



Comments on Revision to 40 CFR Part 192- Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings and Uranium In Situ Leaching Processing Facilities – Final Rule

Energy Fuels Resources (USA) Inc. meeting with
Office of Information and Regulatory Affairs,
Office of Management and Budget

November 17, 2016

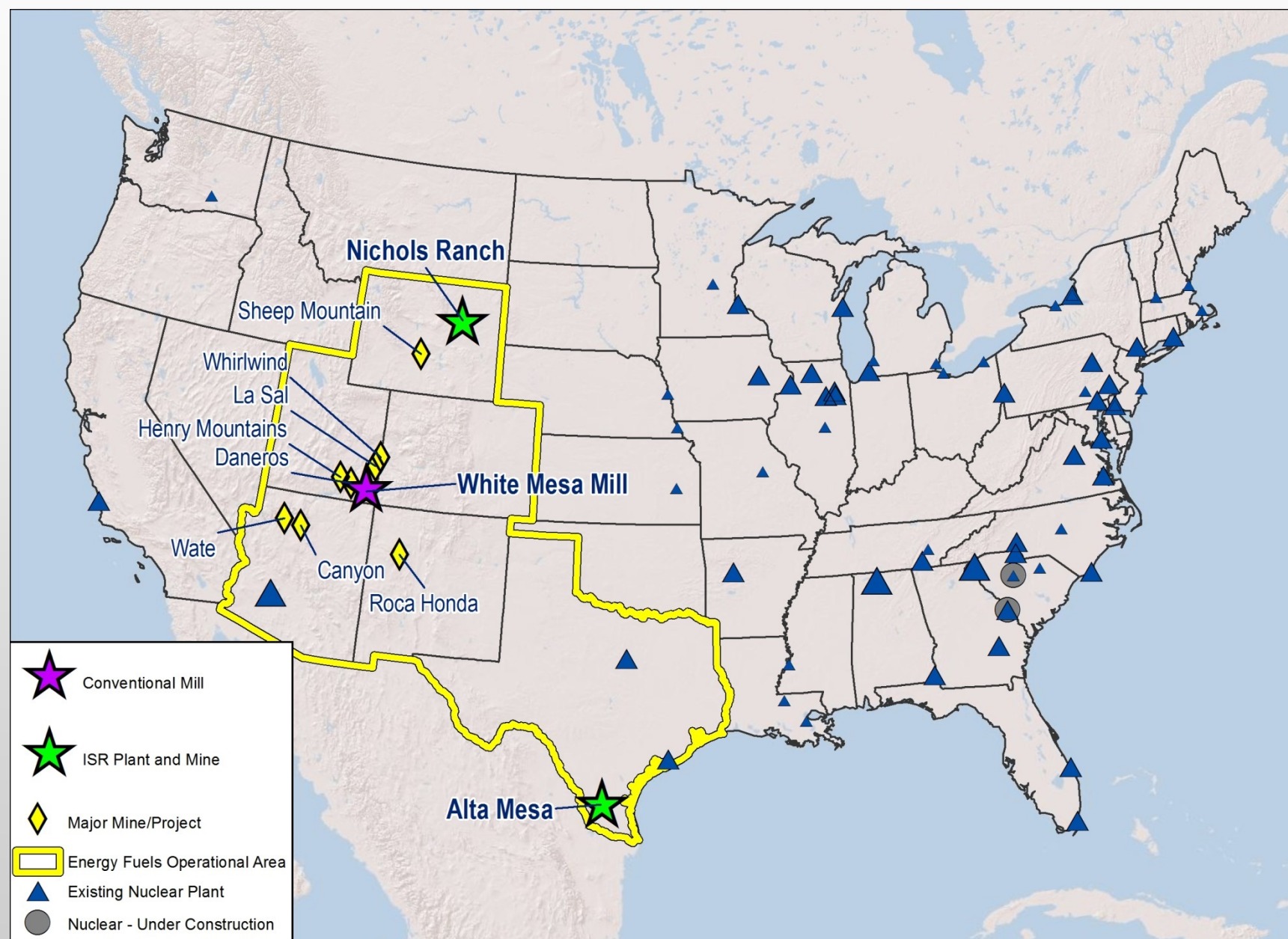


Energy Fuels Resources (USA) Inc.

