

**COMMENTS OF THE ATTORNEYS GENERAL OF NEW MEXICO, CALIFORNIA,  
COLORADO, ILLINOIS, AND MASSACHUSETTS**

**Via Electronic Transmission on Regulations.Gov**

October 13, 2026

The Honorable Ho Nieh, Chairman  
Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Re: In Situ Recovery Monitoring and Decommissioning Timeliness, 91 Fed. Reg. 57,728  
(Sept. 10, 2026), Docket ID No. NRC-2025-1204**

Dear Chairman Nieh:

The Attorneys General of the States of New Mexico, California, Colorado, Illinois, and Massachusetts (“the States”) submit these comments on the U.S. Nuclear Regulatory Commission’s (“NRC” or “Commission”) proposed rule, *In Situ Recovery Monitoring and Decommissioning Timeliness*, 91 Fed. Reg. 57,728 (Sept. 10, 2026) (“Proposed Rule,” “Notice,” or “2026 Rule”).

The Proposed Rule is part of the NRC’s “wholesale revision” of its long-standing regulations,<sup>1</sup> prompted by Executive Order 14300, *Ordering the Reform of the Nuclear Regulatory Commission*, 90 Fed. Reg. 22,587 (May 29, 2025). This “wholesale revision” is an undertaking of unprecedented scope for the Commission; indeed, the Proposed Rule is just one regulatory proposal among more than two dozen others in 2026. The scale and speed of these changes is deeply concerning to the States. In light of those concerns, New Mexico requested that the NRC extend the comment period for the Proposed Rule on September 17, 2026, describing some of these concerns in detail,<sup>2</sup> but the NRC denied New Mexico’s request.<sup>3</sup>

Standing on its own, the Proposed Rule would codify groundwater protection requirements for uranium in situ recovery (ISR) facilities for the first time and would revise decommissioning timeliness requirements across seven Parts of Title 10, with serious impacts on State programs and on the groundwater that the States administer. These changes—proposed with a mere thirty-three-day comment period—present significant concerns for the States and their residents.

As described below, the States support the codification of groundwater protection requirements specific to ISR. However, the States oppose the Proposed Rule as drafted and urge the Commission to withdraw and re-propose it, in line with the requests outlined in more detail below. The States also request that the Commission withdraw the proposed decommissioning amendments, for the reasons stated below.

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<sup>1</sup> See NRC, *Wholesale Revision of Regulations Under Executive Order 14300*, <https://www.nrc.gov/about-nrc/governing-laws/advance-act/wholesale-revision-regs> (last visited Oct. 1, 2026) (listing 28 completed or ongoing rulemakings).

<sup>2</sup> See NRC-2025-1204-0014, Request for Extension of Comment Period (Sept. 17, 2026).

<sup>3</sup> ADAMS Accession No. ML26286A002.

## **I. INTRODUCTION AND STATES' INTERESTS**

### **A. The States' Agreement State Statuses**

The States include both those with and without Agreement State status under Section 274b of the Atomic Energy Act (AEA) in the context of 11e.(2) byproduct material.<sup>4</sup> For example, Colorado is an Agreement State that has assumed regulatory authority over section 11e.(2) byproduct material, and is authorized to license uranium recovery facilities under programs that the Commission has found adequate and compatible. In New Mexico, the Commission itself licenses uranium ISR facilities; New Mexico's authority over groundwater rests on state water-quality and water-rights law, the Safe Drinking Water Act, and the Clean Water Act, rather than on an agreement under Section 274b.<sup>5</sup>

### **B. The States' Interests in this Rulemaking**

The States have three overarching sovereign interests: First, the States are the sovereigns whose groundwater the Proposed Rule impacts. Each State administers the allocation and use of water within its borders. At most ISR facilities, the production zone is an aquifer that was an actual—or potential—underground source of drinking water, until exempted under the Safe Drinking Water Act for the purpose of mining. The Proposed Rule sets the water quality standards to which those aquifers must be returned after mining operations cease, which is also the point at which the licensee's restoration and monitoring obligations end.

Second, the States bear the long-term consequences of any inadequacy in the NRC's groundwater protection scheme. Under Section 83b.(1)(A) of the Act,<sup>6</sup> title to byproduct material (and to the land used for its disposal) transfers at license termination to the United States or, at the State's option, to the State. Whatever concentration of hazardous constituents a licensee is permitted to leave in the aquifer, and whatever monitoring period is deemed sufficient before the license is terminated, in turn define the condition of a resource the State may thereafter hold in perpetuity.

Third, the Agreement States are co-regulators whose programs the Commission has found adequate and compatible, and whose participation in this rulemaking the Commission itself directed.<sup>7</sup> The Notice reports that representation for this rulemaking consisted of two individuals designated through the Organization of Agreement States,<sup>8</sup> and that no State hosting NRC-licensed uranium recovery without milling authority participated at all.<sup>9</sup>

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<sup>4</sup> 42 U.S.C. § 2021(b).

<sup>5</sup> Where a Section of this comment applies to one group only, it is identified as applying either to Agreement States or Non-Agreement States.

<sup>6</sup> 42 U.S.C. § 2113(b)(1)(A).

<sup>7</sup> NRC, Staff Requirements Memorandum, SRM-SECY-19-0123, *Regulatory Options for Uranium In Situ Recovery Facilities* (Oct. 22, 2020) (ADAMS Accession No. ML20296A469) (directing the staff to “maximize Agreement State representation on the rulemaking working group”).

<sup>8</sup> *In Situ Recovery Monitoring and Decommissioning Timeliness*, 91 Fed. Reg. 57,728, 57,737 (Sept. 10, 2026).

<sup>9</sup> *Id.*

Each of the States has specific interests in this Proposed Rule:

**i. New Mexico**

Along with other States in the Colorado Plateau, New Mexico holds significant deposits of uranium.<sup>10</sup> While there is currently no active uranium mining in New Mexico, from the 1950s through the 1980s, New Mexico produced more Uranium than any other district in the United States, primarily from the Grants Mineral Belt.<sup>11</sup> New Mexico’s legacy of Uranium mining has caused significant environmental and public health impacts, particularly in tribal communities in the Grants Mineral Belt and the Colorado Plateau, such as the Navajo Nation, Acoma Pueblo, and Laguna Pueblo.<sup>12</sup> In 2005, the Navajo Nation passed the Diné Natural Resources Protection Act (DNPRA), which memorialized in its findings and policy statements the legacy of environmental, economic, and public health harms from uranium mining and processing, and prohibited new uranium mining and processing on “any sites within Navajo Indian Country.”<sup>13</sup> In 2023, the President of the Navajo Nation reaffirmed the purpose and goals of the DNPRA, stating that the DNPRA “was enacted to ensure that no further damage to the culture, society, and economy of the Navajo Nation occurs until all adverse effects from past uranium mining and milling have been eliminated or substantially reduced.”<sup>14</sup> The President also called on their federal partners—including the NRC—to “continue addressing the legacy of the uranium mining and milling on the Navajo Nation,” and to remind them “of their obligations . . . and their commitments to address the legacy of uranium mining and milling within the Navajo Nation.”<sup>15</sup>

This rulemaking also implicates New Mexico’s land grant-mercedes and acequias, institutions that have stewarded much of the region’s land and water for generations. Land grant-mercedes are communally held and managed lands that originated as grants from Spain and Mexico and have been subsequently recognized by the United States.<sup>16</sup> Acequias are community-governed irrigation ditches that manage and distribute water under the centuries-old traditions of

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<sup>10</sup> Mihalasky, M.J., 2026, U.S. Geological Service, *Uranium—Deposits, production and resources, market dynamics, and supply chain risks: U.S. Geological Survey Fact Sheet 2025-3057*, <https://doi.org/10.3133/fs20253057> (attached as exhibit).

<sup>11</sup> U.S. Environmental Protection Agency, *Grants Mineral Belt (aka San Mateo Creek Basin Drainage)*, [https://response.epa.gov/site/site\\_profile.aspx?site\\_id=5770](https://response.epa.gov/site/site_profile.aspx?site_id=5770) (last visited Oct. 6, 2026); McLemore, V.T., New Mexico Bureau of Geology and Mineral Resources, *Uranium Resources in New Mexico*, <https://geoinfo.nmt.edu/resources/uranium/nmresources.html> (last visited Oct. 12, 2026) (attached as exhibit).

<sup>12</sup> See generally Keyanna, T., et al., University of New Mexico, Native American Budget & Policy Institute, *The Health Impacts of Uranium Mining in Native American Communities: Policy Brief*, <https://nabpi.unm.edu/assets/documents/research/health-impacts-uranium-mining-policy-brief-final.pdf> (attached as exhibit); Laguna Acoma Coalition for a Safe Environment, *Protecting Sacred Sites—Mount Taylor*, <https://swuraniumimpacts.org/wp-content/uploads/2026/02/LASCE-Flier-2025-3.pdf> (last visited Oct. 12, 2026); Multicultural Alliance for a Safe Environment, *Environmental Justice Policy Statement*, <https://swuraniumimpacts.org/policy/> (last visited Oct. 12, 2026).

<sup>13</sup> 18 Navajo Code § 1303; see *id.* § 1301.

<sup>14</sup> Executive Order No. 04-2023: Addressing the Impacts of Abandoned Uranium Mines and Advocating for Immediate Action to Remediate Said Impacts (Jul. 18, 2023), available at <https://opvp.navajo-nsn.gov/executive-order-no-04-2023/>.

<sup>15</sup> *Id.*

<sup>16</sup> See U.S. Gen. Accounting Office, GAO-04-59, *Treaty of Guadalupe Hidalgo: Findings and Possible Options Regarding Longstanding Community Land Grant Claims in New Mexico* (2004), <https://www.gao.gov/assets/gao-04-59.pdf>.

water sharing.<sup>17</sup> The rights of these institutions under the United States trace back to the Treaty of Guadalupe Hidalgo of 1848, which ended the Mexican-American War and pledged that the property of former Mexican citizens would be “inviolably respected.”<sup>18</sup> Historic uranium mining has occurred on and near numerous land grant-mercedes and acequias, including on the La Merced del Pueblo de Cebolleta (Cebolleta Land Grant) within the Grants Mineral Belt.<sup>19</sup>

New Mexico’s state agencies continue to work to reclaim and remediate legacy and abandoned Uranium mines, as well as to advance reclamation efforts on permitted sites.<sup>20</sup> The Mine Registration Database maintained by the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department lists 160 registrations and permits for uranium mine sites in New Mexico.<sup>21</sup> Though most uranium mine sites are legacy sites requiring remediation and reclamation, there are several sites with pending applications for both conventional and ISR uranium mining.

Given the harmful legacy of uranium mining and processing in the State, New Mexico is keenly interested in ensuring that NRC regulations governing ISR mining are as protective of the State’s groundwater as possible, that the regulations require any uranium operations to return all groundwater to the more stringent of baseline standards, New Mexico’s groundwater protection standards, or the U.S Environmental Protection Agency’s (EPA) standards under the Safe Drinking Water Act.

## **ii. California**

California currently has one operating nuclear power plant, Diablo Canyon Nuclear Power Plant, unit of which is set to begin decommissioning in 2029; unit two in 2030. Other nuclear plants and facilities are in or have completed decommissioning, including San Onofre Nuclear Generating Station; Humboldt Bay Nuclear Power Plant; and Rancho Seco Nuclear Generating Station, all of which have ISFSIs on site. Two non-power reactors and thousands of x-ray and other machine-produced radiation facilities and radioactive materials facilities also operate in California. In 1976, California placed a moratorium on the construction and licensing of new nuclear fission reactors until the federal government implements a solution to radioactive waste disposal. Cal. Pub. Res. Code § 25524.1 and § 25524.2.

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<sup>17</sup> See Adrienne Rosenberg, N.M. State Univ. Coll. of Agric., Consumer & Env’tl. Scis., *Acequias of the Southwestern United States: Elements of Resilience in a Coupled Natural and Human System* (Research Report No. 796, 2020), <https://pubs.nmsu.edu/acequias/index.html>.

<sup>18</sup> Treaty of Peace, Friendship, Limits, and Settlement Between the United States of America and the Mexican Republic (Treaty of Guadalupe Hidalgo), U.S.-Mex., art. VIII, Feb. 2, 1848, 9 Stat. 922.

<sup>19</sup> See Ted Wilton, *Uranium Deposits at the Cebolleta Project, Laguna Mining District, Cibola County, New Mexico*, 39 N.M. Geology 1 (2017), <https://doi.org/10.58799/NMG-v39n1.1> (attached as exhibit).

<sup>20</sup> New Mexico Environment Department, *Uranium Mining & Reclamation in New Mexico*, <https://www.env.nm.gov/former-mines-mills/> (last visited Oct. 6, 2026).

<sup>21</sup> New Mexico Energy, Minerals, and Natural Resources Division, Mining and Minerals Division, *Mine Registrations and Permits*, available at <https://wwwapps.emnrd.nm.gov/MMD/MMDWebInfo/> (data refined by selecting “Uranium” in “Commodity” search).

### iii. Massachusetts

In Massachusetts, the nuclear power plant at the Yankee Rowe Nuclear Power Station was shut down prematurely and decommissioned due to reactor pressure vessel embrittlement concerns, with spent fuel waste stored in an 80-acre cask storage facility onsite. Massachusetts is also home to Pilgrim Nuclear Power Station, which closed in 2019. The decommissioning process for Pilgrim is ongoing. Both Yankee and Pilgrim have independent spent fuel storage installations (ISFSI) on site.

### C. Summary of the States' Position.

The States support the codification of ISR-specific groundwater protection requirements in Appendix A to 10 CFR Part 40. The Commission directed such a rule in 2020, the staff drafted one in 2021, and Agreement States participated in drafting it.<sup>22</sup>

The States, however, do not support other aspects of the Proposed Rule now before the public: First, the Proposed Rule is not what it says it is. It is described as a codification of existing practice that changes no technical criterion.<sup>23</sup> However, it proposes a materially weakened version of the 2021 staff proposal: it is altered in at least twelve respects, ten of them at the written request of three industry commenters. The Notice discloses none of this. *See* §§ II through IV, *infra*.

Second, the Proposed Rule shifts long-term risk to the States. It limits the post-restoration monitoring requirement to one year, when the Commission's own record shows that contamination levels rebound over five years. It permits a licensee to apply for alternate concentration limits (ACLs), based on undefined standards and without public hearing or review. It delegates the determination to an NRC staff-level approval that is unreviewable, despite controlling groundwater standards that will impact the public. It provides no notice to the host State of anything. It doubles the period that a uranium recovery site may sit idle before decommissioning must begin, while removing the public-health finding that governs extensions. *See* §§ III, V, VI, VII.C, and X, *infra*.

Third, the Proposed Rule impairs State authority. It reclassifies Appendix A Criteria 5 and 6 from Compatibility Category C to Category B based solely on policy directives from executive orders<sup>24</sup> rather than any scientifically based radiation-protection basis, converting the federal groundwater standard from a floor beneath State programs into a ceiling above them. It expands the definition of byproduct material to encompass liquid wastes without any savings clause for State water quality protection programs. It declares that the residuals of abandoned-mine reprocessing are not byproduct material at all. And it does all this without a federalism analysis, without consultation with the affected States, and under an alleged categorical exclusion from the

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<sup>22</sup> *See* NRC, Staff Requirements Memorandum, SRM-SECY-19-0123, *Regulatory Options for Uranium In Situ Recovery Facilities* (Oct. 22, 2020) (ADAMS Accession No. ML20296A469); 91 Fed. Reg. at 57,737.

<sup>23</sup> 91 Fed. Reg. at 57,744.

<sup>24</sup> *See also* E.O. 14156, *Declaring a National Energy Emergency* (Jan. 20, 2025), 90 Fed. Reg. 8433 (Jan. 29, 2025); E.O. 14154, *Unleashing American Energy* (Jan. 20, 2025), 90 Fed. Reg. 8353 (Jan. 29, 2025); E.O. 14299, *Deploying Advanced Nuclear Reactor Technologies for National Security* (May 23, 2025), 90 Fed. Reg. 22,581 (May 29, 2025).

National Environmental Policy Act (NEPA) that the Commission's own 2021 environmental assessment contradicts. *See* §§ VII, VIII, and XI, *infra*.

In summary, the States request that the NRC: withdraw the compatibility reclassification, the byproduct-material amendment, the abandoned-mine definition, and the decommissioning-timeliness amendments; restore the 2021 text of Criterion 14 in the respects identified in Section II; add the savings clause, monitoring, ACL, and notification provisions as discussed herein; prepare an environmental impact statement or, at a minimum, an environmental assessment; place the AEA Section 84a.(3) comparability demonstration and EPA's concurrence in the docket; and reopen the comment period on the result.

#### **D. The Request for Extension of the Comment Period**

By letter dated September 17, 2026, the State of New Mexico requested that the Commission extend the comment period to not less than ninety days, convene a public meeting, and place in the docket the predicate documents identified in that letter.<sup>25</sup> The Commission denied the request via email on September 24, 2026. The extension request letter is incorporated by reference. These comments are submitted within the thirty-three days the Commission allowed. They are incomplete in the respects identified in Section IV.F, *infra*, due to the unavailability of information necessary to support the current version of the Proposed Rule, and the States reserve the right to supplement them.

### **II. The Proposed Rule Is Not a Codification of Existing Practice. It Is a Rollback of the 2021 Staff Proposal, Adopted at Industry's Request and Without Acknowledgment.**

The Commission describes this Proposed Rule as “codifying the risk-informed and best management practices for groundwater protection used by the NRC in site-specific license conditions.”<sup>26</sup> Its determination that the rulemaking meets the criteria for a categorical exclusion from NEPA review rests on the same premise: “The NRC is not proposing to change any technical criteria, and accordingly, there would be no change to any environmental impact.”<sup>27</sup> The States do not object to codification of appropriate practice. But this is no such codification. The States object to a materially weakened version of a rule the NRC staff developed under Commission direction in 2021, yet the Notice discloses none of this.

