

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the Atomic Safety and Licensing Board**

In the Matter of:)	Docket No. 70-143-LA
)	
Nuclear Fuel Services, Inc.)	December 2, 2022
)	
(License Amendment Application))	
)	

**ERWIN CITIZEN AWARENESS NETWORK, INC.'S COMBINED
REPLY IN SUPPORT OF PETITION FOR LEAVE TO INTERVENE**

Now comes Petitioner Erwin Citizen Awareness Network, Inc. (ECAN), by and through counsel, and sets forth its reply in support of its Petition for Leave to Intervene (Petition) in this matter which was filed on October 31, 2022. ECAN replies to the NRC Staff Answer and the Nuclear Fuel Services Answer, filed in this proceeding on November 23, 2022 and November 25, 2022 respectively.

I. INTRODUCTION

The Nuclear Regulatory Commission Staff (NRC Staff) and Nuclear Fuel Services (NFS) each attempt, improperly, to adjudicate the merits of the contentions alleged in ECAN's Petition at this threshold stage. They do so by means of a substitute trial by insinuation. Both the Staff and NFS make arguments of fact and law in the manner of a summary trial, made to appear as procedural quibbling over the thrust of ECAN's contentions. By making improper arguments of competing evidence, the NRC Staff and NFS seek for the Atomic Safety and Licensing Board (ASLB) to make substantive decisions with the result of rejecting ECAN's Petition.

But the standards for contentions to be admitted for litigation do not envision a merits trial conducted at this stage. A contention need only to be specific and have a basis. Whether or not the contention is true is left to litigation on the merits later in the licensing proceeding.

Washington Public Power Supply System (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546, 551 n.5 (1983), citing *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-869, 26 NRC 13, 23-24 (1987), *reconsid. denied on other grounds*, ALAB-876, 26 NRC 277 (1987); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), LBP-89-28, 30 NRC 271, 282 (1989), *aff'd on other grounds*, ALAB-940, 32 NRC 225 (1990); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), LBP-91-19, 33 NRC 397, 411 (1991), *appeal denied*, CLI-91-12, 34 NRC 149 (1991).

The factual support necessary for ECAN to show that a genuine dispute exists need not be in formal evidentiary form, nor be as strong as that necessary to withstand a summary disposition motion. What is required is “a minimal showing that material facts are in dispute, thereby demonstrating that an ‘inquiry in depth’ is appropriate.” *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 51 (1994) (citing “Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process,” 54 Fed. Reg. 33,168, 33,171 (Aug. 11, 1989), quoting *Connecticut Bankers Association v. Board of Governors*, 627 F.2d 245 (D.C. Cir. 1980).

As detailed below, NFS and the NRC Staff have conjured up a stream of apparitions and bugbears to divert the ASLB’s attention away from ECAN’s Petition showing that material facts are disputed and ECAN’s contentions are admissible.

II. REPLY IN SUPPORT OF CONTENTION A: NUCLEAR WEAPONS PROLIFERATION REVIEW IS REQUIRED BY NEPA

A. The Proposed Project Raises NEPA Proliferation Concerns

The NRC Staff urges that there's an insurmountable rhetorical and legal distance between the NFS plant in Erwin, Tennessee and any requirement to assess the project for nuclear weapons proliferation. The Staff accuses ECAN of imprecision "both in how it defines 'proliferation' and the specific nature of the impacts it believes should be assessed under NEPA and the AEA,"¹ and offers an *ipse dixit* definition that proliferation means "the spread of nuclear weapons or fissionable nuclear material to other countries."² But ECAN subscribes to the NRC's official definition of nuclear proliferation, which is more expansive than the Staff's crabbed attempt:

Nuclear nonproliferation refers to deterring both (a) *the spread of nuclear weapons* to entities (countries or terrorist groups) not currently possessing nuclear weapons (i.e., horizontal proliferation) and (b) *increased numbers of nuclear weapons* in countries already possessing nuclear weapons (i.e., vertical proliferation).³

ECAN's Contention A raises concerns about both types of proliferation. ECAN alleges vertical proliferation potential because initiating HEU purification at Erwin would help to normalize the never-ending build and rebuild and changing numbers of weapons within the U.S. nuclear bomb arsenal. Horizontal proliferation follows from the specter of purifying high-enriched uranium, which sustains or intensifies international demand for apocalyptic weapons for national preservation, despite evolving international laws and norms opposed to them.

¹ NRC Staff Answer at 10.

² *Id.* at fn. 53.

³ "NRC's Support to U.S. Nonproliferation Objectives," <https://www.nrc.gov/materials/fuel-cycle-fac/support-us-nonproliferation-objectives.html> emphasis added)(

The NRC is institutionally concerned with preventing weapons proliferation. Its “licensing framework addresses proliferation concerns through direct involvement in Federal agency activities that develop nonproliferation policy and through implementing the nonproliferation-related policies by regulatory requirements.”⁴ The NRC was held to have acted to fulfill the aims of the Atomic Energy Act in the past when it considered suspending a license proceeding to accommodate the President’s goal of securing international nonproliferation.⁵

There is both an aspect of symbolic messaging to the NFS project as well as its actual objective to produce improved, purified High Enriched Uranium as nuclear weapons material. Those aspects are sufficient evidence of proliferation to require disclosure within an Environmental Impact Statement or Environmental Assessment of where NFS’s purified HEU fits within the continuum of U.S. weapons manufacturing, and how (or whether) the new NFS line fulfills the United States’ nonproliferation objectives. The NRC must, under the Atomic Energy Act and NEPA, determine whether the NFS purification process will fulfill the objectives of preservation of public health and safety as well as national security. The proliferation potential of the new NFS product line is thus within the NRC’s license amendment decision.

