

Petition for Leave to Intervene and Request for Hearing

Part 1: Statement of Standing

Petitioner: Michael McVicker

Location: Paducah, McCracken County, KY

Under 10 CFR 2.309(d), a petitioner must definitively demonstrate that their interest may be affected by the proceeding. My standing to request a hearing is established through the "proximity presumption" because I reside, work, and frequently travel within the specific radius where the offsite consequences of a radiological or chemical release could reasonably cause an injury in fact. As a small business owner and resident of McCracken County, the economic reputation and environmental integrity of the region directly impact my livelihood and property values. Furthermore, as a father raising two young children in this immediate area, I have a vested, urgent interest in ensuring that the introduction of new nuclear infrastructure does not compromise the long-term health, groundwater safety, and emergency response capabilities of our community. Also I have been speaking to citizens that live in West Paducah age 35 and older. I am filing this in their behalf also as the application process is difficult for many folks with less skill with technology.

Part 2: Contention 1 – Technical Contention – Novel Risks and Regulatory Framework

- **Statement of Issue:** The application fails to adequately address the unique safety profiles of the Global Laser Enrichment (GLE) facility, relying inappropriately on broad regulatory flexibilities that circumvent necessary upstream scrutiny.
 - **Basis for Dispute:** Laser enrichment presents novel, first-of-a-kind risks that differ significantly from legacy gas centrifuge or gaseous diffusion methods. The current regulatory approach—particularly the downstream regulatory flexibility permitted under the Part 53 framework—is insufficient for addressing these unique high-energy and chemical reaction hazards. A comprehensive, site-specific Integrated Safety Analysis is required before any approvals are granted, rather than deferring critical safety evaluations to later stages of the regulatory process.
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Part 3: Contention 2 – Inadequate Seismic Baseline and Premature Safety Analysis

- **Statement of Issue:** The GLE Safety Analysis Report (SAR) and the NRC's Draft EIS (Accession No. ML26061A085) fail to provide an accurate, site-specific seismic design basis for the Paducah site, thereby violating 10 CFR Part 70 requirements regarding facility design and natural phenomena hazards.
- **Basis for Dispute:** The proposed 322-acre facility is located approximately 10 miles east of the northern terminus of the New Madrid Seismic Zone (NMSZ), placing it firmly

within a zone of extreme seismic hazard. The region's deep, unconsolidated river sediments create a profound amplification effect that dramatically increases violent ground shaking and soil liquefaction potential during a seismic event. The GLE application relies on generalized, legacy Probabilistic Seismic Hazard Analysis (PSHA) data that researchers have already identified as mathematically flawed.

- **Supporting Facts:** The precise peak ground acceleration (PGA) for the Paducah site is currently the subject of an active, \$6.8 million DOE-funded Seismic Characterization Project conducted by the UK Center for Applied Energy Research (CAER). Because Phase 1 (deep trenching for active faults) and Phase 2 (ground-motion site response modeling) of this ongoing study are incomplete, the applicant's calculations regarding the structural integrity of vibration-sensitive SILEX optical arrays and high-pressure uranium hexafluoride (UF₆) containment are scientifically speculative. A genuine dispute exists because UF₆ reacts violently with atmospheric moisture to rapidly produce acutely toxic hydrogen fluoride (HF) gas, making an accurate, finalized seismic design basis an absolute necessity.
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Part 4: Contention 3 – Egregious Omission of General Matter from Cumulative Impacts Analysis