#### **A. In 2020, the Commission Directed a Rule Consistent with the EPA Memorandum of Understanding.**

The operative Commission direction for this rulemaking is SRM-SECY-19-0123 (Oct. 22, 2020) (ML20296A469).<sup>28</sup> The Commission approved resumption of a 2006 rulemaking<sup>29</sup> “to provide risk-informed ISR-specific requirements that would provide increased consistency and transparency in licensing reviews between NRC and Agreement States and to clarify the

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<sup>25</sup> *See* NRC-2025-1204-0014, Request for Extension of Comment Period (Sept. 17, 2026).

<sup>26</sup> 91 Fed. Reg. at 57,733.

<sup>27</sup> *Id.* at 57,744.

<sup>28</sup> *See id.* at 57,731.

<sup>29</sup> *See* COMJSM-06-0001, *Regulation of Groundwater Protection at In Situ Leach Uranium Extraction Facilities* (Jan. 17, 2006), <https://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2006/2006-0001comjasm.pdf>.

applicability of existing requirements to ISR activities in 10 CFR Part 40, in particular the applicability of alternate concentration limits for ISR facilities.”<sup>30</sup> It directed that “the rulemaking should be narrowly targeted,” that the NRC staff “maximize Agreement State representation on the rulemaking working group,” and that, “[c]onsistent with the July 2020, ‘Memorandum of Understanding Between the NRC and EPA Concerning the Regulation of Uranium in situ Recovery Activities,’ the staff should update ISR guidance to clarify that the groundwater protection standards for ISR activities are set forth in 40 CFR Part 192, Subpart D.”<sup>31</sup>

The staff carried out that direction. In 2021 it transmitted to the Commission a complete proposed rule package: SECY-21-0067, with a proposed rule and preamble (Enclosure 1, ML21067A127), a regulatory analysis (Enclosure 2, ML21067A118), a draft environmental assessment (Enclosure 3, ML21067A128), and a resource estimate (Enclosure 4, ML21067A119) (“2021 Proposal”). The working group that prepared it included Agreement State representatives from Texas and Wyoming.<sup>32</sup>

## **B. The Commission Withdrew the 2021 Proposal in the Wake of Executive Order 14300.**

The Commission never acted on the merits of the 2021 Proposal. On September 11, 2025, in an omnibus memorandum covering four unrelated rulemakings, the Commission “approved the staff’s request to withdraw” SECY-21-0067 “since [it is] within the scope of rules to be issued pursuant to Executive Order 14300.”<sup>33</sup> The memorandum contained no finding about any provision of the 2021 Proposal, no direction on scope, and no discussion of the environmental assessment. The 2026 Rule does not cite this memorandum, does not list it in the Availability of Documents table, and describes the event by stating only that the rulemaking effort was “placed under the NRC’s broader E.O. 14300 rulemaking response.”<sup>34</sup>

## **C. The 2026 Proposed Rule Weakens the 2021 Proposal in at Least Twelve Respects.**

The States have compared the regulatory text of the 2021 Proposal with the regulatory text published on September 10, 2026. The principal changes include:

**Post-restoration monitoring.** The 2021 Proposal required quarterly sampling “for three years” and deemed monitoring complete only upon “no statistically significant exceedance for three consecutive years.”<sup>35</sup> The 2026 Rule substitutes “one year” in each place, thereby shortening the monitoring period significantly. The 2021 preamble identified three years as “the only notable substantive change in the proposed rule when compared to current NRC licensing practice,”<sup>36</sup> and explained that it was required by a July 2020 Memorandum of Understanding between the NRC

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<sup>30</sup> NRC, *Staff Requirements Memorandum*, SRM-SECY-19-0123, *Regulatory Options for Uranium In Situ Recovery Facilities* (Oct. 22, 2020) (ML20296A469).

<sup>31</sup> *Id.*

<sup>32</sup> 91 Fed. Reg. at 57,737.

<sup>33</sup> SRM-SECY-21-0067 (ML25254A183).

<sup>34</sup> 91 Fed. Reg. at 57,732.

<sup>35</sup> 2021 Criterion 14(f)(1)(i)–(ii), ML21067A127 at 90–91.

<sup>36</sup> ML21067A127 at 50.

and EPA<sup>37</sup> (MOU) and by AEA Section 84a.(3). The 2026 preamble concedes that reverting to one year “could necessitate revisiting the July 2020 EPA MOU” but says nothing about the Proposed Rule’s compliance with AEA Section 84a.(3), 42 U.S.C. § 2114(a)(3).<sup>38</sup> This change is addressed in Section III, *infra*.

**Point-of-compliance well density.** The 2021 Proposal required one monitoring well “per acre within the production unit unless otherwise approved by the NRC.”<sup>39</sup> The 2026 Proposed Rule would delete that requirement, but it is unclear whether the requirement would be implemented through guidance. The one-per-acre figure survives only in the draft NUREG-1569 supplement, where it may be varied on a “technical basis.”<sup>40</sup> The 2026 draft Regulatory Analysis nonetheless computes monitoring costs for a wellfield with “20 point of compliance wells in the production unit at one well per acre.”<sup>41</sup> Either the Proposed Rule is expected to produce that density, in which case it should say so, or the cost-benefit analysis in the draft Regulatory Analysis understates the relief to licensees being granted.

**Pre-license drilling.** The 2021 Proposal provided that, “[p]ursuant to the definition of construction in 10 CFR 40.4, no wells associated with radiological operations (e.g., production, injection, or monitoring well networks associated with ISR facilities) may be installed in the wellfield prior to the NRC issuing the license.”<sup>42</sup> The 2026 Proposed Rule would eliminate this requirement for a license prior to construction activities and allows for the opposite: “Any drilling, well installation, testing, and related site activities required for the purpose of site characterization and suitability demonstration under this rule are not considered construction activities, as defined in 10 CFR 40.4.”<sup>43</sup> The preamble describes 14(a) only as requiring characterization information and does not mention this reversal. This change is addressed in Section IX, *infra*.

**Site characterization and restoration planning.** The 2021 Proposal enumerated twelve required elements of the site characterization submittal (including, for example, a description of the local and regional hydrogeologic gradient and hydrostratigraphy, and past, current and future groundwater use),<sup>44</sup> and six required elements of the wellfield restoration plan (demonstrating how it will meet the approved hazardous constituent concentration limits in the production unit after restoration), including “an analysis or demonstration that the wellfield can be restored to meet” the approved limits.<sup>45</sup> The 2026 Proposed Rule would replace the twelve elements with two general paragraphs, and the six elements with a narrative description. The 2026 Proposed Rule would remove the requirement that a license applicant demonstrate that restoration to baseline groundwater standards is achievable. Its absence matters because the 2026 Proposed Rule would permit a licensee to seek an alternate concentration limit whenever it “cannot practically achieve”

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<sup>37</sup> ML20218A248.

<sup>38</sup> 91 Fed. Reg. at 57,734.

<sup>39</sup> 2021 Criterion 14(b)(3)(i), ML21067A127 at 81–82.

<sup>40</sup> Guidance for the Proposed Rule “*Groundwater Protection at Uranium In Situ Recovery Facilities*” (ML26243A344).

<sup>41</sup> NRC, *Regulatory Analysis for the Proposed Rule: In Situ Recovery Monitoring and Decommissioning Timeliness* at 3-7, (ML26243A343).

<sup>42</sup> 2021 Criterion 14(b), ML21067A127 at 79.

<sup>43</sup> 2026 Criterion 14(a), 91 Fed. Reg. at 57,752.

<sup>44</sup> 2021 Criterion 14(a)(1)–(12), ML21067A127 at 77–79.

<sup>45</sup> 2021 Criterion 14(b)(5)(v), ML21067A127 at 83.

the approved limit,<sup>46</sup> and under the Proposed Rule, a licensee would not have to show, before injection of lixiviant, that the limit was achievable. This is addressed in Section V, *infra*.

**Corrective action.** The 2021 Proposal required a licensee whose mining activity is causing aquifer contamination beyond the portion of the aquifer approved for mining (known as an “excursion”) to control that excursion within 60 days, or otherwise “terminate injection of lixiviant into the production unit.”<sup>47</sup> The 2026 Proposed Rule would require termination of the lixiviant injection, but only in “portions of the wellfield potentially contributing to the continuing excursion,” and adds the possibility that corrective action need only be taken within “an alternate time period approved by the NRC,” thus allowing operators to continue injecting lixiviant into a wellfield that is leaking contaminants into an aquifer, if the NRC approves.

**Definitions and thresholds.** The 2026 Proposed Rule adds to the definitions of “excursion” and “point of compliance” the qualifying term, “that can reasonably be expected to be impacted,” and adds “as appropriate” to the provisions governing where point-of-compliance wells must be placed. This adds uncertainty and leniency to the rule’s monitoring and corrective action requirements. It drops “tubing, or packer” from the mechanical-integrity test, leaving only the casing as a barrier to failure of an injection well, even where tubing and packer is employed in drilling. By making them “subject to NRC approval,” the 2026 Rule would also relax the minimum number of indicator constituents for monitoring, the number of baseline groundwater samples, and the criterion for declaring an excursion eliminated. It replaces a formation testing program for fracture pressure with a calculated operating program, meaning that licensees would not be required to measure a geologic formation’s fracture pressure before drilling.

**Additions with no 2021 counterpart.** The 2026 Proposed Rule would add a definition of “abandoned uranium mine waste remediation,” declaring that reprocessing of abandoned-mine waste rock “is not considered uranium milling” and that the resulting waste “is not byproduct material.” It reclassifies Criteria 5 and 6 of Appendix A from Compatibility Category C to Category B, thus undermining the States’ ability to set higher groundwater quality standards than the NRC permits—the 2021 Proposal left Criterion 5 at Category C and moved the definition of “point of compliance” from Category A down to C. And the Proposed Rule would append a set of decommissioning-timeliness amendments spanning seven Parts of Title 10. None of these changes were in the 2021 Proposal, and none are within the scope of rulemaking the Commission directed in SRM-SECY-19-0123.

#### **D. Each Substantive Change Corresponds to a Request in Industry Letters.**

The 2026 Notice states that “the NRC received several letters related to groundwater protection at ISR facilities” and lists them in the Availability of Documents section.<sup>48</sup> There are three: from the Wyoming Mining Association (Oct. 16, 2025),<sup>49</sup> Cameco Resources (Oct. 23,

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<sup>46</sup> 2026 Criterion 14(f).

<sup>47</sup> 2021 Criterion 14(h)(1)(i).

<sup>48</sup> 91 Fed. Reg. at 57,732.

<sup>49</sup> See NRC-2025-1204-0003, Letter from Travis Deti, WMA to Chairman Wright (Oct. 16, 2025) (“WMA Letter”).

2025),<sup>50</sup> and the National Mining Association (Oct. 29, 2025).<sup>51</sup> These letters represent the only stakeholder correspondence in the docket predating the Proposed Rule.

The correspondence is not general. Of the twelve changes to the 2021 Proposal text, ten trace directly back to a specific written request by industry. Three changes adopt the requesting party's proposed language nearly word for word: the "can reasonably be expected to be impacted" qualifier in the point-of-compliance definition; the "twice per month, with a minimum of 10 days between sampling events" frequency; and the deletion of "tubing, or packer." The two changes that drew comment from all three letters—the three-year monitoring period and the one-per-acre well density—are the two provisions the 2021 staff had identified as the substantive core of the rule.

The National Mining Association (NMA) letter is candid about what it sought. It states that the 2021 Proposal "went well beyond the codification of language that represents how NRC currently regulates ISR facilities in practice," and that "the NRC should reject certain unjustified and onerous provisions contained in the 2021 draft rule."<sup>52</sup> The NRC did so. It then described the result as codifying existing practice.

The sequence bears noting. The Commission withdrew the 2021 Proposal on September 11, 2025. The WMA letter reports that NMA met with the Commissioners "during the week of September 22, 2025," and that WMA was "informed that based on discussions between NMA staff and the NRC commissioners, there is a brief window of opportunity during which the uranium recovery industry may reiterate their support for narrowly focused uranium ISR rulemaking."<sup>53</sup> The Cameco letter repeats the phrase. The three letters arrived within thirteen days of one another. The States were not informed of any such window. The notice reports that Agreement State participation in developing the rule consisted of two representatives designated through the Organization of Agreement States, and that no State hosting NRC-licensed uranium recovery without milling authority participated at all.<sup>54</sup>

While an agency can take into account industry's perspectives, it should not adopt them wholesale without also considering a broad range of stakeholder perspectives.

#### **E. The Notice's Claim that the Proposed Rule Codifies Current Practice Is Contradicted by the Agency's Own Record.**

The 2026 Notice relies on the 2021 Proposal. It cites SECY-21-0067, Enclosure 1, for "[a] detailed history of this topic" and for the discussion of point-of-compliance wells, excursion monitoring, corrective action, and groundwater restoration.<sup>55</sup> It describes the 2021 Proposal's text as "an earlier version of this proposed rule."<sup>56</sup> It lists Enclosure 1 in the Availability of Documents

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<sup>50</sup> See NRC-2025-1204-0001, Letter from Eric Hiede, Cameco Resources to Chairman Wright (Oct. 23, 2025) ("Cameco Letter").

<sup>51</sup> See NRC-2025-1204-0002, Letter from Katie Sweeney, NMA to Chairman Wright (Oct. 29, 2025) ("NMA Letter").

<sup>52</sup> NMA Letter at 5.

<sup>53</sup> WMA Letter at 2.

<sup>54</sup> 91 Fed. Reg. at 57,737, 57,751.

<sup>55</sup> 91 Fed. Reg. at 57,731–32.

<sup>56</sup> *Id.* at 57,737.

table. What it does not disclose is that the earlier version provided for stronger groundwater protections or explain why the later version weakened them.

That omission is not cured by the general statement that the Proposed Rule codifies current practice.<sup>57</sup> The 2021 staff, working from the same license conditions and the same report on ISR license applications, NUREG-1569, concluded that current practice needed to be strengthened in at least one respect—monitoring duration—to satisfy the MOU and AEA Section 84a.(3), and chose to write monitoring-well density, site characterization, and restoration-plan requirements into the 2021 Proposal, rather than leave them to guidance. The 2026 Rule reverses each of those judgments.

An agency may change its position, but it must acknowledge that it is doing so and supply a reasoned explanation for the change.<sup>58</sup> The 2026 Notice does neither. It does not acknowledge the 2021 Proposal’s text. It offers no technical basis for any of the twelve changes. The only explanation it offers for any of these changes is that the rulemaking proceeds under Executive Order 14300, which directs the agency to reduce its regulatory burden. However, reducing regulatory burden is not a valid reason to weaken groundwater monitoring and protection standards that the NRC staff just five years ago concluded were required.

The States therefore request that the Commission, before issuing any final rule, (1) place in the docket a statement identifying each of the 2026 Rule’s departures from the 2021 text and the technical basis for each departure; (2) explain how the Proposed Rule can be characterized as a codification of current practice when it omits or relaxes provisions of the 2021 Proposal that NRC staff confirmed involved no notable substantive change from current licensing practice, including the one-per-acre point-of-compliance well density, the enumerated site-characterization elements, the restoration-achievability demonstration, the prohibition on installing wells associated with radiological operations before the license issues, and how codifying a one-year post-restoration monitoring period that the same staff found was not comparable to the Resource Conservation and Recovery Act (RCRA) standard satisfies section 84a.(3);<sup>59</sup> and (3) afford a further opportunity for comment on that explanation.

### **III. The One-Year Post-Restoration Monitoring Period Is Contrary to the NRC’s Own Record, the EPA Memorandum of Understanding, and AEA Section 84a.(3).**

#### **A. What the Rule Proposes.**

Proposed Criterion 14(f)(1)(i) requires “quarterly sampling at each approved point of compliance well for one year.”<sup>60</sup> Proposed subsection 14(f)(1)(ii) deems monitoring complete

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<sup>57</sup> *Id.* at 57,734.

<sup>58</sup> See *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515-16 (2009); *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221–22 (2016).

<sup>59</sup> SECY-21-0067, Enc. 1, at 34 (ML21067A127) (“The only notable substantive change from current NRC ISR facility licensing practice would be to require at least three years of quarterly post-restoration monitoring . . . .”); *id.* at 32 (describing current practice as prohibiting the installation of “any wells associated with radiological operations . . . in the wellfield prior to the NRC issuing the license”); Draft Environmental Assessment at 6 (ML21067A128) (“the NRC is codifying its licensing practice over the last 40 years for ISR facilities and adding additional post-restoration groundwater monitoring requirements”).

<sup>60</sup> 91 Fed. Reg. at 57,755.

when samples “show that hazardous constituent concentration levels have remained below their approved concentration limits with no statistically significant exceedance for one year.”<sup>61</sup> If the NRC later finds a corrective action unsuccessful, it “may” require one further year.<sup>62</sup> Nothing in proposed Criterion 14 supplies a compliance period: the proposed amendment to Criterion 5B(1)(b) states that the Commission “will also establish the point of compliance and compliance period on a site-specific basis pursuant to Criterion 14,” but the phrase “compliance period” does not appear in Criterion 14.<sup>63</sup> This stands in contrast to Criterion 5B(1)(a), which retains the Commission’s duty to “set the compliance period” for conventional uranium mills.<sup>64</sup> Yet, for ISR facilities, one year of post-restoration sampling is the only durational requirement in the rule: there is no expressly stated compliance period for ISR.