- Energy Fuels is a leading US based producer of uranium. Fuel for carbon free and emission free nuclear energy.
- We utilize both conventional and in-situ recovery methods for producing uranium into the domestic nuclear fuel cycle.
- We are currently operate and maintain projects in the western states of Arizona, Colorado, New Mexico, Texas, Utah and Wyoming.
- Energy Fuels owns two licensed in-situ uranium recovery facilities.
- We have significant experience with the permitting/licensing of in-situ uranium recovery facilities as well as operating, groundwater restoration, and decommissioning these facilities.
- These activities have occurred with several Federal and State regulatory agencies, including EPA and NRC.
- We believe that we can provide useful information to the Office of Information and Regulatory Affairs (OIRA) as it reviews the proposed rulemaking.

Energy Fuels and its customer base

Operations and Projects across the Western U.S.



NYSE MKT: [UUUU](#) | TSX: [EFR](#)
www.energyfuels.com

Nichols Ranch ISR Project

Powder River Basin - Wyoming

- ▲ Fully Licensed & Producing
 - ▲ NRC Source Material License SUA-1597.
 - ▲ Wyoming Permit to Mine No. 778 (Class III) (Wyoming has UIC primacy under SDWA)
 - ▲ EPA Aquifer Exemption
 - ▲ 2 Class I disposal wells
- ▲ Described in NUREG-1910 Supplement 1, "Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities".
- ▲ Licensed Capacity = 2 million lbs. of U_3O_8 per year
- ▲ Commenced Production – April 2014
- ▲ Located on private fee surface, private fee minerals and Federal unpatented lode claims.
- ▲ Future production potential from additional wellfields & satellite operations (Jane Dough & Hank Projects)



Alta Mesa ISR Project

Gulf Coast Plain – South Texas



- ▲ Fully licensed and on production standby
 - ▲ TCEQ Radioactive Materials License R05360 (Texas is an Atomic Energy Act Agreement State)
 - ▲ TCEQ Area Permit UR03060 (Class III) (Texas has UIC primacy under SDWA)
 - ▲ 7 Production Area Authorizations (Class III)
 - ▲ EPA Aquifer Exemption
 - ▲ 2 Class I disposal wells
- ▲ Design operating capacity of 1.5 million lbs.
- ▲ Commenced production October 2005, placed on standby November 2013.
- ▲ First production area fully restored and in stability 2014. Awaiting approval of restoration and stability from TCEQ.
- ▲ Located on fee surface and minerals. Over 200,000 acres of land.



EPA Fails to Identify the Problem It Intends to Address – Executive Order 12866 Sect. 1(b)(1)



- As stated in our comments to EPA on the proposed rulemaking, both in writing and verbally at the hearings in Casper, Wyoming and Corpus Christi, Texas, EPA has failed to demonstrate a compelling reason for this rulemaking.
- In-situ uranium recovery has been a commercial activity for over 40 years, and the public record on environmental impacts is well documented and accessible to the public. From the basis of the proposed rule, EPA failed to consider that record, or, one could easily conclude that, they would have also concluded the rule was unjustified.
- NRC staff, in a 2009 Commission briefing, stated that their had been no documented evidence of any impact on a USDW. An EPA representative in a February 2016 SBA Roundtable on the proposed rule affirmed the NRC conclusion.
- EPA cannot support its contention that there is a high risk of impacts to USDW's by using existing, scientific data, and instead, relies on supposition and inferred impacts.
- EPA implies that there is a regulatory gap within 40 CFR § 192, as shown later, there is no gap.

The Rulemaking is duplicative of existing regulations and fails to comply with Executive Order 12866



- The rulemaking attempts to add to rules for activities that are currently regulated under Federal and State rules and statutes.
- EPA's rulemaking implies that there is a significant regulatory gap for in-situ uranium recovery operations. There is not.
 - NRC regulates these facilities under 10 CFR § 20 and 10 CFR § 40.
 - Where NRC does not have clear rule language, the Commission has provided clear direction.
 - SECY-99-013 "Recommendations on ways to Improve the Efficiency of NRC Regulation at In-Situ Uranium Recovery Facilities".
 - RIS 2009-05 "Uranium Recovery Policy Regarding: (1) The Process for Scheduling Reviews of Uranium Recovery Facilities and (2) The Restoration of Groundwater at Licensed Uranium In Situ Recovery Facilities"
 - RIS 2009-14 "Licensing Approach for Uranium In Situ Recovery Facility Applications".
- These Commission policies fill the "regulatory gap" used by EPA to justify the rulemaking.