- **Statement of Issue:** The Draft EIS violates the National Environmental Policy Act (NEPA) and 40 CFR 1508.7 by entirely failing to analyze the synergistic environmental, logistical, and safety impacts of the directly adjacent General Matter uranium enrichment facility.
 - **Basis for Dispute:** General Matter unambiguously represents a "reasonably foreseeable future action" as the company has signed a lease with the DOE for a 100-acre parcel directly adjacent to the GLE site to construct a \$1.5 billion commercial High-Assay Low-Enriched Uranium (HALEU) facility.
 - **Supporting Facts:** General Matter is heavily capitalized, having been awarded a \$900 million DOE IDIQ contract, and initiated physical site clearing in early 2026 targeting full operations by 2034. The Draft EIS fatally omits the cumulative strain of two simultaneous, multi-billion dollar industrial nuclear facilities on regional electrical grids, cooling water extraction, and shared legacy DUF₆ cylinder logistics. If General Matter bypasses an exhaustive EIS under a categorical exclusion, the legal burden strictly falls upon the GLE EIS to provide the region's sole comprehensive cumulative impact analysis.
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Part 5: Contention 4 – Failure to Model Hydrogeological Mobilization of Legacy Plumes

- **Statement of Issue:** The environmental review fails to adequately characterize the impact of concurrent, massive site construction on the subterranean legacy contamination at the Paducah Gaseous Diffusion Plant (PGDP) site.

- **Basis for Dispute:** The PGDP reservation sits atop historical groundwater plumes heavily contaminated with trichloroethylene (TCE) and the radioactive isotope technetium-99.
 - **Supporting Facts:** The extensive excavation, heavy soil compaction, and continuous foundation dewatering required for the 322-acre GLE site, coupled precisely with the simultaneous construction of the neighboring 100-acre General Matter facility, will drastically alter local hydrogeological flow vectors. The Draft EIS lacks the dynamic 3D groundwater modeling required to prove these altered gradients will not mobilize existing legacy plumes into previously uncontaminated municipal water supplies or surface aquatic systems connected to the Ohio River.
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Part 6: Contention 5 – Deficient Emergency Response and Severe Accident Mitigation

- **Statement of Issue:** The GLE Emergency Plan and Severe Accident Mitigation Alternatives (SAMA) analysis fail to account for dual-facility catastrophic scenarios and the degradation of offsite infrastructure, violating the protective measures required under 10 CFR Part 50 and Part 70.
 - **Basis for Dispute:** The Safety Analysis Report assesses local emergency response capabilities in an unrealistic vacuum, completely failing to account for the overlapping physical and chemical presence of the General Matter facility. General Matter intends to enrich uranium to HALEU levels (up to 19.75% U-235), which introduces fundamentally different mass limits and severe, localized criticality hazards compared to GLE's 8% LEU target.
 - **Supporting Facts:** In the event of a severe NMSZ earthquake, simultaneous UF6 containment breaches at both facilities would create a catastrophic "Beyond Design Basis" accident. Local McCracken County emergency responders would be forced to navigate overlapping, highly toxic, ground-hugging HF gas plumes while simultaneously attempting to address high-level, imminent criticality risks at the General Matter site. The applicant's failure to model SAMA cost-benefit analyses and emergency evacuation logistics under a dual-facility failure scenario—especially when critical regional bridges and evacuation routes may be structurally compromised—constitutes a material omission regarding public health and safety.
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Part 7: Contention 6 – Oversight and Transparency Contention

- **Statement of Issue:** Current federal staffing shortages and a lack of structured independent oversight severely compromise the safe deployment and regulation of this facility.
- **Basis for Dispute:** The highly technical and proprietary nature of laser enrichment requires rigorous, specialized oversight. Given known federal staffing shortages within regulatory bodies, there is insufficient evidence that the NRC can maintain the

continuous, independent monitoring required for a novel commercial facility of this scale. The community requires a formal adjudicatory hearing to ensure total transparency and to cross-examine safety claims, ensuring that critical regulatory oversight is not diminished or expedited without public consensus.

Part 8: Request for Relief and Adjudicatory Hearing

Based on the demonstrated standing and the admissible contentions regarding technical safety, environmental integrity, and regulatory oversight, I respectfully request that the Nuclear Regulatory Commission grant a formal, public hearing. Bypassing standard environmental reviews and robust public scrutiny sets a dangerous precedent for McCracken County. A hearing is the necessary and legally appropriate venue to ensure corporate accountability and total transparency regarding the future of the Paducah site.

Reminder that this was drafted by myself and concerned citizens within the radius through independent research at the best of our ability through the most frequent data we could find.