The Proposed Rule’s preamble describes this as continuing “the staff’s current practice of quarterly monitoring for at least one year.”<sup>65</sup> It then adds: “This proposed change to the rule, which would codify the current practice of a minimum of one year of post-restoration groundwater monitoring to verify that conditions remain protective, could necessitate revisiting the July 2020 EPA MOU.”<sup>66</sup>

**B. The NRC Staff Concluded in 2021 That One Year Does Not Satisfy the MOU or Section 84a.(3).**

Section 84a.(3) of the Atomic Energy Act provides that the Commission must establish general requirements for the management of section 11e.(2) byproduct material that must “conform() to general requirements established by the Commission, with the concurrence of the [EPA] Administrator, which are, to the maximum extent practicable, at least comparable to requirements applicable to the possession, transfer, and disposal of similar hazardous material regulated by the Administrator under the Solid Waste Disposal Act [and RCRA].”<sup>67</sup> The July 2020 Memorandum of Understanding between the NRC and EPA implements that requirement for ISR groundwater.<sup>68</sup> Section VII.c of the MOU, as the 2021 rulemaking preamble describes it, provides that “the corrective action framework of Subtitle C of RCRA is the appropriate regulatory framework for ISR facilities,” and that, “in any future rulemaking, the agencies agreed that post-restoration monitoring will incorporate the same requirements as the RCRA regulation for corrective action for aquifer contamination in 40 CFR 264.100, which in turn references 40 CFR 264.96(c).”<sup>69</sup>

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<sup>61</sup> *Id.*

<sup>62</sup> *Id.*; Criterion 14(h)(2)(iii).

<sup>63</sup> *Id.* at 57,752; *see generally id.* at 57,752-755.

<sup>64</sup> *Compare id.* at 57,752, with 10 C.F.R. Pt. 40, App. A, Criterion 5B(1); *see* 10 C.F.R. Pt. 40, App. A (“Compliance period begins when the Commission sets secondary groundwater protection standards and ends when the owner or operator’s license is terminated and the site is transferred to the State or Federal agency for long-term care.”).

<sup>65</sup> 91 Fed. Reg. at 57,736.

<sup>66</sup> *Id.* at 57,734.

<sup>67</sup> 42 U.S.C. § 2114(a)(3).

<sup>68</sup> ML20218A248.

<sup>69</sup> SECY-21-0067, Enc. 1, at 23-24 (2021 preamble) (ML21067A127); 40 C.F.R. § 264.100 (providing that the Regional Administrator “will specify the ground-water protection standard in the facility permit, including . . . “[t]he compliance period under § 264.96”).

Section 264.96(c) requires monitoring to demonstrate no statistically significant exceedance of the groundwater protection standard “for a period of three consecutive years.”<sup>70</sup> The 2021 staff wrote that period into the rule, and explained why: “The proposed rule’s post-restoration monitoring requirement is, therefore, comparable to the RCRA standards as required in AEA section 84a(3).”<sup>71</sup> Further, “[t]he proposed post-restoration monitoring requirement to demonstrate there has been no statistically significant exceedance of the approved hazardous constituent concentration limits for three consecutive years is the only notable substantive change in the proposed rule when compared to current NRC licensing practice.”<sup>72</sup>

The 2021 draft environmental assessment stated that the rule “would add additional post-restoration monitoring requirements to enhance these protections,” and the 2021 regulatory analysis explained that the increase “from the current required minimum period of one year to at least three years” was made “to be comparable to the RCRA corrective action framework for groundwater restoration described in the 2020 NRC EPA MOU.”<sup>73</sup>

The 2026 Rule reverts the post-restoration monitoring period to one year. The 2026 preamble acknowledges that the one-year period “could necessitate revisiting the July 2020 EPA MOU,” recites Section 84a.(3) only in its statutory background, does not apply it to the one-year period, and—unlike the 2021 package—does not state that the NRC will seek the EPA’s concurrence.<sup>74</sup> The NRC’s own prior analysis thus establishes that the 2026 Proposed Rule is not comparable to the RCRA requirement that AEA Section 84.a(3), 42 U.S.C. § 2114(a)(3), establishes as the benchmark. The States are aware of no basis on which the Commission could find otherwise, and the Notice offers none.

The one-year timeframe also fails a different requirement, independent of RCRA. Section 84a.(2) of the AEA separately requires that management of section 11e.(2) byproduct material “conform[] with applicable general standards promulgated by the Administrator” under AEA Section 275, 42 U.S.C. § 2022 (which directs the EPA Administrator to promulgate standards for the protection of the public health, safety, and the environment from radiological and nonradiological hazards associated with uranium processing and disposal sites),<sup>75</sup> and the Notice acknowledges that “the NRC must conform with the standards of general application issued by the EPA under AEA section 275b.”<sup>76</sup> Unlike AEA Section 84a.(3), Section 84a.(2) provides no “maximum extent practicable” exception.<sup>77</sup> The applicable EPA standard is 40 C.F.R. Part 192, Subpart D, which the Commission directed controls groundwater protection standards for ISR activities.<sup>78</sup> Section 192.33 requires that, when the standards are exceeded at “any licensed site,” “a corrective action program as specified in § 264.100” be put into operation, and Section 264.100, as the 2021 staff read it through Section 264.96(c), ends that program only on a showing that the

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<sup>70</sup> 40 C.F.R. § 264.96(c); *see* ML21067A127 at 24.

<sup>71</sup> ML21067A127 at 24.

<sup>72</sup> *Id.* at 50.

<sup>73</sup> ML21067A128 at 7; ML21067A118 at 3-14.

<sup>74</sup> 91 Fed. Reg. at 57,730; *compare* SECY-21-0067 at 9.

<sup>75</sup> 42 U.S.C. § 2114(a)(2).

<sup>76</sup> 91 Fed. Reg. at 57,730.

<sup>77</sup> *Compare* 42 U.S.C. § 2114(a)(2), *with id.* § 2114(a)(3).

<sup>78</sup> SRM-SECY-19-0123 (Oct. 22, 2020) (ML20296A469) (“[T]he staff should update ISR guidance to clarify that the groundwater protection standards for ISR activities are set forth in 40 CFR Part 192, Subpart D.”); *see* § II.A, *supra*.

standard “has not been exceeded for a period of three consecutive years.”<sup>79</sup> A production unit is, by design, contaminated above its approved limits until restoration is complete. A generic rule requiring one year of monitoring does not conform to that standard. Nor can Section 84c supply an alternative: it permits “a licensee” to propose site-specific alternatives, and only where they achieve protection equivalent to EPA’s final standards.<sup>80</sup>

**C. The NRC Has Already Found, in an Enforcement Action, That Fixed Short-Duration Stability Monitoring Fails.**

On March 29, 2002, the NRC denied Crow Butte Resources’ request for approval of the restoration of Wellfield Unit 1 at its Nebraska ISR facility.<sup>81</sup> The licensee had conducted six months of stability monitoring, the period its license then contemplated. The NRC’s hydrogeologist plotted the data and found:

Staff’s analysis indicates that concentrations of ammonium, iron, radium-226, selenium, total dissolved solids, and uranium show strongly increasing concentration trends over the stability monitoring period. These trends indicate a reasonable likelihood that license limits would be exceeded in the near future.<sup>82</sup>

Staff’s analysis and findings strongly indicate that the six-month period for stability monitoring at this site is insufficient to assure stability for all monitored constituents. Many constituents reached stability within a relatively short time; however, increasing concentrations for several constituents persist at the end of, and presumably beyond, the six-month stability period. The stability monitoring data provided by this first commercial-scale wellfield restoration at the site indicates that the originally forecasted stability period was underestimated.<sup>83</sup>

Radium-226 had risen from 216 to 385 pCi/L over the six-month period. Staff recommended that “[t]he licensee should extend the stability monitoring period for all future wellfields beyond the six-month monitoring period forecasted by the pilot-scale wellfield restoration.”<sup>84</sup>

The NRC approved the Unit 1 restoration eleven months later, on February 12, 2003, after four additional sampling events showed the trends had flattened.<sup>85</sup> Iron was still rising and had exceeded the State standard. But the acceptance did more than approve one wellfield. It amended License Condition 10.3C to require, for all future wellfields, “stability monitoring beyond the six-

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<sup>79</sup> 40 C.F.R. § 192.33; 40 C.F.R. § 264.100(f); 40 C.F.R. § 264.96(c); SECY-21-0067, Enc. 1, at 23–24 (ML21067A127).

<sup>80</sup> 42 U.S.C. § 2114(c); 91 Fed. Reg. at 57,731.

<sup>81</sup> *Denial, Wellfield Unit 1 Groundwater Restoration Approval, Crow Butte Resources In Situ Leach Facility, License No. SUA-1534 (TAC No. L52376)* (Mar. 29, 2002) (ML020930087).

<sup>82</sup> *Id.* Enc. 1: Technical Evaluation Report at 2.

<sup>83</sup> *Id.* at 5.

<sup>84</sup> *Id.*

<sup>85</sup> ML14282A326.

month period, as necessary, to continue until no increasing concentration trends are exhibited,” and the staff recommended “that the licensee seek a license amendment to make the stability monitoring performance oriented, continuing until no increasing concentration trends are exhibited, rather than restricting the monitoring period to no longer than six months.”<sup>86</sup>

Three things follow. First, the NRC has already determined, on data produced in an adjudicatory proceeding, that a fixed short stability period is inadequate and that the correct standard is performance-based: monitoring continues until the trend is gone. Proposed Criterion 14(f) reverses that determination by setting the default monitoring period at one year. Second, the 2002 finding of instability at Crow Butte rested on more data points than the 2026 Rule would require: the staff had at least six samples spanning over six months, and the 2026 Rule would accept four samples. Third, the Crow Butte Unit 1 restoration is one of the eleven restorations that the NRC’s 2009 staff assessment, the 2017 EPA comments, and all three industry letters cite as demonstrating that current practice protects groundwater. But the Crow Butte application for approval that the groundwater restoration was complete was denied for instability before it was approved.

#### **D. The NRC’s Own Contractor Report Demonstrates that Contaminants Rebound, Requiring a Five-Year Stabilization Period.**

In January 2007, the NRC Office of Nuclear Regulatory Research published NUREG/CR-6870, *Consideration of Geochemical Issues in Groundwater Restoration at Uranium In-Situ Leach Mining Facilities*, prepared by the U.S. Geological Survey.<sup>87</sup> The report modeled post-restoration geochemistry and compared the results to field data. Its conclusions:

Although the concentrations of U, Se, and V decreased rapidly during the first few pore volumes<sup>[88]</sup> in the oxic case, their concentrations were still maintained above baseline levels for tens of pore volumes by desorption from the sediments.<sup>89</sup>

The long-term stabilization simulations suggest that if oxic groundwater enters the mined zone by natural-gradient groundwater flow, the reducing conditions that cause the precipitation of these phases will eventually be overcome. This could result in the reoxidation of the reduced mineral phases, causing U, Se, and As to be mobilized again after many pore volumes of groundwater have passed.<sup>90</sup>

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<sup>86</sup> *Id.*, cover letter at 1; TER at 1.

<sup>87</sup> J.A. Davis and G.P. Curtis, U.S. Geological Survey, NUREG/CR-6870, *Consideration of Geochemical Issues in Groundwater Restoration at Uranium In-Situ Leach Mining Facilities* (ML070600405).

<sup>88</sup> “Pore volumes” represent the volume of aquifer water that is required to fill the void space in certain rock or sediment, and “provides a unit reference that an operator can use to describe the amount of lixiviant circulation needed to leach an ore body or describe the unit number of treated water circulations needed to flow through a depleted ore body to achieve restoration.” NRC, Chapter 2, *In-Situ Leach Uranium Recovery and Alternatives*, ML15093A360.

<sup>89</sup> NUREG/CR-6870 at 79.

<sup>90</sup> *Id.* at 80.

Industry experience shows that elevated concentrations (above baseline) of arsenic, selenium, radium, uranium, molybdenum, radium, uranium, and vanadium still existed after extensive groundwater restoration activities. At the Highland A-wellfield, a long period (5 years) was required for the groundwater stabilization phase as well as long-term monitoring (13 years) during the groundwater restoration process.<sup>91</sup>

The Highland A-wellfield is at Smith Ranch-Highland in Wyoming, the largest ISR facility in the country. Its stabilization phase took five years. The 2021 staff proposed three. The 2026 Rule now proposes only one. Inexplicably, the U.S. Geological Survey study is not cited in the 2026 Notice.

#### **E. The Published Record Uniformly Documents Post-Restoration Rebound.**

The federal research community, State regulators, academic investigators, and the NRC's own licensees have addressed the question of whether restored ISR wellfields remain stable. They have reached the same answer: they regularly do not. The principal findings include:

1. **U.S. Geological Survey, Open-File Report: Hall, (2009).** A review of Texas Commission on Environmental Quality records for all 77 production areas in Texas. Texas then required six months of stability monitoring. USGS found that at the Grover, Colorado pilot, “upward-trending uranium, beta activity, radium, TDS, calcium, magnesium, specific conductivity, total hardness, gross alpha, and ammonia” continued past the six-month mark, and that at the Crownpoint, New Mexico Mobil pilot site, one-year stability data showed trends indicating “groundwater may not have stabilized when the final samples were collected.” Texas subsequently lengthened its period to one year, and to two years where the operator seeks an amended restoration standard.<sup>92</sup>
2. **U.S. Geological Survey: Otton and Hall (2009).** “To date, no remediation of an ISR operation in the United States has successfully returned the aquifer to baseline conditions. Often at the end of monitoring, contaminants continue to increase by reoxidation and resolubilization of species reduced during remediation; slow contaminant movement from low to high permeability zones; and slow desorption of contaminants adsorbed to various mineral phases.”<sup>93</sup>
3. **U.S. Geological Survey: Gallegos et al. (2015).** Core from a sandstone-hosted uranium deposit in Wyoming after mining contained residual uranium at 5 to 1,920 ppm, with relict uranium minerals “trapped within low permeability layers bypassed during ISR mining”

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<sup>91</sup> *Id.*

<sup>92</sup> U.S. Geological Survey, S. Hall, *Groundwater Restoration at Uranium In-Situ Recovery Mines, South Texas Coastal Plain* at 23–25, Open File Report 2009-1143 (ML24282B070) (attached as exhibit).

<sup>93</sup> U.S. Geological Survey, J.K. Otton & S. Hall, *In-situ recovery uranium mining in the United States: Overview of production and remediation issues*, IAEA-CN-175/87 (ML100960636) (attached as exhibit).

and labile U(VI) sorbed to iron oxides that exhibits “sensitivity to changes in redox conditions [that] requires careful attention during groundwater restoration.”<sup>94</sup>

4. **EPA Technical Brief (2017):** “[S]everal water quality studies indicate that trace metals, anions, and leaching fluids remain in the aquifer after restoration is completed.”<sup>95</sup>
5. **Saunders, et al. (2016):** Compiling data from Highland, Crow Butte and Ruth: “[S]everal trace metals and anions including As, Se, Mo, V, Mn, Fe, U, Ra, and sulfate are likely to be liberated during ISR and may remain in groundwater even after post-ISR restoration efforts are completed.” At Highland, after more than fifteen pore volumes of sweep, reverse osmosis and reductive recirculation, mean uranium remained at 3,530 µg/L against a baseline of 50 and an MCL of 30. “Unreacted ore material may serve as a continuing source of contaminants to groundwater after ISR is complete.”<sup>96</sup>
6. **University of New Mexico: Ruiz, Thomson, Cerrato and Rodriguez-Freire (2019).** At the Mobil Crownpoint pilot in New Mexico, restoration by groundwater transfer, sweep, ion exchange, reverse osmosis, and sodium sulfide over six years, 1980 to 1986, ended with average uranium at 0.32 mg/L, more than ten times the New Mexico standard of 0.03 mg/L.<sup>97</sup>
7. **Los Alamos National Laboratory: Jemison, et al. (2020).** “[F]ollowing ISR treatment, U concentrations in groundwater remain elevated and significantly above regulations that aim for the mining companies to restore contaminant levels to pre-mining concentrations”; sweep and reverse osmosis “can achieve compliance criteria for contaminants in the short-term, but concentrations of contaminants often rebound due to desorption from aquifer minerals.”<sup>98</sup>
8. **NuFuels, Inc. (2021).** The licensee for the Crownpoint Uranium Project, in a project narrative submitted to the Department of Energy and filed in ADAMS (ML23304A114): “Concentrations of uranium tend to gradually rebound . . . . To date, no ISR site has restored all groundwater constituents of concern to pre-operational concentrations and most receive alternate concentration limits for at least one regulated constituent . . . . In the long-term, the concentrations that rebound often require additional restoration efforts and long-term monitoring.”<sup>99</sup>

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<sup>94</sup> T.J. Gallegos, et al., *Persistent U(IV) and U(VI) following in-situ recovery (ISR) mining of a sandstone uranium deposit, Wyoming, USA*, 63 Applied Geochemistry 222–234 (2015), DOI 10.1016/j.apgeochem.2015.08.017 (abstract) (attached as exhibit).

<sup>95</sup> EPA, *Technical Brief: Aquifer Restoration After Uranium Recovery*, EPA/600/F-17/342, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100TFQY.PDF?Dockey=P100TFQY.PDF>. (attached as exhibit).

<sup>96</sup> Saunders et al., *Potential aquifer vulnerability in regions down-gradient from uranium in situ recovery (ISR) sites*, 183 J. Environ. Mgmt. 67, 75-76 & table 2, 79 (Dec. 2016) (EPA Office of Research and Development–funded review) (attached as exhibit).

