortium definition removes the requirement that a PET radionuclide production facility be located in the same geographical area as the medical use licensee. The NRC explains that the geographic limitation had no safety basis and reflected supply-chain constraints of short-lived radionuclides that no longer hold for longer-lived agents such as copper-64.¹³ The revised definition retains the noncommercial limitation and the institutional anchor at an educational, Federal, or medical facility. BTI supports finalizing it as drafted. Second, the recalibration of decommissioning financial assurance thresholds removes

¹³ Proposed Rule, supra note 1 (§ 30.4, consortium definition).

assurance obligations that do not correspond to realistic decommissioning costs for short-lived therapeutic isotopes and certain generators. These are well-targeted changes that BTI supports.

BTI also supports expanding the § 32.72 and § 32.74 distribution pathways to include microspheres, including radioactive microspheres used in intravascular brachytherapy. The proposed rule would extend distribution eligibility to any applicant legally authorized under applicable Federal or State law to prepare or distribute the material.¹⁴ The change is sound, but the proposed rule does not characterize the universe of entities that the broadened eligibility would newly authorize.

Recommendation. The NRC should describe the distributor population in the final rule record, including its approximate size, the authorizations on which it relies, and the oversight that will apply, so the agency and the public can confirm that the pathway expands access without diffusing accountability. This is the same support-with-characterization posture the Breakthrough Institute suggested in its comment on the Part 37 rulemaking.

V. COORDINATION ACROSS THE EXECUTIVE ORDER 14300 RULEMAKINGS

This proposed rule should be understood as one component of a broader NRC effort to revise the byproduct material framework, and it should not be finalized as though it can be cleanly separated from those adjacent reforms. Four interactions warrant a coordination statement in the final rule.

First, the byproduct, Part 37, and fusion rulemakings modernize overlapping portions of the byproduct material architecture on overlapping timelines. Tritium is the material where the interactions are most visible: it falls outside the SGL scope, outside the § 150.14 SNM framework, and outside the Part 37 categorical thresholds, while the decommissioning financial assurance recalibration in this rule is calibrated to inventories far below those a fusion machine will hold. BTI developed this point in its fusion machine comment and does not repeat it here.¹⁵ The

¹⁴ Proposed Rule, *supra* note 1 (§§ 32.72, 32.74).

¹⁵ See The Breakthrough Institute Fusion Machines Comment, *supra* note 5.

relevant request is that the final preamble acknowledge the interaction rather than leave it unaddressed in every docket.

Second, the consortium relief in this rule authorizes noncommercial transfers under § 30.32(j) without a separate § 32.72 distribution license, a boundary the forthcoming Part 35 medical use rule may also affect.¹⁶ The final rule should note how the two rules fit together so that the distribution framework remains coherent across the two dockets.

Third, the standard general license design, which codifies essential standard commitments from NUREG-1556 into rule text in place of individualized conditions, establishes a regulatory-design pathway that later rulemakings may extend. That is a further reason to resolve the enforceable-baseline and compatibility questions in Section II in this rule, rather than after the pattern is replicated in subsequent dockets.

Lastly, the proposed Modernizing Security Requirements¹⁷ rule was released near the close of the comment period for this proposed rule. Relating to the Part 150 removal, the security rule reflects the NRC's determination that the "high assurance" security standard is functionally equivalent to the "reasonable assurance" standard used in safety contexts. While the Breakthrough Institute agrees with that determination, it does not bear directly on the authority question. Equivalence concerns the level of confidence a program must provide, not the statutory basis on which it rests. A security control for SNM-LSS may be held to a reasonable-assurance standard and still must derive from the § 73.67 common-defense-and-security authority the NRC has reserved, because that authority cannot be relinquished to an Agreement State regardless of the rigor at which it is applied. Consistent with BTI's recommendation, the security rule also provides that a physical security event notification under § 73.1200 satisfies the parallel suspicious-activity report under § 37.57, eliminating a duplicate filing, and the same crediting approach could be applied between § 73.67 and the Part 20 storage-security obligations.

Recommendation. The NRC should address, in the final rule preamble, how the modernized Part 30 framework interacts with the parallel rulemakings the agency is conducting under Executive Order 14300, including the Part 37 physical protection modernization, the fusion machine

¹⁶ Nuclear Regulatory Commission, *Reducing Barriers to Medical Use Licensing*, RIN 3150-AL50 (forthcoming).

¹⁷ *Modernizing Security Requirements*, supra note 7.

framework, the forthcoming medical use (Part 35) rule, and Modernizing Security Requirement rule.

CONCLUSION

BTI supports the NRC's modernization of the byproduct material framework and the burden reductions the proposed rule would achieve. The principal action the final rule should take is to ensure those reductions rest on a durable and internally consistent record: the NRC should identify the statutory basis for the § 150.14 deletion and confirm that Agreement State programs will enforce protection equivalent to the § 73.67 objective, and should specify the enforceable inspection baseline for the new standard general licenses. The source-accountability, medical-distribution, and cross-rule recommendations above would further strengthen the final rule's administrability and durability without diminishing its efficiency gains.

Sincerely,

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