Duplicative Rulemaking (Cont'd)

- The rulemaking also imposes duplication over existing EPA rules.
 - 40 CFR § 144 and § 146 provide pre-operational and operational monitoring requirements for Class III injection wells.
 - The rulemaking provides no additional protection for human health or the environment, and it only imposes a significantly more burdensome and costly monitoring requirements.
 - NRC NUREG-CR-6733 “A Baseline Risk-Informed Performance-Based Approach for In Situ Leach Uranium Extraction Licensees”, concludes
 - “In summary, EPA regulations in 40 CFR Parts 144-146 that comprise the UIC program provide a sound risk informed, but not overly prescriptive framework for groundwater protection at uranium ISL facilities.”
- State UIC programs in Wyoming, Texas and Nebraska, do require groundwater restoration using their delegated authority under the SDWA, and EPA’s rulemaking ignores those regulatory programs.

EPA's Post Operational Monitoring Requirements are inappropriately applied and is Arbitrary in Application.



- EPA references 40 CFR § 117(a)(1) as the basis for the proposed 30 year long term monitoring period, but applying this rule to depleted and restored in-situ uranium recovery wellfields is inappropriate.
- 40 CFR § 110 provides applicability of the post closure monitoring requirements to solid hazardous waste management units. These are engineered waste units that hold a defined source term of hazardous waste in perpetuity. At restored in-situ uranium recovery wellfields, the source term is removed.
- 40 CFR § 192.31(b) states: “..Ore bodies depleted by uranium solution extraction operations and which remain underground do not constitute “byproduct material” for the purpose of this subpart.” This excludes that portion from the solid waste management requirements under 40 CFR § 192 and § 264.
- EPA attempts to stretch the applicability of 40 CFR § 264.117(a)(1) to in-situ uranium recovery wellfields without a solid scientific or regulatory basis. That is inappropriate.
- EPA, in the proposed rule, presented an arbitrary long term surveillance monitoring period. However, based on experience and a wealth of scientific data, each in-situ uranium facility is unique and driven by site specific conditions. Any arbitrary monitoring period, whether 30, 20, or 12 years fails to consider the scientific data.

EPA's Post Operational Monitoring Requirements are inappropriately applied and is Arbitrary in Application. (cont'd)



- EPA attempts to impose a “one size fits all” approach to in-situ uranium recovery wellfield stability and long-term monitoring, and that is inappropriate since they are not engineered hazardous waste management units.
- Each in-situ uranium recovery wellfield is built on a naturally occurring uranium ore body.
- Each in-situ uranium recovery project is unique due to site specific conditions including geochemistry, hydrology, geology, and other factors. Each operation recovers uranium in a unique manner, and restores effected groundwater likewise.
- NUREG-1569 identifies these site specific conditions in its stability monitoring acceptance criteria such as,
 - Applicants should specify time, number of wells, chemical indicators, and frequency of sampling.
 - Requirements are based on site specific post extraction water quality and geohydraulic and geochemical conditions.
 - Wellfields may be decommissioned when all constituent concentrations meet approved restoration standards and demonstrate no post-restoration degradation in groundwater quality occurs outside the aquifer exemption boundary.
- NRC and Agreement States are already enforcing these requirements under its existing authority under UMTRCA and AEA.

EPA Incorrectly Uses Excursions as a Basis for Risk to USDW's



- In the supporting basis to the proposed rule, EPA attempts to use indications of excursions of recovery solutions as a validation of risk to USDW's, and in particular for justifying the long term surveillance monitoring period.
- Monitoring of excursions is required under 40 CFR § 146 and by NRC license conditions.
- NUREG CR-6733 states that excursions “may be problematic, however, because the indicator parameters and UCL's allow detection early enough that corrective actions can be taken before water quality outside the exempted aquifer boundary is significantly degraded.
- NRC describes an excursion in NUREG 1569 as “..early warning that leaching solutions are moving away from the well fields and that groundwater outside the monitor well ring may be threatened.”
 - Further, NRC requires three indicator parameters that are strong indicators of the in-situ leach process. Such as chloride, conductivity and alkalinity, none of which are considered hazardous, but mobile in the normal operating chemical conditions.
 - EPA focuses on uranium as the principle hazard of excursions, but in NUREG-1569, NRC states, “uranium is not considered a good excursion indicator, because, although it is mobilized by in-situ leaching, it may be retarded by reducing conditions in the aquifer.
 - EPA failed to considered work being performed by Los Alamos National Labs on post restoration uranium and hazardous constituent mobility, which confirm NRC's statement that there is significant attenuation of uranium and hazardous constituent mobility.