<sup>97</sup> O. Ruiz, et al., *Groundwater Restoration Following In-Situ Leach Mining of Uranium*, 109 Applied Geochemistry 104418 (Oct. 2019) (abstract) (attached as exhibit).

<sup>98</sup> N. Jemison et al., Los Alamos National Laboratory, LA-UR-22-33061, *Reduction and potential remediation of U(VI) by dithionite at an in-situ recovery mine: Insights gained by 238U at 2* (attached as exhibit).

<sup>99</sup> NuFuels, Inc., *Project Narrative: Laboratory-Scale In-Situ Recovery and Restoration Demonstration Using Uranium Deposit Core Materials* at 4, ML23304A114 (attached as exhibit).

Against this record, the 2026 Notice offers the statement that one year is current practice. It may have approximated current practice in 2002 when Crow Butte Unit 1 was denied. It may have approximated current practice in 2021 when the NRC staff concluded that it did not meet the statutory benchmark. The Notice does not engage with any of the material above, and the regulatory analysis cites the same eleven restorations approved between 2003 and 2006 that have been the agency's entire dataset for seventeen years. This record does not support the codification of a one-year restoration period.

Under the Administrative Procedure Act (APA), an agency action is unlawful if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with [the] law" or "without observance of procedure required by law."<sup>100</sup> To comply with the APA, an agency "must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"<sup>101</sup> An agency rule is arbitrary and capricious "if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."<sup>102</sup>

When, as here, an agency action represents a change in policy or interpretation, the agency must provide a rational explanation for that change.<sup>103</sup> The agency must demonstrate that the new rule "is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better, which the conscious change of course adequately indicates."<sup>104</sup>

Here, the NRC has changed its policy position but failed to offer a rational explanation for that change, or offered an explanation that runs counter to the evidence before it.

## **F. Requested Changes.**

The States request that the Commission revise Criterion 14(f)(1) as follows:

1. Add a three-year minimum post-restoration monitoring period in proposed Criterion paragraphs 14(f)(1)(i), 14(f)(1)(ii), 14(f)(2), and 14(h)(2)(iii), as was proposed in 2021 and as is required by 40 C.F.R. § 264.96(c), the MOU, and AEA Sections 84a.(2) and 84a.(3).
2. Add a performance-based requirement, modeled on Crow Butte License Condition 10.3C as amended in 2003: post-restoration monitoring shall continue beyond the minimum period until the data show no statistically significant increasing trend for any hazardous constituent at any point-of-compliance well.
3. Define the compliance period for ISR facilities in Criterion paragraph 5B(1)(b) or Criterion 14(f), consistent with 40 C.F.R. § 264.96, as the period beginning with

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<sup>100</sup> 5 U.S.C. § 706(2)(A), (D).

<sup>101</sup> *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotation omitted).

<sup>102</sup> *Id.*

<sup>103</sup> *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).

<sup>104</sup> *Id.*

the first exceedance and continuing at least through completion of post-restoration monitoring.

4. Specify the statistical methods for determining “statistically significant exceedance” by reference to 40 C.F.R. § 264.97(h)–(i) and EPA’s *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance* (EPA 530/R-09-007, 2009), rather than leaving the method to “generally accepted statistical techniques.”
5. Provide expressly that nothing in Criterion 14(f) limits the authority of a State to require a longer post-restoration monitoring period under State law or an Agreement State program.

#### **IV. The Technical Basis Offered for the Proposed Rule Does Not Support It.**

The Notice justifies codifying current practice on grounds that current practice has been “shown to be successful for more than 40 years.”<sup>105</sup> The three industry letters make the same claim and cite the same sources. This Section examines those sources and disputes that current practice could be considered “successful.” The NRC’s cited sources consist of one dataset, compiled in 2009 from three facilities, that has never been updated, that excludes the State with the most ISR facilities, and that documents the three sites’ *failure* to reach baseline for the constituents of greatest concern.

##### **A. The Dataset.**

In July 2009 the NRC staff responded to a Commission directive to “provide the Commission with the data that it has in hand that assesses environmental impacts to the groundwater from previously licensed in-situ uranium recovery (ISR) facilities.”<sup>106</sup> The staff reported that it “found relevant information from three NRC licensed ISR facilities”—COGEMA’s Irigaray/Christensen Ranch, Power Resources’ Smith Ranch/Highland in Wyoming, and Crow Butte in Nebraska—and from research-and-development pilots licensed in the late 1970s. It stated expressly: “The existing data on impacts to groundwater at the Texas licensed facilities were not available for NRC review and not summarized in this report.”<sup>107</sup>

The staff had approved eleven wellfield restorations at the three facilities. Nine were at COGEMA Irigaray; one was HUP Wellfield A at Smith Ranch/Highland; one was Mine Unit 1 at Crow Butte—the restoration discussed in Section III.C, *supra*. The approvals date from 2003 to 2006.<sup>108</sup>

The document the industry letters cite as the NRC’s 2014 data compilation, NRC-075 (ML14172A092), is the 2009 enclosure reproduced verbatim with the heading “Submitted: June 20, 2014.” The commenting States have compared the two documents line by line. No datum was

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<sup>105</sup> 91 Fed. Reg. at 57,730.

<sup>106</sup> Staff Assessment of Groundwater Impacts From Previously Licensed In-Situ Uranium Recovery Facilities (July 10, 2009) (ML091770187), with enclosure, *Data on Groundwater Impacts at the Existing ISR Facilities* (ML091770385).

<sup>107</sup> *Data on Groundwater Impacts at the Existing ISR Facilities* (ML091770385), Enclosure at 1.

<sup>108</sup> 2017 NRC Staff Comments on EPA Proposed Rule (ML17173A638) at 4.

added.<sup>109</sup> The 2026 regulatory analysis, in turn, identifies the “probable hazardous constituents that will require post-restoration monitoring based on NRC staff analysis of NRC approved restorations of 11 ISR wellfields at 3 NRC licensed ISR facilities.”<sup>110</sup> The 2026 Rule thus rests on a dataset that closed in 2006.

## **B. What the Dataset Shows.**

The industry letters quote the 2009 assessment for the conclusion that approved restorations “do not pose a threat to human health or the environment.”<sup>111</sup> The States quote here the findings that precede that conclusion, to provide it with needed context:

On restoration to baseline, the staff’s 2009 study found: “The primary goal of restoration is to return the production zone to pre-operational conditions, which would result in no impact; however, that is usually not attainable for all constituents at most ISRs.”<sup>112</sup> “All of the restorations had levels of one or more parameters above baseline levels.”<sup>113</sup> Baseline was attained for “50 to 70 percent of the 35 parameters commonly monitored” but “is not attainable for other constituents, in particular, the major and trace cations with solubilities most susceptible to the oxidation state of the aquifer water (i.e., iron, manganese, arsenic, selenium, uranium, vanadium and radium-226).”<sup>114</sup> At COGEMA Irigaray, baseline was reached for 50 percent of parameters, and thirteen parameters exceeded even the observed range of baseline values. At HUP Wellfield A and Crow Butte Mine Unit 1, 70 percent; the constituents not restored at both include uranium, arsenic, and radium-226.<sup>115</sup>

Every constituent the 2009 staff identified as not restorable to baseline is a hazardous constituent under 10 C.F.R. Pt. 40, Appendix A, Criterion 13. Every one appears on the 2026 regulatory analysis’s list of constituents expected to require post-restoration monitoring. And every one is a candidate for an alternate concentration limit under a rule that permits an ACL whenever the licensee “cannot practically achieve” the approved limit. The NRC’s own data establish that, for the constituents that carry the greatest health risks, the ACL is not the exception; it is the expected outcome.<sup>116</sup>

On excursions, the staff’s cover memorandum reports “over 60 events” but states that “[n]one had resulted in environmental impacts.”<sup>117</sup> The enclosure reports 63 events at the three facilities, including eleven vertical excursions into overlying or underlying aquifers at COGEMA and nine at Crow Butte. “In some cases, the excursions continued for several years.”<sup>118</sup> Four

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<sup>109</sup> It is believed that the “Submitted” date refers to the date this document was entered as an exhibit in an NRC licensing proceeding, not the date of its creation. *See* Electronic Hearing Docket 040-9075-MLA, Powertech USA, Staff Pre-filed Exhibit NRC-075.

<sup>110</sup> ML26243A343 at 3-7 n.1.

<sup>111</sup> *Data on Groundwater Impacts at the Existing ISR Facilities* (ML091770385), Enclosure at 3.

<sup>112</sup> *Id.* at 1.

<sup>113</sup> *Id.* at 2.

<sup>114</sup> *Id.* at 2–3.

<sup>115</sup> *Id.* at 3.

<sup>116</sup> *See* Section V, *infra*.

<sup>117</sup> Staff Assessment of Groundwater Impacts From Previously Licensed In-Situ Uranium Recovery Facilities (July 10, 2009) (ML091770187) at 1-2.

<sup>118</sup> *Data on Groundwater Impacts at the Existing ISR Facilities* (ML091770385) at 4.

horizontal excursions at Crow Butte “lasted for up to six years.”<sup>119</sup> At COGEMA, “most ‘long-term’ vertical excursion events were terminated prior to reaching pre-excursion levels by the regulatory agencies following an in-depth review of impacts”—that is, excursion status was lifted administratively, but it was not resolved.<sup>120</sup> One COGEMA excursion “was not controlled in a timely manner during 2004-2005,” and was released by the Wyoming Department of Environmental Quality at the licensee’s request while the indicator parameters “remained elevated.”<sup>121</sup>

On well integrity, the staff found 135 mechanical integrity failures at COGEMA since 1998, and 18 at Smith Ranch/Highland in ten quarters, at rates less than five percent of wells tested annually; a 2002 spike at Smith Ranch attributed to “inferior casing material”; and, at two of the three facilities, no investigation of the overlying aquifer was immediately performed following a failure. At Crow Butte, one casing coupling failure “resulted in impacts to the shallow aquifer.”<sup>122</sup>

The 2026 Rule’s excursion provisions—a threshold of two or more indicator constituents, a 60-day clock with NRC-approvable extensions, corrective action limited to “portions of the wellfield,” and NRC-approvable alternative criteria for declaring an excursion eliminated—must be evaluated against a record in which excursions lasted years and were closed by regulatory action rather than by correction. Without additional analysis, the current record does not support the Proposed Rule.

**C. The Staff’s No Documented Evidence of Contamination Is Measured by the Aquifer Exemption Boundary, Not by Actual Restoration.**

The proposition the industry letters advance is that “in more than 40 years of operational experience, NRC staff have stated that they were not aware of any documented instances for an ISR wellfield being the source of contamination of an adjacent or nearby aquifer.”<sup>123</sup> The source is the NRC staff’s 2017 comments on EPA’s proposed Part 192 rule. However, those comments are narrow and make a precise claim that carefully limits the meaning of that statement:

The NRC staff acknowledges that its operational experience with licensing and regulating uranium ISR facilities shows that excursions have occurred at ISR wellfields. This operational experience, however, has shown no evidence that contamination has crossed into the non-exempt portion of the subject aquifer or into adjacent or nearby aquifers.<sup>124</sup>

The staff further explained that the aquifer exemption boundary “fully encompass[es] the wellfield (i.e., the outer monitoring well ring) and extend[s] beyond it, currently by a distance of 100 to 180 feet,” and asked EPA to delete the phrase “surrounding groundwater” from its definition

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<sup>119</sup> *Id.* at 8.

<sup>120</sup> *Id.* at 7.

<sup>121</sup> *Id.* at 4, 7–8.

<sup>122</sup> *Id.* at 5, 9.

<sup>123</sup> NMA Letter at 6.

<sup>124</sup> ML17173A638 at 5.

of excursion on that basis.<sup>125</sup> The industry's understanding that the Staff found no evidence of contamination should instead be understood to mean that no contamination has been documented crossing a line drawn 100 to 180 feet outside the monitoring ring, at three facilities, on data ending in 2006, with excursion status terminated by regulatory action for some of those facilities with long-term excursions.

Further, that statement is about the Safe Drinking Water Act exemption. It is not a statement about restoration. The AEA and 40 CFR Part 192 require restoration of the production zone regardless of any SDWA aquifer exemption—the notice itself says so: “to the extent the Class III permittee is granted an aquifer exemption, the UIC program does not require the UIC Class III well permittee (i.e., the NRC licensee) to restore the groundwater quality of the production unit of the exempted aquifer. The NRC requires restoration of groundwater in the production unit under the Uranium Mill Tailings Radiation Control Act (UMTRCA).”<sup>126</sup>

The edge of the exempted aquifer is the boundary of where the ACL will be set, where the licensee's obligation ends, and where the State may take title under AEA section 83b.(1)(A). Whether contamination has crossed the exemption boundary is the wrong question for a rule about restoration. The right question is whether restoration works inside it, and the NRC's own data say that for uranium, selenium, arsenic, and radium-226, it usually does not.

#### **D. The Texas Record the NRC Did Not Obtain.**

Texas has authorized more ISR facilities than any other jurisdiction. The 2009 staff assessment excluded them. Two independent reviewers examined the Texas Commission on Environmental Quality's restoration files in 2008 and 2009. The U.S. Geological Survey presented its findings at the Texas Commission on Environmental Quality's (TCEQ) own Environmental Trade Fair in Austin on May 12, 2009, approximately two months before the NRC staff stated that the Texas data were not available for NRC review.<sup>127</sup>

USGS found that 27 mines had been developed in Texas across 77 production areas, and that baseline and amended restoration values existed for all 77 in TCEQ records. “All [Production Area Authorizations (PAAs)] in Texas have received amended restoration goals for at least one element.”<sup>128</sup> The amended values were “believed to be a relatively arbitrary value set by the regulators, as illustrated by the number of PAAs that set amended values at rounded whole numbers that were unrelated to any restoration level actually achieved in the PAAs.”<sup>129</sup> Final post-restoration data existed for only 22 production areas at 13 mines; the remaining 55 were released without final sample data in the file.<sup>130</sup> Among the 22: “Eighty-six percent of Texas PAAs show a final restoration above MCL. In 68 percent of PAAs, final value exceeded baseline” for

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<sup>125</sup> *Id.* at 4–5.

<sup>126</sup> 91 Fed. Reg. at 57,736.

<sup>127</sup> USGS Open-File Report 2009-1143 (Hall) at 1.

<sup>128</sup> *Id.* at 9.

<sup>129</sup> *Id.*

<sup>130</sup> *Id.* at 10.

uranium.<sup>131</sup> For selenium, 55 percent exceeded baseline after restoration.<sup>132</sup> “[N]o well field for which final sample results were found in TCEQ records returned every element to baseline.”<sup>133</sup>

The second review, by a consulting hydrogeologist working from the same TCEQ files and spreadsheets a year earlier, reached the same conclusions and added one: “Thus far, I have not found, in UIC’s records, evidence that requests for Amended Restoration Tables have been denied by TCEQ.”<sup>134</sup> Every request for a relaxed standard was granted.

The Texas record is the natural experiment for what an undefined standard for relaxing restoration limits produces. It is also the record the NRC never obtained, although a sister federal agency published it seventeen years ago, and it has been cited in EPA’s Part 192 docket since 2015.

#### **E. The Regulatory Analysis Assumes the Requirements the Proposed Rule Would Delete.**

The 2026 regulatory analysis estimates post-restoration monitoring costs “based on a hypothetical 20-acre square wellfield that contains 20 point of compliance wells in the production unit at one well per acre, five overlying and five underlying aquifer point of compliance wells for excursion detection at one well per 4 acres, and 12 point of compliance wells on a 500 foot spacing on the perimeter.”<sup>135</sup> The one-per-acre density in the production unit is the 2021 requirement the 2026 Rule proposes to remove. The analysis therefore either models a rule other than the one proposed, or assumes that guidance will produce the density the rule no longer requires. In either case the analysis does not evaluate the proposal before the public, and its conclusion that the rule imposes no incremental cost on licensees is unsupported.

#### **F. Request.**

The States request that, before issuing a final rule, the Commission place in the docket and afford opportunity for comment upon: (1) restoration approval data, including constituent-by-constituent comparison to baseline and to the approved limit, for every wellfield restoration approved by the NRC or an Agreement State since 2006; (2) excursion and mechanical-integrity-failure data for the same period; (3) the Texas restoration record compiled by USGS and TCEQ; and (4) a regulatory analysis that evaluates the rule as proposed rather than the rule as it existed in 2021.

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<sup>131</sup> *Id.* at 15.

<sup>132</sup> *Id.* at 16.

<sup>133</sup> *Id.* at 21.

<sup>134</sup> B. K. Darling, *Report on Findings Related to the Restoration of Groundwater at In-situ Uranium Mines in South Texas* at 3 (Sept. 29, 2008) (ML15239B078) (attached as exhibit).

<sup>135</sup> ML26243A343 at 3-7.

**V. The Alternate Concentration Limit Provisions Supply No Standard, and the Record Shows That Alternate Concentration Limits Are the Expected Outcome Rather Than the Exception.**

**A. What the Rule Proposes.**

Proposed Criterion 14(f) requires restoration of hazardous constituents in the production unit to the concentration limits approved under Criterion subsection 5B(5)(a) or (b), and then provides that a licensee which “cannot practically achieve” an approved limit may propose an alternate concentration limit (ACL) under paragraph 5B(5)(c), to be submitted “as an amendment of a license in accordance with 10 CFR 40.44,” and evaluated against the factors in paragraphs 5B(4) and 5B(6).<sup>136</sup> The preamble describes the sequence: “If all efforts to restore ground water have failed and the facility cannot practically achieve the approved concentration limit for a hazardous constituent, the facility may apply for an alternate concentration limit (ACL).”<sup>137</sup> It then asks, as its fifth specific request for comment on the ISR provisions, “[w]hat additional factors or criteria should the NRC consider in either this rulemaking or through the development of guidance documents for the consideration of ACL’s at ISR facilities?”<sup>138</sup>

This Section answers that question.

**B. Under Criterion 14(f), the “Cannot Practically Achieve” Standard Is Undefined.**

Nothing in Criterion 14 or Criterion 5B(5) says what it means that a licensee “cannot practically achieve” the approved concentration limits for a hazardous constituent. The Proposed Rule does not require the licensee to have completed the restoration plan approved under Criterion 14(b)(5) before seeking an ACL. It does not require a minimum number of pore volumes to have been treated. It does not require a showing that the methods described in the approved plan were applied and exhausted, that additional treatment would be technically infeasible, or that the limit could not be met with available technology. It does not say whether cost alone suffices. It does not require the licensee to address the aquifer exemption on which its injection permit depends, or the underground sources of drinking water that paragraph 5B(4) directs the Commission to consider in granting an exemption or ACL. And it does not require the licensee to show that the concentration it proposes to leave in place is stable, rather than the concentration measured at the moment restoration was abandoned.

The 2021 staff proposal contained the one provision that would have given some content to the phrase, “cannot practically achieve.” The 2021 Rule would have required that each wellfield restoration plan “include an analysis or demonstration that the wellfield can be restored to meet” the targeted limits.<sup>139</sup> A licensee that had made that demonstration before injecting, and then failed to meet the limit, would have a record against which the NRC could measure impracticability. The 2026 Rule would delete that licensing demonstration. The Proposed Rule thereby permits a

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<sup>136</sup> 91 Fed. Reg. at 57,755.

<sup>137</sup> 91 Fed. Reg. at 57,737.

<sup>138</sup> *Id.*

<sup>139</sup> ML21067A127 at 83 (2021 Criterion 14(b)(5)(v)); Section II.C, *supra*.

licensee to seek an ACL for a limit it was never required to show was achievable, on a showing the rule never defines.

Texas has already run this experiment. Its program allows an operator to seek amended restoration values where the originally-set values cannot be met. The USGS review of Texas records found that “[a]ll PAAs in Texas have received amended restoration goals for at least one element,” that the amended values appeared to be “relatively arbitrary,” and that “no well field for which final sample results were found in TCEQ records returned every element to baseline.”<sup>140</sup> The independent review of the same files found no record of a request ever having been denied.<sup>141</sup> An undefined standard for relaxing the restoration target produces universal relaxation. The Proposed Rule adopts the same architecture at the federal level.

### **C. The Commission’s Own Record Shows That the ACL Is the Expected Outcome.**

The 2009 staff assessment states that restoration to baseline “is usually not attainable for all constituents at most ISRs,” that “[a]ll of the restorations had levels of one or more parameters above baseline levels,” and that baseline “is not attainable” for “iron, manganese, arsenic, selenium, uranium, vanadium and radium-226.”<sup>142</sup> The 2026 regulatory analysis identifies the “probable hazardous constituents that will require post-restoration monitoring” as [uranium, radium-226, arsenic, barium, selenium, lead, and vanadium].<sup>143</sup> The licensee for the Crownpoint Uranium Project has told the Department of Energy that “no ISR site has restored all groundwater constituents of concern to pre-operational concentrations and most receive alternate concentration limits for at least one regulated constituent.”<sup>144</sup>

The constituents for which restoration to the approved limit fails are the constituents that carry the health risk. For those constituents, the ACL is not a site-specific exception to be granted “after considering practicable corrective actions.”<sup>145</sup> It is the expected disposition of every wellfield. A provision that will govern the final condition of every ISR production zone in the country deserves a defined standard and a public process. The Proposed Rule supplies neither.

### **D. The Hearing Commitment Appears Only in the Preamble.**

The Proposed Rule’s preamble states: “After receiving a licensee’s application requesting an ACL and consistent with the requirements of 10 CFR 2.104, the NRC would publish a notice of opportunity for hearing in the Federal Register.”<sup>146</sup> The States welcome that statement. But it is not in the Proposed Rule’s text. The regulatory text of paragraph 14(f) says only that an ACL application “shall be submitted as an amendment of a license in accordance with 10 CFR 40.44.”<sup>147</sup> Whether a given amendment application receives a published notice of opportunity for hearing

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<sup>140</sup> OFR 2009-1143 at 9, 21; Section IV.D, *supra*.

<sup>141</sup> Darling (2008) at 3.

<sup>142</sup> ML091770385 at 2–3; Section IV.B, *supra*.

<sup>143</sup> ML26243A343 at 3-7 n.1.

<sup>144</sup> ML23304A114; Section III.E, *supra*.

<sup>145</sup> 91 Fed. Reg. at 57,737.

<sup>146</sup> 91 Fed. Reg. at 57,735.

<sup>147</sup> 91 Fed. Reg. at 57,755.

under section 189a. of the AEA<sup>148</sup> is a determination the staff makes case by case, and the preamble’s description of what the NRC “would” do binds no one. If the Commission intends that every ACL application be noticed for hearing—and it should, because the ACL is the decision that fixes the permanent condition of the aquifer—the rule should say so.

**E. The Proposed Rule Does Not Require State or EPA Concurrence for an ACL in an Aquifer the State May Own.**

An ACL is set inside an aquifer that was exempted under the Safe Drinking Water Act by the EPA or a primacy State, that lies within the State’s water-allocation jurisdiction, and whose residual contamination the State may take title to under AEA Section 83b.(1)(A). Current Criterion 5B(4) directs the Commission to consider, among other things, the proximity of underground sources of drinking water and the potential for migration. It does not require the Commission to ask the agency that granted the aquifer exemption, or the State whose water is at issue, what they think. The 2020 MOU commits the NRC and EPA to coordinate on ISR groundwater matters; but, the 2026 Rule does not carry that commitment into any ACL adjudicatory decision. For a State that will hold the aquifer after the licensee is gone, the least the Proposed Rule should do is provide the State the right to be consulted, and to receive a written response, before the permanent ACLs are fixed.

**F. Requested Changes.**

The commenting States request that the Commission revise Criteria 14(f) and 5B(5)(c), to:

1. Restore the 2021 Proposal’s requirement that each wellfield restoration plan include an analysis or demonstration that the wellfield can be restored to the targeted limits, 2021 Criterion 14(b)(5)(v), so that any later claim of impracticability is measured against a pre-operational showing.
2. Define “cannot practically achieve” to require, at a minimum, that the licensee demonstrate (i) that it has fully implemented the approved restoration plan, including treatment of the estimated pore volumes; (ii) that additional restoration using available methods would not achieve the approved limit or would not produce a meaningful further reduction; (iii) that the proposed alternate limit reflects a stable concentration demonstrated through the post-restoration monitoring required by Criterion 14(f)(1) as revised under Section III, *supra*; and (iv) that cost, standing alone, cannot be the basis of the request.
3. Provide in the rule text that the Commission will publish a notice of opportunity for hearing under AEA Section 189a. for every application for an alternate concentration limit.
4. Require that the Commission, before approving any alternate concentration limit, provide the application to the State in which the facility is located and to the agency that administers the underground injection control program for the site, afford each

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<sup>148</sup> 42 U.S.C. § 2239(a).

not less than sixty days to comment, and respond in writing to the comments received.

5. Require that every ACL application address the aquifer exemption on which the facility's injection permit depends, and the underground sources of drinking water identified under paragraph 5B(4).

## **VI. Proposed Criterion 14 Delegates to Unreviewable Staff Approvals the Determinations That Control Groundwater Outcomes.**

### **A. Criterion 14's Structure.**

Criterion 14 is written as a series of licensee submittals and NRC approvals. Under Criterion paragraphs 14(b) through 14(h), each of the following submittals are a matter the licensee proposes and the NRC staff approves: the background concentrations that define the restoration target; the indicator constituents and upper control limits that define an excursion; the number, location, and screen interval of point-of-compliance wells; the wellfield pre-operational package; the wellfield restoration plan; the plugging and abandonment plan; "a different number of indicator constituents" selected by the licensee, "a different number of samples," and "different approaches for considering an excursion eliminated"; and "an alternate time period" for corrective action. None of these submittals are required to be noticed. None is designated as a license amendment. None is subject to the opportunity for hearing that AEA Section 189a. requires for license amendments.

That structure matters because these approvals, not the license itself, determine whether groundwater is protected. A baseline that is set high, an indicator list that is set short, a control limit that is set loose, or a well network that is set sparse will pass through the life of the facility unexamined by anyone but the staff and the licensee. The 2021 Proposal addressed the problem in part by fixing several of these parameters in the rule. The 2026 Rule would convert each into a variable that will be shielded from public examination.

### **B. No Density Floor for Point-of-Compliance Wells.**

The 2021 Proposal required "at least one well, which may be a production or injection well, per acre within the production unit unless otherwise approved by the NRC."<sup>149</sup> The 2026 Rule would require only that the "number, location, and screen interval"<sup>150</sup> of the wells be "shown to be sufficient to provide a representative sample."<sup>151</sup> The one-per-acre figure survives only in the draft NUREG-1569 supplement, where it may be varied on a "technical basis."<sup>152</sup> Guidance is not a rule; a licensee may propose, and the staff may accept, any density that can be described as representative. Yet the 2026 regulatory analysis prices post-restoration monitoring at exactly the

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<sup>149</sup> 2021 Criterion 14(b)(3)(i).

<sup>150</sup> 91 Fed. Reg. at 57,753 (proposed Criterion 14(b)(3)(i)).

<sup>151</sup> *Id.*

<sup>152</sup> ML26243A344; Section II.C, *supra*.

density the Proposed Rule would no longer require.<sup>153</sup> The States request that the 2021 density floor be restored.

### **C. The Proposed Hazardous Constituent Test Is Circular.**

Proposed Criterion 14(b)(2) identifies the hazardous constituents subject to restoration with a three-part test, ensuring that the constituent: (i) must be one that may be derived from the byproduct material produced by ISR operations; (ii) must have been detected in the groundwater of the production unit; and (iii) must be listed in Criterion 13.<sup>154</sup> The second element makes the scope of the licensee's restoration obligation a function of the scope of its baseline sampling. A constituent not analyzed for baseline levels is therefore not detected, and a constituent not detected is not a hazardous constituent per Criterion 14(b)(2), however much of it the lixiviant mobilizes. The paragraph's own lead-in, which refers to constituents that "may be expected to increase in concentration as a result of ISR operations," states the correct test. The operative element contradicts it. The States request that the second, "detected" element be replaced with a requirement that every Criterion 13 hazardous constituent reasonably expected to be mobilized by the lixiviant be analyzed at baseline and considered a hazardous constituent subject to restoration.

### **D. The Uppermost Aquifer Provisions Cannot Operate.**

Proposed Criterion 14(d)(4) requires a program to detect leakage into the uppermost aquifer.<sup>155</sup> Paragraph 14(h)(3) requires, upon detection, corrective action "to achieve compliance with the approved concentration limits."<sup>156</sup> But nothing in Criterion 14 requires baseline characterization of the uppermost aquifer, establishes point-of-compliance wells in it, or sets concentration limits for it. Paragraph 14(b)(3)(i) places point-of-compliance wells in the aquifers immediately overlying, underlying and adjacent to the production unit, as appropriate.<sup>157</sup> The uppermost aquifer, as the Notice itself describes it, is a different unit: it is the aquifer exposed to "near surface and above surface ISR operations" such as evaporation ponds, processing facilities and wellfield infrastructure, as distinguished from "the aquifers immediately overlying, underlying, and adjacent to the production unit where uranium is extracted," and the point-of-compliance definition treats locations "below the uppermost aquifer in the production unit" and "in aquifers adjacent to, above, or below the production unit" as separate from it.<sup>158</sup> The corrective-action provision thus directs a licensee to restore an aquifer to limits that were never set. The preamble presents the uppermost-aquifer provisions as new protections.<sup>159</sup> But as written, they are a monitoring program with no standard and a remedy with no target. Impacts from ISR operations to the uppermost aquifer are documented: the 2009 staff assessment records a casing failure at Crow Butte that "resulted in impacts to the shallow aquifer," and two of three licensees that did

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<sup>153</sup> ML26243A343 at 3-7; Section IV.E, *supra*.

<sup>154</sup> 91 Fed. Reg. at 57,753.

<sup>155</sup> 91 Fed. Reg. at 57,754.

<sup>156</sup> 91 Fed. Reg. at 57,755.

<sup>157</sup> 91 Fed. Reg. at 57,753.

<sup>158</sup> 91 Fed. Reg. at 57,736; *id.* at 57,734, 57,751 (definition of point of compliance); *see also* SECY-21-0067, Enc. 1, at 50 (ML21067A127) (same).

<sup>159</sup> 91 Fed. Reg. at 57,736.

not investigate the overlying aquifer after mechanical-integrity failures.<sup>160</sup> The provision that would address that record has to be completed in order to function.

#### **E. The Excursion Definition and the Corrective-Action Clock.**

Under Criterion paragraph 14(d)(2)(iii)(A), an excursion exists only when “two or more” indicator constituents exceed their upper control limits at a point-of-compliance well.<sup>161</sup> A sustained exceedance of one indicator, such as chloride alone, the earliest and most reliable signal of leachant movement, is not an excursion and triggers nothing. Under paragraph 14(h)(1), corrective action beyond adjustment of pumping is not required until an excursion has persisted for sixty days after confirmation “or an alternate time period approved by the NRC,” and then only in “portions of the wellfield potentially contributing to the continuing excursion.”<sup>162</sup> Under paragraph 14(d)(2)(iv)(A), “[l]icensees can propose different approaches for considering an excursion eliminated.”<sup>163</sup>

Each of these provisions must be read against the record described in Section IV.B, *supra*: sixty-three excursions at three facilities, “[i]n some cases” continuing “for several years,” four lasting “up to six years,” and long-term vertical excursions “terminated prior to reaching pre-excursion levels by the regulatory agencies.”<sup>164</sup> A definition that requires two constituents, a clock the staff may extend, a remedy confined to “portions” of the wellfield, and an exit criterion the licensee may redefine are not a codification of the practice that produced that record. They are a relaxation of it.

#### **F. The Statistical Method Is Unspecified.**

“Statistically significant exceedance” governs the excursion determination, the post-restoration monitoring endpoint, and the corrective-action trigger.<sup>165</sup> The Proposed Rule leaves the method to “generally accepted statistical techniques.”<sup>166</sup> But the RCRA regulations to which the Proposed Rule must be comparable do not: 40 C.F.R. § 264.97(h) specifies the permissible methods, and § 264.97(i) requires the regulator to specify which is to be used and the performance standards it must meet. The EPA’s 2009 *Unified Guidance on Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* devotes several hundred pages to the question.<sup>167</sup> With four quarterly samples per well, whether rebound is “significant” could vary substantially depending on the protocols used by the licensee to make that showing. The rule leaves that choice to a staff approval.<sup>168</sup>

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<sup>160</sup> ML091770385 at 5, 9; Section IV.B, *supra*.

<sup>161</sup> 91 Fed. Reg. at 57,754.

<sup>162</sup> Section II.C, *supra*.

<sup>163</sup> 91 Fed. Reg. at 57,754.

<sup>164</sup> ML091770385 at 4, 8–9.

<sup>165</sup> 91 Fed. Reg. at 57,755.

<sup>166</sup> *Id.* at 57,753.

<sup>167</sup> See generally EPA, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance* (Mar. 2009) (EPA 530/R-09-007, 2009), <https://archive.epa.gov/epawaste/hazard/web/pdf/unified-guid.pdf>

<sup>168</sup> Section III.F.4, *supra*.

## **G. Requested Changes.**

The commenting States request that the Commission:

1. Restore the 2021 Proposal's one-well-per-acre point-of-compliance density to Criterion paragraph 14(b)(3)(i).
2. Revise Criterion paragraph 14(b)(2) so that the hazardous constituents subject to restoration include every Criterion 13 constituent reasonably expected to be mobilized by the lixiviant, whether or not detected at baseline, and require baseline analysis for each.
3. In Criterion paragraph 14(d)(4), require baseline characterization of the uppermost aquifer, designated point-of-compliance wells in it, and concentration limits established under Criterion 5B(5), so that paragraph 14(h)(3) has a standard to enforce.
4. Revise Criterion paragraph 14(d)(2)(iii)(A) so that a confirmed exceedance of a single indicator constituent constitutes an "excursion"; delete "or an alternate time period approved by the NRC" from paragraphs 14(h)(1) and 14(h)(3)(ii); restore "the production unit" in paragraph 14(h)(1)(i); and delete the licensee-proposed alternative for declaring an excursion eliminated in paragraph 14(d)(2)(iv)(A).
5. Specify the statistical methods by reference to 40 C.F.R. § 264.97(h)–(i) and to the EPA's *Unified Guidance*.
6. Provide that approval of background concentrations, indicator constituents and upper control limits, point-of-compliance well networks, wellfield restoration plans, and any variance from a numerical requirement of Criterion 14 shall be issued as a license amendment, with copies of the licensee's submittal and the staff's approval provided to the host State.

## **VII. The Rule Impairs State Authority and Excludes the States From Decisions Within Their Borders.**

The States are concerned that the reclassifications of Compatibility Criteria in the Proposed Rule are part of a broader trend under the NRC's wholesale revision designed to limit the States' authority to set and enforce more stringent protections for public health, environment, and natural resources than the current federal administration would like. Though the States do not concede that the Proposed Rule, if finalized, would preempt the States' authority over groundwater in their jurisdictions, the States are concerned that licensees made read the rule that way and that it will invite federalism challenges.