EPA Underestimated the Cost of Compliance with Proposed Rule



- Energy Fuels operates and maintains two in-situ uranium recovery facilities in two separate regulatory jurisdictions.
- This provides good knowledge of the cost of compliance, including the potential future costs of holding the facilities during the long term surveillance monitoring period.
 - Cost of bonding
 - Land rental, minerals rights, claims maintenance fees, damages, and land withdrawal payments.
 - Cost of maintaining insurance
 - Labor
 - Utilities, site security, maintenance, and upkeep.
 - Regulatory costs, including outside lab costs, licensing fees, and other costs.
- These values were grossly underestimated in the economic analysis performed by EPA.
- EPA did not consider the cost and availability of surety for additional monitoring costs. NRC and States will require full bonding of the cost for the extended stability and surveillance period upon promulgation of conforming rules.
- None of the currently licensed and operating facilities can comply with the proposed rule as written, and the cost of compliance will make these operations uneconomical at any cost.
- Any financial opportunity for current and planned operations is lost with this rulemaking.

EPA's Proposed Rule Reaches Beyond Generally Applicable Standards and Existing Part 192



- In § 192, Subpart D provides the generally applicable standards of operating uranium mills.
- In comparing Subpart D to the proposed Subpart F, one can observe a change in the structure of the rule language.
 - Subpart D is general in structure and provides a connection between the § 264 and NRC's specific rules in 10 CFR § 40.
 - The proposed Subpart F is not general in nature, and inserts specific rules for monitoring, modeling, sampling, timelines, and decommissioning costs that under its existing rules, that NRC incorporates on a site specific basis in its licensing process.
 - Under the proposed rule, EPA sets out prescriptive requirements for NRC to enforce and implement, and that is counter to UMTRCA.
- EPA creates a two tiered process for determining Alternate Concentration Limits. There is no regulatory basis for this new requirement.
 - Existing rules in 40 CFR § 264 and § 192 and 10 CFR § 40 provide clear direction on Alternate Concentration Limits.
 - NRC's current procedures for applying Alternate Concentration Limits are well established.
 - The EPA's proposed rule is confusing and duplicative.

Executive Order 12866 mandates EPA Evaluates Alternatives



- At a minimum, EPA must analyze the following alternatives:
 - The Functional Equivalent Alternative. The current regulatory structure for in-situ uranium operations has been established and matured over more than 40 years of experience. Current Federal and State regulatory programs are the functional equivalent of § 192 rule revision, and should forgo the need for the rulemaking.
 - Gap Analysis – As EPA has failed to provide a compelling argument that there is a problem that this rulemaking will correct, it has also failed to address thoroughly where a gap in the existing regulatory program exists. From the written and verbal comments from the States where in-situ uranium recovery operations are either proposed or operating, EPA never reached out to them to identify any gaps. EPA should be conducting a gap analysis of existing Federal and State programs. If gaps are identified, EPA should allow the existing Federal and State regulators three years to update their programs and fill any identified gaps. This approach is consistent with E.O. 12866 which requires EPA to identify and assess such alternatives to direct regulation.
 - Alternative Rulemaking – EPA, in its proposed § 192 rule, has created burdensome and complex requirements, which vary significantly from the language that currently exists in § 192. EPA has not explained why it did not consider simple changes to Subpart D of the Part.
 - In August 2016, the domestic uranium industry, represented by NMA and UPA, conducted a review of the whole Part to determine if there was alternative language that could be applied to the existing rule.
 - On September 2016, the industry provided EPA with alternative language that makes 5 changes to Subpart D, and accomplishes applicability of the Part to in-situ uranium recovery facilities and EPA's stated policy objectives.

EPA's Revisions to 40 CFR § 192 Fail to Meet the Directives in Executive Order 12866



- EPA failed to sufficiently review the publicly available scientific, technical, and economic data in order to clearly identify the problem it is intending to address.
- EPA failed to identify where existing regulations and regulatory programs do not already achieve protective standards and meet policy objectives.
- EPA failed to identify alternatives to this rulemaking.
- EPA failed to accurately and fully assess the cost of this rulemaking, nor provide a tangible benefit today that this rulemaking would create.
- EPA has failed to appropriately seek views of State officials for the impacts of this rulemaking on their existing statutes and rules.
- EPA has put forward a rulemaking that is duplicative of existing Federal and State rules and policies.
- EPA has put forward a rulemaking that is complex, uncertain, difficult to understand. Current licensees will fail the requirements in the rule, setting up a high probability of litigation.

**THIS RULE SHOULD NOT BE FINALIZED UNTIL THE FLAWS ARE ADDRESSED
BY EPA WITH THE INVOLVEMENT OF ALL STAKEHOLDERS**