**A. The Reclassification of Criteria 5 and 6 From Compatibility Category C to Category B.**

The Proposed Rule would reclassify Criteria 5 and 6 from a Compatibility Category C to a Category B. Under the Commission's *Agreement State Program Policy Statement*,<sup>169</sup> and Management Directive 5.9, a program element assigned to Compatibility Category C is one whose "essential objective[s]" an Agreement State must adopt "to avoid conflict, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis," but which the State may implement in its own way and may make more stringent or "restrictive."<sup>170</sup> A program element assigned to Category B is one that "cross[es] jurisdictional boundaries" and must be adopted in a form "essentially identical" to the Commission's.<sup>171</sup>

The Proposed Rule would move Criterion 5 (which sets the groundwater protection standards for uranium recovery facilities), and Criterion 6 (which sets the requirements for closure and long-term stabilization of disposal sites), from Compatibility Category C to Category B.<sup>172</sup> Under the Proposed Rule, an Agreement State could arguably no longer set a more protective restoration limit, a longer stability-monitoring period, a more conservative point of compliance, or a stricter closure standard than the Commission's, because the State's requirements would have to be "essentially identical" to the NRC's. The federal standard, which has functioned as a floor beneath State programs since Appendix A was adopted, would instead become a ceiling above them.

**i. The justification is energy policy, not radiation protection.**

The Notice does not claim that any Agreement State's Criterion 5 or 6 program element has caused a gap, conflict, or disorder in the national regulatory pattern. It does not identify any State standard as lacking a public-health or environmental basis. Rather, its stated justification is that domestic uranium milling is "important to national security" and to "the development and growth of domestic uranium milling," with citations to Executive Orders 14156, 14154, and 14299.<sup>173</sup> Those orders concern energy supply. They do not purport to amend the Atomic Energy Act, and they say nothing about compatibility categories. The NRC's *Agreement State Program Policy Statement* permits the Commission to object to a more stringent State requirement only where it would "prohibit a practice authorized by the AEA and in the national interest without an adequate public health and safety or environmental basis related to radiation protection."<sup>174</sup> The Notice does not attempt to make that showing. Instead, it substitutes a general policy preference for uniformity in the service of energy production.

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<sup>169</sup> NRC, *Agreement State Program Policy Statement; Correction*, 82 Fed. Reg. 48,535 (Oct. 18, 2017).

<sup>170</sup> *Id.* at 48,539.

<sup>171</sup> *Id.*

<sup>172</sup> 91 Fed. Reg. at 57,747.

<sup>173</sup> 91 Fed. Reg. at 57,747–48.

<sup>174</sup> 82 Fed. Reg. at 48,539.

**ii. The “cross-jurisdictional” criterion is not met.**

Category B exists for program elements that operate across State lines, such as transportation of radioactive material, reciprocity for licensees working in several States, and sealed source and device registration.<sup>175</sup> Unless close to a State border, groundwater beneath a fixed wellfield does not cross a jurisdictional boundary. A restoration standard applied at Smith Ranch, Wyoming, for example, would not affect a licensee at Crow Butte, Nebraska. The Commission’s own 2021 Proposal, prepared with Agreement State participation, left Criterion 5 at Category C and moved the definition of “point of compliance” from Category A down to Category C, on the stated ground that “[t]he way the essential objectives are addressed need not be the same as NRC, provided the essential objectives are met.”<sup>176</sup> Nothing in the technical record changed between 2021 and 2026. Only the executive orders did.

**iii. The compatibility table is internally inconsistent.**

Under the Proposed Rule, Criteria 5 and 6 would become Category B.<sup>177</sup> Criterion 14--the provision that would actually implement the ISR groundwater standard and that Criterion paragraph 5B(1)(b) incorporates by reference--would be Category C. By contrast, 10 C.F.R. § 40.42(f), the extension provision for decommissioning timeliness, would move from Health and Safety to Category D, on grounds that it is “an administrative pathway for granting a delay or postponement of initiating decommissioning, which states are not required to offer.”<sup>178</sup> The Commission’s approach is thus inconsistent, proposing to bind the States to identical groundwater protection standards in Criteria 5 and 6 while leaving them free on implementation under Criteria 14, and free to omit the extension process altogether under § 40.42. If flexibility in implementation is consistent with an orderly national pattern for Criterion 14 and 10 C.F.R. § 40.42, it should also be consistent with one for Criteria 5 and 6. The only work the Category B designation does is to foreclose State numeric limits that are more protective of groundwater than are the Commission’s.

**iv. Criterion 5 Governs Nonradiological Constituents, which AEA Section 274k reserves to the States.**

Criterion 5 incorporates, through 40 C.F.R. § 192.32(a)(2) and § 264.94, the hazardous-constituent limits of the RCRA program: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and the listed organic compounds.<sup>179</sup> Section 274k of the AEA provides that “[n]othing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards.”<sup>180</sup> A State that limits selenium in groundwater to protect livestock and drinking water is regulating for a purpose other than protection against radiation hazards. A compatibility designation that would require the State to abandon that limit in favor of the Commission’s, on pain of a finding of incompatibility, reaches authority the statute expressly preserves. The Commission has not designated Criteria 5 and 6 as matters of common defense and security, which is the only basis in Section 274 for

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<sup>175</sup> *Id.*

<sup>176</sup> ML21067A127 at 66.

<sup>177</sup> 91 Fed. Reg. at 57,747.

<sup>178</sup> *Id.* at 57,748.

<sup>179</sup> 91 Fed. Reg. at 57,730, 57,733.

<sup>180</sup> 42 U.S.C. § 2021(k).

exclusive federal regulation.<sup>181</sup> But now, the NRC seeks the same result through the compatibility program.

**v. No Commenter Asked for a Change in Compatibility Classification.**

The Proposed Rule's reclassification was not in the 2021 Proposal package. It was not requested in any of the three industry letters that prompted other changes to the rule: in fact, those letters asked for the opposite. NMA urged the Commission to "[i]mprove coordination and collaboration with Agreement and non-agreement state regulatory agencies that have direct primacy over state groundwater resources."<sup>182</sup> Cameco acknowledged that "surface and groundwater in Wyoming are solely owned by the State."<sup>183</sup> And WMA asked that any rule be "compatible with existing agreement state regulations, guidance and practices."<sup>184</sup> The Commission's own licensees recognized what the Commission did not.

**B. The Expansion of "Byproduct Material" to Liquid Wastes With No Savings Clause Will Likely Create Challenges to States' Groundwater Regulatory Authority.**

Currently, 10 C.F.R. § 40.4 defines byproduct material, for purposes of Part 40, to include "discrete surface wastes resulting from uranium solution extraction processes." The Proposed Rule would add liquid wastes to that clause, so that byproduct material would include "discrete surface wastes *and liquid wastes* resulting from uranium solution extraction processes."<sup>185</sup> The Proposed Rule's preamble explains that the revision is intended "to include liquid wastes from ISR facilities that may impact groundwater."<sup>186</sup> The effect is to bring ISR process fluids expressly within Section 11e.(2) byproduct material and so within Appendix A and Criterion 14. However, this change may have major consequences for the States.

Since 2000, the Commission has taken the position that its jurisdiction over Section 11e.(2) byproduct material extends exclusively to the nonradiological as well as the radiological hazards of that material,<sup>187</sup> and that ISR liquid wastes are such material. Those positions have rested on staff requirements memoranda, and the Commission recognized at the time that "some NRC/EPA dual regulation of the ground-water at ISL facilities will continue."<sup>188</sup> Codifying the classification in 10 C.F.R. § 40.4—with no savings clause—converts those policy positions into a regulation with the force of law. Without conceding that it does, the States are concerned that this change would hand every ISR licensee an argument that the AEA occupies the field with respect to those fluids, and that a State groundwater discharge permit, a State-imposed injection condition, or a State restoration standard applied to them could be preempted.

That argument is not hypothetical. In 2025, a federal district court held that a New York statute prohibiting the discharge of radiological waste from a decommissioning nuclear plant into

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<sup>181</sup> 42 U.S.C. § 2021(m).

<sup>182</sup> NMA Letter at 7.

<sup>183</sup> Cameco Letter at 3.

<sup>184</sup> WMA Letter at 11.

<sup>185</sup> 91 Fed. Reg. at 57,751.

<sup>186</sup> 91 Fed. Reg. at 57,732.

<sup>187</sup> SRM-SECY-99-0277; Regulatory Issue Summary 2000-23.

<sup>188</sup> Regulatory Issue Summary 2000-23 (Nov. 30, 2000) (ML003773008) (describing SRM-SECY-99-0013).

the Hudson River was preempted by the AEA.<sup>189</sup> The court found that the statute regulated the disposal of NRC-licensed material, an activity within the field reserved to the Commission under AEA Section 274c, and that it had a “direct and substantial effect” on radiological safety decisions within the meaning of *English v. General Electric Co.*,<sup>190</sup> because it forced the licensee to change its disposal method.<sup>191</sup> The States are extremely concerned that ISR license applicants may apply the same reasoning to a State groundwater discharge permit governing ISR fluids that the Proposed Rule now labels “byproduct material.”

Further, the Proposed Rule contains no savings clause for State authority. Nothing in the proposed regulatory text or accompanying materials expressly preserves State regulatory authority over groundwater. The preamble describes the rule as “complementary to the EPA’s UIC regulations,”<sup>192</sup> and states that the NRC “has developed this proposed rule language to be complementary to EPA’s UIC program.”<sup>193</sup> Those statements, while helpful, are not in the rule, and on their face address only the federal UIC program, not State groundwater quality law. Proposed Criterion paragraph 14(g)(2) requires that wells be plugged “in accordance with applicable state and underground injection control regulations.”<sup>194</sup> The States support that provision. It demonstrates that deference to State law is workable within Appendix A. The Proposed Rule should extend that savings clause to the whole of Criterion 14.

The Commission’s third specific request for comment asks whether “the proposed rule or supplemental guidance create[s] a conflict with another federal regulation.”<sup>195</sup> It does not ask about State law. The omission is of a piece with the absence of any federalism analysis,<sup>196</sup> and with the fact that no State hosting NRC-licensed ISR facilities participated in the rule’s development.

### **C. The Proposed Rule Contains Insufficient Requirements for Notification to the States.**

Proposed Criterion paragraph 14(d)(5) would require the licensee to report confirmed excursions and uppermost-aquifer leakage to the NRC within one business day and in writing within seven days, and to submit restoration and corrective-action reports to the NRC.<sup>197</sup> Every report runs to the Commission. No notice is expressly mandated to the State whose groundwater is affected. Nor is notice required to the agency that issued the injection permit, to downgradient landowners, or to holders of water rights in the affected aquifer. Nothing requires that any report be made publicly available. For a State hosting an NRC-licensed facility, this could represent a step backward from current practice, under which license conditions and State permits commonly require concurrent notice. An excursion is a movement of mining fluid toward water the State administers: the State should learn of it when the Commission does.

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<sup>189</sup> *Holtec Int’l v. New York*, 801 F. Supp. 3d 235, 242 (S.D.N.Y. 2025) (on appeal to the U.S. Court of Appeals for the Second Circuit).

<sup>190</sup> 496 U.S. 72, 85 (1990).

<sup>191</sup> 801 F. Supp. 3d at 258-59.

<sup>192</sup> 91 Fed. Reg. at 57,736.

<sup>193</sup> *Id.* at 57,737.

<sup>194</sup> 91 Fed. Reg. at 57,755 (Criterion 14(g)(2)).

<sup>195</sup> 91 Fed. Reg. at 57,737.

<sup>196</sup> Section VII.D, *infra*.

<sup>197</sup> 91 Fed. Reg. at 57,754.

#### **D. The States Were Not Sufficiently Consulted, and the Rule Contains No Federalism Analysis.**

The Notice reports that Agreement State participation in this rule consisted of two representatives designated through the Organization of Agreement States, one each from Utah and Wyoming, and that the 2021 working group included one each from Texas and Wyoming.<sup>198</sup> No State hosting NRC-licensed uranium recovery without milling authority participated in either. No Tribal government is mentioned in the Notice. The Notice states that “[t]he EPA and Agreement States will be able to provide comments during the formal comment period for this proposed rule,”<sup>199</sup> but this comment period is a mere a thirty-three days—a period the Commission declined to extend.<sup>200</sup> By contrast, and as described above, industry met with the Commissioners in the week of September 22, 2025, and was told of “a brief window of opportunity” for input; three letters followed, and they shaped this rule.<sup>201</sup>

Executive Order 13132<sup>202</sup> requires an agency proposing a regulation with federalism implications—including one that imposes substantial direct compliance costs on State governments—to consult with State officials early in the process and to prepare a federalism summary impact statement. The Commission has historically treated the order as inapplicable to it as an independent agency. But the Notice itself reports that this rule was reviewed by the Office of Information and Regulatory Affairs under Executive Order 12866 as amended by Executive Order 14215.<sup>203</sup> An agency that has accepted the executive-branch review framework for the purpose of clearing a deregulatory rule cannot coherently disclaim the same framework’s federalism requirements for a rule that reclassifies State program elements and may give rise to preemption challenges. The absence of any federalism analysis--indeed, of any discussion of State authority outside the compatibility table--is a defect in the record on which the Commission proposes to act.

#### **E. Requested Changes.**

The commenting States request that the Commission:

1. Withdraw the reclassification of Criteria 5 and 6 to Compatibility Category B, and retain Category C.
2. Add to Appendix A a savings clause providing that nothing in Criteria 5, 6, or 14 limits the authority of any State under the Safe Drinking Water Act, the Clean Water Act, State water-quality or water-rights law, or AEA Section 274k, or precludes an Agreement State from adopting requirements more protective of groundwater than those in Appendix A; and clarify that Criterion 14 establishes minimum requirements.

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<sup>198</sup> 91 Fed. Reg. at 57,737, 57,745.

<sup>199</sup> *Id.* at 57,737.

<sup>200</sup> *See* § I.D., *supra*.

<sup>201</sup> *See* § II.D., *supra*.

<sup>202</sup> 64 Fed. Reg. 43,255 (Aug. 10, 1999).

<sup>203</sup> 91 Fed. Reg. at 57,745.

3. Withdraw the amendment to the definition of byproduct material in 10 C.F.R. § 40.4, or, in the alternative, accompany it with the savings clause and with an express statement in the rule text that the amendment does not alter the allocation of authority between the Commission and the States over groundwater.
4. Revise paragraph 14(d)(5) to require that every report submitted to the NRC be submitted concurrently to the State agency with jurisdiction over groundwater at the site and to the agency administering the underground injection control program, and that each be made publicly available in the NRC's document system within thirty days.
5. Provide for State consultation on alternate concentration limits and restoration approvals as requested in Section V.F.
6. Before issuing a final rule, consult directly with each affected State, Agreement and non-Agreement, and with affected Tribal governments, and prepare and docket a federalism analysis.

## **VIII. The “Abandoned Uranium Mine Waste Remediation” Definition Removes Reprocessing Residuals From the Statute.**

### **A. The Provision.**

The Proposed Rule adds to 10 C.F.R. Part 40, Appendix A's introduction a definition under which “any activity that removes uranium or thorium from waste rock located at or near an abandoned uranium mine” is “not considered uranium milling,” and “any waste stream resulting from remediation is not byproduct material as defined in this part.”<sup>204</sup> The preamble's entire explanation is that the definition is intended “to clarify the difference between abandoned uranium mine waste remediation activities and uranium milling activities,” and that the former “are regulated under the source material framework in 10 CFR part 40 while uranium milling activities are regulated under the source and byproduct material framework in 10 CFR part 40 and Appendix A to 10 CFR part 40.”<sup>205</sup> This explanation is confusing at best and seems calculated to obfuscate the real reason for the proposed change.

### **B. The Definition Change Was Not in the 2021 Proposal Package, Was Not Requested, and Has No Analysis.**

The definition has no counterpart in the 2021 Proposal. It was not requested in any of the three industry letters. It is not within the scope the Commission directed in SRM-SECY-19-0123, which called for a “narrowly targeted” rule addressing ISR groundwater.<sup>206</sup> The regulatory analysis does not address it. The categorical exclusion does not mention it. One paragraph of preamble accompanies a provision that would change the legal status of every ton of material processed at or near an abandoned uranium mine in the country.

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<sup>204</sup> 91 Fed. Reg. at 57,751; *see id.* at 57,732.

<sup>205</sup> 91 Fed. Reg. at 57,732.

<sup>206</sup> ML20296A469; *see* § II.A, *supra*.

### C. The AEA Does Not Permit this Change.

Section 11e.(2) of the AEA defines byproduct material as “the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.”<sup>207</sup> Waste rock at an abandoned uranium mine from which uranium is removed is, on the Commission’s own long-standing reading of the term, ore: the Commission has defined ore as “any natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.”<sup>208</sup> The residual is a waste produced by the extraction of uranium from that ore. It is byproduct material by statutory definition. In 2016, the Commission’s staff applied exactly that reasoning to conclude that the “ablation” processing of mined material in Colorado is uranium milling and that its residuals are 11e.(2) byproduct material.<sup>209</sup> The proposed definition reverses that conclusion for a class of material by regulation. An agency may not narrow a statutory definition by rule.

Under *Loper Bright Enterprises v. Raimondo*, the Supreme Court rejected *Chevron* deference to an agency’s interpretation of its own statutes, when those statutes did “not directly address[] the precise question at issue.”<sup>210</sup> According to *Loper Bright*, agencies have “no special competence in resolving statutory ambiguities,” and “even when an ambiguity happens to implicate a technical matter, it does not follow that Congress has taken the power to authoritatively interpret the statute from the courts and given it to the agency.”<sup>211</sup> Nevertheless, “an agency’s interpretation of a statute . . . may be especially informative to the extent it rests on factual premises within [the agency’s] expertise.”<sup>212</sup>

Here, the AEA contains no ambiguity: the AEA defines byproduct material to include “the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.”<sup>213</sup> No technical expertise is required to conclude that wastes from uranium extraction continue to be so once remediation activities have commenced. The NRC may not amend its own statute through rulemaking.

Even under the alternative assumption that some ambiguity exists in applying AEA Section 11e.(2) (which the States do not concede), the NRC is not entitled to deference because the NRC is *not* exercising its expert technical judgment. The Proposed Rule and regulatory analysis provide no explanation of why this redefinition is legally defensible or factually supportable. Under *Loper Bright*, courts will not defer to an agency’s judgment if it is not the product of its expertise.<sup>214</sup>

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<sup>207</sup> 42 U.S.C. § 2014(e)(2).

<sup>208</sup> Regulatory Issue Summary 2000-23.

<sup>209</sup> NRC letter to the Colorado Department of Public Health and Environment (Oct. 19, 2016); (ML16272A302).

<sup>210</sup> 603 U.S. 369, 397 (2024) (quotation omitted).

<sup>211</sup> *Id.* at 400–01, 402.

<sup>212</sup> *Id.* at 402 (internal quotations and citations omitted).

<sup>213</sup> 42 U.S.C. § 2014(e)(2).

<sup>214</sup> *See* 603 U.S. at 400–02.

#### **D. Where the Residuals Go Is Not Addressed.**

The consequence of proposing that a waste stream from uranium mining and production is not “byproduct material” is that Appendix A would not apply to it: no Criterion 5 groundwater standard, no Criterion 6 closure design, no Criterion 9 surety, no Criterion 11 long-term custody, and no transfer of title under AEA Section 83b. Such a definitional change would also remove the material from the 11e.(2) jurisdiction of Agreement States and from the Title II framework under which EPA sets standards. The preamble says the material will be regulated “under the source material framework in 10 CFR part 40.”<sup>215</sup> That framework contains no disposal, closure, or long-term-care requirements for processing residuals—it was never designed to. The Proposed Rule does not say who would regulate the residuals, to what standard, or who would hold them after the operator leaves.

#### **E. Request.**

The States request that the definition be withdrawn. If the Commission believes that a regulatory distinction between abandoned-mine remediation and uranium milling is needed, it should propose one in a separate rulemaking, with a regulatory analysis, an environmental assessment, and a statement of the legal basis on which residuals from the extraction of uranium from ore can be excluded from Section 11e.(2).

### **IX. Pre-License Site Characterization Is Declared “Not Construction.”**

#### **A. The Provision and Its Reversal of the 2021 Text.**

Proposed Criterion 14(a) provides: “Any drilling, well installation, testing, and related site activities required for the purpose of site characterization and suitability demonstration under this rule are not considered construction activities, as defined in 10 CFR 40.4.”<sup>216</sup> The 2021 Proposal provided the opposite: “Pursuant to the definition of construction in 10 CFR 40.4, no wells associated with radiological operations (e.g., production, injection, or monitoring well networks associated with ISR facilities) may be installed in the wellfield prior to the NRC issuing the license.”<sup>217</sup> The preamble does not mention the reversal, let alone provide a sufficient explanation under *Fox*.<sup>218</sup>

#### **B. What the Provision Does.**

Currently, 10 C.F.R. § 40.32(e) prohibits an applicant from commencing construction before the Commission has completed its review under the National Environmental Policy Act, and makes “[c]ommencement of construction prior to this conclusion . . . grounds for denial of a license.”<sup>219</sup> The definition of construction in 10 C.F.R. § 40.4 already excludes “site exploration, including necessary borings to determine foundation conditions or other preconstruction monitoring to establish background information related to the suitability of the site.” The 2021

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<sup>215</sup> 91 Fed. Reg. at 57,732.

<sup>216</sup> Section II.C, *supra*.

<sup>217</sup> 2021 Criterion 14(b).

<sup>218</sup> 556 U.S. at 515.

<sup>219</sup> 10 C.F.R. § 40.32(e).

staff drew the line where the current definition draws it: exploratory borings are not construction, but wells associated with radiological operations, such as production, injection, or monitoring networks, are.<sup>220</sup>

Proposed Criterion paragraph 14(a)(1) would require the characterization package to include “site-specific drilling and testing data, including, but not limited to, cuttings and core logging, downhole geophysical logging, aquifer pumping tests, and one year of quarterly groundwater quality sampling.”<sup>221</sup> A year of quarterly sampling and aquifer pumping tests require installed, completed wells, and the wells so installed become the baseline network and, at most facilities, the point-of-compliance network. The proposed sentence in 14(a)(1) declares that network not to be construction, without regard to its extent, and thereby removes it from 10 C.F.R. § 40.32(e) and from the NEPA sequence that section enforces. If removed from the definition of “construction,” these activities would have no acreage limit, no notice to the Commission or the State would be needed, and there would be no requirement that the activities be described in an application.

### **C. The Baseline Consequence.**

The 2008 review of Texas records observed that exploration drilling has “not been demonstrated not to destabilize uranium orebodies enough to release uranium and daughter products” before baseline sampling.<sup>222</sup> If pre-license drilling elevates constituent concentrations in the production zone, the elevated values become baseline, baseline becomes the restoration target, and the facility is credited with restoring an aquifer to a condition it created. The Proposed Rule contains no requirement of sampling before disturbance.

### **D. Request.**

The States therefore request that the sentence of proposed paragraph 14(a) stating that “[a]ny drilling, well installation, testing, and related site activities required for the purpose of site characterization and suitability demonstration under this rule are not considered construction activities, as defined in 10 CFR 40.4” be deleted and the 2021 text of paragraph 14(b) restored.<sup>223</sup> In the alternative, the construction exclusion should be limited to enumerated activities, capped in areal extent, conditioned on written notice to the Commission and the host State before the activity begins, and conditioned on groundwater sampling at the production zone before any drilling into it, with those results reported as part of baseline.

## **X. The Decommissioning Timeliness Amendments Would Lengthen the Idle Period for Every Materials Licensee Without a Record and Delete the Public Health and Safety Standard From Seven Parts of Title 10.**

The decommissioning timeliness amendments in the Proposed Rule are not confined to uranium recovery. They would amend Parts 30, 40, 50, 52, 53, 70, and 72 of Title 10, and they reach nearly every category of licensee that the Commission and Agreement States regulate. Some

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<sup>220</sup> ML21067A127 at 79.

<sup>221</sup> 91 Fed. Reg. at 57,752.

<sup>222</sup> Darling (2008) at 5.

<sup>223</sup> ML21067A127 at 79–80.

of the States have no uranium recovery industry. They join this comment section as Agreement States that license and inspect the byproduct material licensees to which the Part 30 amendments apply, under regulations that must remain compatible with Part 30, or as the host States of power reactors, research reactors, fuel cycle facilities, and independent spent fuel storage installations whose decommissioning is governed by the provisions of Parts 50, 52, 53, 70, and 72 that the Proposed Rule amends. The States address the Part 40 period first, because the record for it is thinnest, but the objections that follow apply to each Part the rule would amend.

**A. The Allowance for Longer Periods of No Principal Activities Are Not Supported by the Record.**

The current rule requires a Part 40 licensee to notify the Commission, and to begin decommissioning or submit a decommissioning plan, when no principal activities have been conducted under the license for twenty-four months.<sup>224</sup> The 1994 rule that set that period rested on a finding “that, in general, for materials facilities, further health and safety benefits derived from radiological decay are not likely to be gained by delaying decommissioning beyond approximately 3 years,” and on the judgment that two years was “a sufficient period for a licensee to make a business decision regarding the future use of the currently-inactive license.”<sup>225</sup> The Proposed Rule extends the period to forty-eight months for Part 40, 70, and 72 licensees and to thirty-six months for Part 30 licensees.<sup>226</sup>

The Notice offers no new evaluation, much less the “more detailed justification” required when an agency’s “new policy rests upon factual findings that contradict those which underlay its prior policy.”<sup>227</sup> Its examples of licensees burdened by the current rule—“a portable gauge licensee [that] may not have a contract to use its gauges for a period that exceeds 24 months” and a nuclear-medicine licensee that “did not have a qualifying patient” and “was the only facility in a remote location to provide this type of medical care”—are Part 30 licensees.<sup>228</sup> The Proposed Rule’s rationale for the longer period for Part 40 is that “facilities licensed under parts 40, 70, and 72 typically have a lower risk of abandoned material because they have greater financial resources, and are subject to greater regulatory oversight given the nature of the materials, including higher inspection frequency.”<sup>229</sup> That sentence, which groups uranium recovery licensees with fuel fabrication plants and spent-fuel storage installations, does not accurately describe uranium recovery licensees. The domestic uranium recovery industry is small and volatile: in 2025 it employed 711 person-years and produced about 2.1 million pounds of U<sub>3</sub>O<sub>8</sub>, more than triple the prior year’s output, with as many ISR plants on standby as operating.<sup>230</sup> Only five years earlier, the U.S. Department of Energy’s Nuclear Fuel Working Group found domestic uranium mining “facing imminent collapse,” with little reserve to compete and low prospects for new capital

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<sup>224</sup> 10 C.F.R. § 40.42(d)(3).

<sup>225</sup> 91 Fed. Reg. at 57,737 (citing NRC, *Timeliness in Decommissioning of Materials Facilities*, 59 Fed. Reg. 36,026 (Jul. 15, 1994)).

<sup>226</sup> *Id.* at 57,739.

<sup>227</sup> *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. at 515.

<sup>228</sup> *Id.* at 57,739.

<sup>229</sup> *Id.* at 57,740.

<sup>230</sup> U.S. Energy Information Administration, *Domestic Uranium Production Report – Annual* (data for 2025; re-released Aug. 27, 2026), <https://www.eia.gov/uranium/production/annual/>.

investment.<sup>231</sup> The history that produced Title I of UMTRCA and the Commission's own surety requirements in Criterion 9 is a history of inactive uranium mill tailings sites, many of them abandoned, left unreclaimed when operations ended.<sup>232</sup>

The Notice concedes the risk in the same discussion: “[A]n increase in radiological risk, and nonradiological risk at uranium recovery facilities, for the public could occur when nuclear material is abandoned and begins to migrate through the environment, potentially contaminating drinking water resources.”<sup>233</sup> An idle ISR facility is not the equivalent of a warehouse. Rather, it consists of production units in various states of restoration, with lixiviant-bearing fluids in the aquifer, surface impoundments, and a monitoring network whose upkeep is the licensee's necessary expense. The Notice does not consider what happens at such a facility over four years of no principal activities, and it does not consider the position of a State that may take title to the result, particularly should neglect set in.

The Part 30 analysis makes the point against itself. The Notice explains that the Part 30 period is capped at thirty-six months in part because “each record of receipt and transfer of byproduct material must be retained for 3 years following transfer or disposal of the material in accordance with § 30.51, [so] any period beyond 3 years may present risk of institutional knowledge being lost.”<sup>234</sup> The knowledge on which an idle ISR site depends—including well completion records, mechanical-integrity histories, restoration data, and the location and status of every injection and production well—is held by personnel who have no role at a site when operations stop. The Notice relies on the three-year record-retention period in § 30.51, and the resulting risk of lost institutional knowledge, as one reason to set the inactivity period for Part 30 licensees at 36 months, but it does not explain why the same risk is acceptable over the 48 months proposed for uranium recovery licensees, whose receipt records are subject to the same three-year retention period under § 40.61(a)(1).<sup>235</sup>

The Part 30 period affects Agreement States directly. The great majority of the Nation's radioactive materials licenses, roughly 89 percent by the Commission's most recent count, are issued by Agreement States, not by the Commission.<sup>236</sup> The Notice assumes that the Agreement States will amend their regulations to conform, estimating the cost of that work at \$106,300.<sup>237</sup> The evidence of a burden on licensees cited for the thirty-six month period is limited to the two examples quoted above. The Notice does not say how many Part 30 licensees have notified the Commission under paragraph (d) since 1994, how many have requested extensions, how many requests have been denied, or how many have taken “storage only” licenses instead, and it does not report the experience of the Agreement States, which hold that experience for most of the

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<sup>231</sup> U.S. Department of Energy, Nuclear Fuel Working Group, *Restoring America's Competitive Nuclear Energy Advantage* at 9 (Apr. 2020), <https://www.energy.gov/articles/restoring-americas-competitive-nuclear-energy-advantage>.

<sup>232</sup> H.R. Rep. No. 95-1480, pt. 1, at 11 (1978); NRC Staff Testimony of Hubert J. Miller at 4–5 (served Jan. 18, 1980) (ML19322D688).

<sup>233</sup> 91 Fed. Reg. at 57,740.

<sup>234</sup> *Id.* at 57,739.

<sup>235</sup> *Id.* at 57,739–40; 10 C.F.R. §§ 30.51(a)(1), 40.61(a)(1).

<sup>236</sup> NRC, *Results of the Annual Count of Active Radioactive Material Licenses in the National Materials Program*, STC-26-021, encl. (Mar. 27, 2026) (ADAMS Accession No. ML26085A506) (14,916 of 16,740 specific licenses in Agreement State jurisdiction as of Mar. 17, 2026).

<sup>237</sup> 91 Fed. Reg. at 57,728.

licensees in question.<sup>238</sup> It reasons instead that because routine inspection intervals “range from 1- to 5-year periodicity,” a licensee “would reasonably have at least one inspection within the proposed 36-month period,”<sup>239</sup> which is not true of a licensee on a four- or five-year interval. A State that has administered the twenty-four-month period for its own licensees since the 1990s is entitled to a better record than that. And it is entitled to that record before the Commission declares the period an “unnecessary regulatory burden.”<sup>240</sup>

## **B. The Proposed Rule Would Delete the Public Health and Safety Standard.**

Under the current rule, the Commission may grant an extension only “if the Commission determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest.”<sup>241</sup> The Notice states that the Proposed Rule “would remove the current requirement to demonstrate that such requests are not detrimental to public health and safety and in the public interest and replace it with a streamlined process that risk-informs NRC’s review of the extension request by specifically focusing the review on safety-significant elements.”<sup>242</sup> The Proposed Rule would replace the Commission’s health-and-safety finding with a list of what the request must contain: a discussion of “the business need for continued possession or authorization of licensed material or how the request is otherwise in the public interest,” “the health and safety plan that will be in effect during the extension period,” and “the current decommissioning cost estimate and the potential for increased decommissioning costs if an extension of the time period is or is not approved.”<sup>243</sup> Proposed paragraph (f) then provides that the Commission “may grant” the request.<sup>244</sup> There is no express finding that the Commission must make, no stated standard guiding the Commission’s decision on such a request, and nothing against which a reviewing court could measure a grant. A licensee that describes a business need and attaches a health and safety plan would have satisfied the rule.

The Proposed Rule would make the same deletion on the reactor side. The current rule permits completion of power-reactor decommissioning beyond sixty years “only when necessary to protect public health and safety.”<sup>245</sup> The Proposed Rule strikes that phrase from §§ 50.82(a)(3), 52.110(c), and 53.1070(c) and routes such requests through the general exemption provisions, with a new special circumstance for cases in which site-specific factors affect the licensee’s capability to complete decommissioning within the required timeframe.<sup>246</sup> The Notice’s stated reason is that the existing criteria “are much more restrictive than the criteria for review of specific exemptions.”<sup>247</sup> Across seven Parts of Title 10, the Proposed Rule removes the public-health

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<sup>238</sup> *Id.*

<sup>239</sup> *Id.* at 57,739.

<sup>240</sup> *Id.* at 57,739.

<sup>241</sup> 10 C.F.R. § 40.42(f).

<sup>242</sup> 91 Fed. Reg. at 57,740.

<sup>243</sup> *Id.*

<sup>244</sup> *Id.* at 57,750.

<sup>245</sup> 10 C.F.R. § 50.82(a)(3); 91 Fed. Reg. at 57,737–38.

<sup>246</sup> 91 Fed. Reg. at 57,756 (proposed § 50.12(a)(2)(vi)).

<sup>247</sup> *Id.* at 57,738.

finding from every decommissioning-timeliness provision that contains one, and replaces it with an inadequately protective process.

For the States that host power reactors, that change holds elevated importance. The sixty-year limit was set in 1988 on the Commission's judgment that fifty years of radioactive decay and ten years of dismantlement were as soon as practical for a reactor, and that completion beyond sixty years would be considered "only when necessary to protect public health and safety."<sup>248</sup> The Notice repeats that the Commission "continues to support the position that the 60-year period after permanent cessation of operations is sufficient for most facilities to complete decommissioning," that a site-specific condition warranting more "should not be common," and that even as dose rates fall, "long-lived activation products will remain in significant quantities that require continued monitoring and controls."<sup>249</sup> It then replaces a standard under which delay is permitted only when delay itself protects the public with one under which delay is permitted whenever it "will not adversely affect public health and safety for the duration of the extension period."<sup>250</sup> Those are different tests. Under the first, the licensee must show that the public is better protected if the site waits; under the second, the licensee need show only that the public is no worse off, which a licensee in safe storage ("SAFSTOR") or deferred decontamination status can presumably always show.

An extended decommissioning timeline causes numerous adverse effects for a host State: A reactor site is withheld from productive reuse; state-funded environmental monitoring must continue; a decommissioning trust must be maintained and reported on for the added years; there is an increased risk that the licensee could become bankrupt; and State and local arrangements, including land-use planning, that were built in reliance on a sixty-year endpoint must be reevaluated. Moreover, longer decommissioning would create additional environmental burdens including additional seawater discharges at coastal reactors using once-through cooling. The potential for a catastrophic release would also continue for a longer period, exacerbated by escalating environmental conditions, such as sea level rise and the increased severity and frequency of extreme weather events. The Notice does not consider these consequences or account for States' reliance interests on these points.<sup>251</sup>

The Notice identifies no reactor that has been unable to complete decommissioning within sixty years for a reason the current standard cannot accommodate. The one site-specific factor it discusses, an operating unit at the same site, is already addressed by the current rule.<sup>252</sup> The agency's complaint justifying the change is that "the current process to request an exemption is nebulous, burdensome, and overly conservative without providing commensurate safety benefits for the public,"<sup>253</sup> but elsewhere the Notice asserts that the current regulation presents difficulties

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<sup>248</sup> *Id.* at 57,738 (discussing 53 Fed. Reg. 24,018 (June 27, 1988)).

<sup>249</sup> *Id.* at 57,741.

<sup>250</sup> *Id.* at 57,742, 57,756. Compare proposed §§ 50.12(a)(2)(vi) ("will not adversely affect site safety"), with proposed § 53.080(b)(6) ("will not adversely affect public health and safety").

<sup>251</sup> See *Motor Vehicle Manufacturers Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (holding arbitrary agency action that "entirely failed to consider an important aspect of the problem"); *Fox*, 556 U.S. at 515 (requiring agencies to provide a "detailed justification" of a policy change "when its prior policy has engendered serious reliance interests that must be taken into account").

<sup>252</sup> 10 CFR 50.82(a)(3) ("presence of other nuclear facilities at the site"); 91 Fed. Reg. at 57,738, 57,742.

<sup>253</sup> 91 Fed. Reg. at 57,741.

because “there was little precedent or guidance regarding how to apply the considerations currently included in” the rule, a gap the staff has since filled in SECY-24-0073 without any change to the standard.<sup>254</sup> Regulated parties thus have far more guidance under the existing standard than under its proposed replacement. Instead of replacing the so-called “nebulous” standard with another, the States ask that the standard be retained and that the Commission issue for notice and comment the guidance it believes is lacking.

### **C. Potential for Seven Years or More Before Decommissioning Must Begin.**

The Proposed Rule retains the existing regulatory provision that “[t]he schedule for decommissioning set forth in paragraph (d) of this section may not commence until the Commission has made a determination on the request.”<sup>255</sup> It sets no deadline for that determination and also attaches the tolling provision to a longer front end: forty-eight months of no principal activities; sixty days to notify; forty-five days after notification to file the request;<sup>256</sup> the pendency of the request; and then an extension of up to thirty-six months, since the request must include “a timeframe for which the licensee will resume principal activities, which will not exceed thirty-six months from the date of notification.”<sup>257</sup> However, nothing in proposed § 40.42(f) bars a second request when principal activities do not resume within the timeframe stated in the first, requiring only that the licensee provide “a commitment that the licensee will provide notification to the NRC if principal activities do not resume within the specified timeframe.”<sup>258</sup> On the face of the rule, an ISR facility with unrestored production units may remain idle for seven years or more before any obligation to decommission attaches, and longer if requests are serial and the Commission is slow. As explained, a longer decommissioning timeline imposes numerous burdens on States, including the need for continued environmental monitoring and the ongoing risk of adverse incidents, issues the proposal does not consider at all.<sup>259</sup>

The arithmetic is not limited to uranium recovery. Paragraph (f) is restructured in parallel form in §§ 30.36, 40.42, 70.38, and 72.54,<sup>260</sup> so a Part 30 licensee may be idle for thirty-six months, notify, request an extension of up to thirty-six months from notification, and request another. A fuel cycle facility or spent fuel storage installation runs on the same forty-eight month clock as a uranium mill. For a byproduct material licensee in an Agreement State, the clock is the State’s to set so long as the compatibility designation leaves the State free to set it. Extended decommissioning timelines at any of these types of facilities create State burdens unaddressed by the Proposed Rule.

### **D. The Alternate Schedule in Paragraph (g)(2) Is Removed.**

Paragraph (g)(2) of § 40.42 currently permits the Commission to approve an alternative schedule for the initial submittal of a decommissioning plan. The Proposed Rule eliminates that paragraph and effectively folds the process for the initial submittal of a decommissioning plan into

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<sup>254</sup> *Id.* at 57,738.

<sup>255</sup> 10 C.F.R. § 40.42(f).

<sup>256</sup> 91 Fed. Reg. at 57,740–41.

<sup>257</sup> *Id.* at 57,740.

<sup>258</sup> *Id.*

<sup>259</sup> *See State Farm*, 463 U.S. at 43; *Fox*, 556 U.S. at 515.

<sup>260</sup> 91 Fed. Reg. at 57,740.

paragraph (f). The same consolidation is made in §§ 30.36, 70.38, and 72.54.<sup>261</sup> This elimination would remove the Commission’s duty to determine that the requested decommissioning delay is in the interest of public health and safety in the name of administrative efficiency.<sup>262</sup> The Commission’s second specific request for comment on the decommissioning provisions asks whether the Commission should reconsider the elimination of the paragraph (g)(2) requirements.<sup>263</sup> The States believe it should reconsider eliminating this requirement. Current paragraph (g)(2) governs the timing of submittal of a decommissioning plan for a licensee that has already acknowledged the obligation to decommission; proposed paragraph (f) governs whether a decommissioning plan is required at all. Merging them treats a request to reschedule a plan and a request to defer decommissioning as the same thing, and, as discussed, subjects both to a provision with no express standard for approval and without (g)(2)’s public health and safety test. The new proposal would allow licensees to defer submittal of a decommissioning plan potentially for years. A request to reschedule the submission of a decommissioning plan should continue to be treated separately from whether a decommissioning plan should be initiated.

## **XI. The Use of a Categorical Exclusion Is Unsupported and Is Contradicted by the Commission’s Own 2021 Environmental Assessment.**

### **A. The Categorical Exclusion Determination.**

The Notice finds the Proposed Rule as a whole to be an action “administrative, procedural, or solely financial in nature” under 10 C.F.R. § 51.22(a)(1), on two premises: first, that the ISR provisions, although they “establish regulations for the technical criteria necessary for groundwater protection,” codify existing practice, so that “[t]he NRC is not proposing to change any technical criteria, and accordingly, there would be no change to any environmental impact,” and second, that the decommissioning timeliness amendments “would modify the procedures for filing and reviewing requests” (Parts 50, 52, and 53) and “would amend reporting requirements” (Parts 30, 40, 70, and 72).<sup>264</sup> Neither rationale is supported by the record, which demonstrates that the Proposed Rule would create reasonably foreseeable environmental impacts that the NRC must analyze under NEPA, as detailed herein.

### **B. The Proposed Rule Changes Technical Criteria that Would Create Foreseeable Environmental Impacts.**

Far from simply changing requirements that are “administrative, procedural, or solely financial in nature,”<sup>265</sup> each of the following proposed amendments change the current text of Appendix A or Part 40, or the license conditions the Proposed Rule claims to codify:

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<sup>261</sup> *Id.* at 57,742.

<sup>262</sup> *See id.* (“This approach consolidates multiple similar exemption processes into one risk-informed process focused on safety-significant elements, reducing administrative burden for both licensees and NRC.”).

<sup>263</sup> *Id.* (Notice Section VIII, question 2).

<sup>264</sup> 91 Fed. Reg. at 57,744 (Notice Section XIV).

<sup>265</sup> 91 Fed. Reg. at 57,744.

1. Post-restoration monitoring is cut from the three years the 2021 Proposal adopted under AEA section 84a.(3) to one, and no compliance period is set for ISR facilities. *See* § III, *supra*.
2. The excursion threshold, the corrective-action clock, and the scope of corrective action are relaxed. *See* §§ II.C and VI.E, *supra*.
3. The point-of-compliance well density, site-characterization elements, and restoration-achievability demonstration—all described as current practice in 2021—are deleted. *See* §§ II.C, V.B, and VI.B, *supra*.
4. Byproduct material is redefined to include liquid wastes. *See* § VII.B, *supra*.
5. Abandoned-mine reprocessing residuals are declared not to be byproduct material. *See* § VIII, *supra*.
6. Pre-license drilling and well installation are declared not to be construction. *See* § IX, *supra*.
7. The idle period before decommissioning must begin is doubled, and the public-health finding for extensions deleted, for every materials licensee under Parts 30, 40, 50, 52, 53, 70, and 72. *See* § X, *supra*.

Moreover, the Commission’s own regulatory analysis computes costs and savings from these changes.<sup>266</sup> A rule that made no changes to existing practices would generate neither costs nor savings.

### **C. The NRC Previously Determined That These Provisions Result in Environmental Impacts Requiring Analysis in an EA.**

As Section II of this comment shows, the NRC described its 2021 Proposal as a codification of existing practices,<sup>267</sup> yet it prepared a draft environmental assessment, applying categorical exclusions only to the new definitions and reporting requirements, under 10 C.F.R. § 51.22(c)(2) and (c)(3)(iii), and finding that the amendments to Criterion 5 and the addition of Criterion 14 “require the NRC to prepare this EA.”<sup>268</sup> In 2021, provisions described as codifying existing practice required an environmental assessment; in 2026, the same description is the reason given for preparing none.

The Proposed Rule has not moved closer to existing practice since. It reverses the one provision the 2021 staff identified as a substantive change—the three-year monitoring period required by AEA section 84a.(3)—and relaxes the 2021 text in at least twelve respects. *See* §§ II.C and III, *supra*. A rule cannot both codify existing practice and relax it: if it codifies, the 2021

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<sup>266</sup> NRC, *Regulatory Analysis for the Proposed Rule: In Situ Recovery Monitoring and Decommissioning Timeliness* (ML26243A343); *see* § IV.E, *supra*.

<sup>267</sup> SECY-21-0067 at 2, 6 (ML21067A117); ML21067A127 at 34; ML21067A128 at 2, 6 (“In this proposed rule, the NRC is codifying its licensing practice over the last 40 years for ISR facilities and adding additional post-restoration groundwater monitoring requirements.”).

<sup>268</sup> ML21067A128 at 3–4.

determination stands unanswered; if it relaxes, the Notice's premise is false. The memorandum withdrawing the 2021 Proposal made no NEPA finding,<sup>269</sup> and the Notice, which cites the 2021 package only for its history and its description of current practice, neither mentions the 2021 draft environmental assessment nor explains the change.<sup>270</sup> That is an unexplained departure from a prior position, and arbitrary and capricious for that reason alone.<sup>271</sup>

**D. Section 51.22(a)(1) Does Not Reach This Proposed Rule, and the Impacts Would Be Significant.**

10 C.F.R. § 51.22(a)(1)'s categorical exclusion determination is reserved for actions that are administrative, procedural, or solely financial in nature.<sup>272</sup> The Commission's regulations require an environmental impact statement for the issuance of a single uranium milling license;<sup>273</sup> the rule that sets the groundwater-protection framework that every such environmental impact statement will apply cannot be exempt from environmental review altogether. The Ninth Circuit's approval of a categorical exclusion for an exemption that changed a reactor's licensing schedule but not the status quo<sup>274</sup> does not reach a rule whose object is to change the status quo, and the D.C. Circuit has held that the Commission may not leave a NEPA-deficient ISR license in effect on the theory that no one has shown irreparable harm.<sup>275</sup> Nor are the impacts speculative. Sections III through V of this comment detail the demonstrable and reasonably foreseeable environmental impacts that result from ISR mining: contamination levels in restored wellfields rebound, no ISR operation in the United States has returned an aquifer to baseline, and alternate concentration limits are the expected outcome—outcomes a one-year monitoring period will leave undetected and uncorrected. Finally, the Commission may decline to apply an exclusion in special circumstances upon the request of any interested person:<sup>276</sup> the States so request.

The record included with these comments demonstrates that the environmental impacts of the Proposed Rule are not speculative. Limiting post-restoration monitoring to a default one-year period declares restoration complete before the above-described rebound appears. For instance, at Crow Butte, radium-226 rose from 216 to 385 pCi/L within the six-month stability period and the staff found “a reasonable likelihood that license limits would be exceeded in the near future”; at Highland, stabilization took five years; and after more than fifteen pore volumes of groundwater sweeps, reverse osmosis and reductive recirculation, mean uranium at Highland remained at 3,530 µg/L versus a baseline of 50 and an MCL of 30.<sup>277</sup> Further, the relaxed excursion threshold, a corrective-action time period staff may extend, and termination of injection only in “portions of the wellfield potentially contributing to the continuing excursion” mean continued injection of

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<sup>269</sup> SRM-SECY-21-0067 (ML25254A183); *see* Section II.B, *supra*.

<sup>270</sup> 91 Fed. Reg. at 57,731–32, 57,749.

<sup>271</sup> *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009); *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221–22 (2016); Section II.E, *supra*.

<sup>272</sup> 10 CFR 51.22(a)(1), as revised, 91 Fed. Reg. 15,519 (Mar. 30, 2026).

<sup>273</sup> 10 CFR 51.20(b)(8).

<sup>274</sup> *San Luis Obispo Mothers for Peace v. NRC*, 100 F.4th 1039 (9th Cir. 2024).

<sup>275</sup> *Oglala Sioux Tribe v. NRC*, 896 F.3d 520 (D.C. Cir. 2018).

<sup>276</sup> 10 C.F.R. § 51.22 (introductory text) (formerly § 51.22(b)).

<sup>277</sup> *See* Sections III.C–III.E, *supra*; Saunders, et al. (2016) at 75-76 & tbl. 2.

oxidizing lixiviant into a wellfield that is already leaking, despite the evidence of more than sixty excursions at three facilities, some lasting years.<sup>278</sup>

The Proposed Rule's deletion of the minimum well-density requirement, the site-characterization elements, and the restoration-achievability demonstration, together with an alternate concentration limit available whenever a licensee "cannot practically achieve" the approved limit, results in the exception becoming the expected outcome: uranium, selenium, arsenic, and radium left in the aquifer at levels above baseline in an aquifer that had been a source of drinking water before it was exempted. Exacerbating these impacts is the Proposed Rule's limitation of the licensee's restoration obligation to a boundary set 100 to 180 feet outside the monitoring ring and the State having to take custody of the contaminated aquifer that remains.<sup>279</sup> In addition, the Proposed Rule's declaration of pre-licensing drilling and well-installation as "not construction" would authorize boreholes, not completely grouted or cased, that "may allow vertical flow along a borehole into overlying or underlying permeable units [i.e., aquifers]," before any baseline is established and before any Commission environmental review is conducted.<sup>280</sup> The removal of abandoned-mine reprocessing wastes from the definition of byproduct materials removes them entirely from the disposal, groundwater, and long-term custody requirements of Appendix A, without any analysis or explanation of where those wastes will go or how they will be otherwise contained or controlled.<sup>281</sup> Also significant, for every materials license, a site may not sit idle for seven years or more before decommissioning even begins, despite the Notice's acknowledgment that "an increase in radiological risk, and nonradiological risk at uranium recovery facilities, for the public could occur when nuclear material is abandoned and begins to migrate through the environment, potentially contaminating drinking water sources," while reactor sites may remain in storage beyond sixty years even though "long-lived activation products will remain in significant quantities that require continued monitoring and controls."<sup>282</sup>

These are not impacts that a later licensing action will account for. The Notice states that "[a]ny licensing action that specifically authorizes activities pursuant to these amendments would involve an environmental analysis of the impacts of such activities at the time of the licensing action."<sup>283</sup> However, those site-specific analyses will derive their content and direction from the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities, NUREG-1910, which found groundwater impacts SMALL based on "site specific conditions that would need to be met," but will take the Proposed Rule's restoration standards, monitoring periods, and corrective-action framework as a given.<sup>284</sup> Because the Proposed Rule changes each of those conditions for every future ISR license, it changes the premise for every license at once. Apart from all the site-specific impacts detailed herein, this results in a cumulative impact that a categorical exclusion presupposes does not exist and is the kind of programmatic change for which an environmental impact statement, or an environmental assessment, at a minimum, is required.

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<sup>278</sup> See Sections IV.B. and VI.E, *supra*.

<sup>279</sup> See Sections IV.C, V.C, and VI, *supra*.

<sup>280</sup> See Section IX, *supra*; Saunders (2016) at 79.

<sup>281</sup> See Section VIII.D, *supra*.

<sup>282</sup> 91 Fed. Reg. at 57,740, 57, 741; Section X, *supra*.

<sup>283</sup> 91 Fed. Reg. at 57,744.

<sup>284</sup> ML21067A128 at 1 (describing NUREG-1910); NUREG-1910 (May 2009).

### **E. Request.**

The States request that the Commission withdraw the categorical exclusion determination and prepare an environmental impact statement or, at a minimum, an environmental assessment published for comment, addressing each change identified in Section XI.B, the compatibility reclassification (§ VII.A, *supra*), and the restoration record (§§ III through V, *supra*). In the alternative, the Commission should explain on the record why provisions its staff found to require an environmental assessment in 2021 require none in 2026. The Commission should also hold the public meeting that the 2021 draft environmental assessment said the NRC would hold,<sup>285</sup> that the Notice says it may hold,<sup>286</sup> and that New Mexico requested on September 17, 2026. None was held during the comment period. § I.D, *supra*.

## **XII. CONCLUSION**

The States stand ready to work constructively with the Commission to develop groundwater protection criteria that are consistent with State water quality standards, the Safe Drinking Water Act, and the Resource Conservation and Recovery Act. The States urge the Commission to withdraw the Proposed Rule and repropose groundwater protection standards for ISR uranium production in line with the comments detailed above. The States also request that the Commission withdraw the decommissioning amendments in their entirety, and retain the current codified requirements.

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<sup>285</sup> ML21067A128 at 6; SECY-21-0067 at 8, 10.

<sup>286</sup> 91 Fed. Reg. at 57,729.

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