A. Nuclear Fuel Services Denies That the Purified HEU Process Has Any Connection to Nuclear Weapons - Adding to ECAN’s Issues of Fact

The proposal to duplicate the Y-12 HEU purification activities at Erwin at the Nuclear Fuel Services requires comparisons between NFS security measures, safeguards and proliferation protections that pertain at the Y-12 facility. The regulations differ as between the Department of Energy (Y-12) and the NRC (NFS). Also, the NFS and NRC Staff answers have compounded some of the issues of fact identified by ECAN.

⁴ *Id.*

⁵ *Westinghouse Electric Corp. v. United States*, 598 F.2d 759, 772 (3d Cir. 1979).

Notably, City of Oak Ridge officials are concerned about safeguards and security of HEU weapons material as a result of moving the operations to the NRC-regulated (as opposed to a DOE/NNSA-regulated) NFS facility. Oak Ridge’s mayor notes that “safety and security will change from NNSA to the Nuclear Regulatory Commission. I continue to state that NNSA’s push to move the work outside the Oak Ridge region is extremely concerning.”⁶ An Oak Ridge city councilwoman who is also a retired Oak Ridge National Laboratory environmental scientist has commented, “By transferring this work to a private-sector facility in a different city, NNSA may hope to be able to pass off some of its responsibility for safeguarding its weapons-grade uranium to a third party, and perhaps also escape the level of safety-related scrutiny that its activities at Y-12 receive from the public and from the Defense Nuclear Facilities Safety Board.”⁷

Despite these knowing observations about the weapons implications of HEU purification, NFS castigates ECAN in its Answer and flatly denies that there will be *any* weapons material made, processed or handled at the Erwin plant:

To be absolutely clear, the LAR does not seek approval to conduct activities related to “nuclear weapons.” As noted in the LAR, NFS “is a manufacturer and processor of specialty nuclear fuels.” Indeed, Nuclear *Fuel* Services is the name of the licensee entity. And, as further explained in the SAER, “[t]he primary licensed activity is the production of nuclear fuel for the United States Navy.” To the extent Petitioner claims or believes otherwise, it is simply mistaken.⁸

Thus NFS has put at issue the very question of whether or not there will be nuclear weapons material at the Erwin plant. The answer to that question – which ECAN asserts is “yes” – raises further questions as to whether the security measures, safeguards compliance, quality assurance and nuclear weapons proliferation considerations at NFS will have to be changed to

⁶ Oak Ridger, “NFS awarded \$57.5M contract; city opposes”, 03/01/2021, <https://www.oakridger.com/story/news/2021/03/01/nfs-awarded-57-5-m-contract-city-opposes/6879305002/>

⁷ *Id.*

⁸ NFS Answer at 10 (footnotes omitted) (emphasis in original).

reflect those at the Y-12 facility, and in turn, whether those changes must be disclosed as part of the LAR application, the NEPA document and/or Safety Evaluation Report.

Although NFS license amendment documents don't mention that the purified HEU from the new product line will be used in nuclear weapons, that nonmention is not conclusive. ECAN cited in its Petition two industry news stories plus NFS's own local labor union's newsletter, all of which stated that the purified HEU at NFS will be for used in nuclear weapons:⁹

“The National Nuclear Security Administration (NNSA) intends to award BWX Technologies subsidiary Nuclear Fuel Services a sole-source contract to *purify highly enriched uranium and convert it into metal for nuclear weapons programs*.”¹⁰ “BWX Technologies Nuclear Fuel Services, Erwin, Tenn., *will begin producing purified uranium metal for nuclear weapons* under a sole-source award announced Wednesday by the National Nuclear Security Administration (NNSA).”¹¹ “The NFS contract to continue this work *allows for a steady supply for the Department of Defense, including its stockpile requirements for nuclear weapons material*.”^{12 13}

To be clear, the National *Nuclear Security* Administration, despite Nuclear *Fuel* Services' denial, intends to have NFS produce purified HEU for *nuclear weapons*. The Y-12 facility “currently recycles and then purifies highly-enriched uranium for use in canned subassemblies” in Y-12's Building 9212, which dates to the 1940s Manhattan Project.¹⁴ The purified HEU used in canned subassemblies¹⁵ describes “secondaries”, which are weapons material containers within nuclear weapons. Meanwhile, Defense Daily has reported, in connection with developing the HEU purification line at NFS, that the “NNSA needs purified highly enriched uranium to make secondary stages for refurbished nuclear warheads and bombs. In the 2020s, the agency

⁹ ECAN Petition at 8.

¹⁰ <https://www.exchangemonitor.com/nnsa-looks-bwxt-subsiidiary-hedge-heu-shortfall/>

¹¹ <https://www.defensedaily.com/nuclear-fuel-services-to-start-weapons-uranium-work-under-sole-source-nnsa-contract/nuclear-modernization/>

¹² <https://m.usw.org/news/media-center/articles/2021/nuclear-fuel-services-to-gain-more-jobs>

¹³ ECAN Petition at 10.

¹⁴ *Id.*

¹⁵ *Id.*

will be working on four, possibly five, nuclear-weapons refurbishments affecting land-, sea-, and air-based weapons.”¹⁶

NFS has intentionally denied that a “significant environmental change” will accrue to Erwin from this new nuclear weapons work, resulting in the company’s submission of a flawed, misleading and inaccurate license amendment request (LAR) that should be rejected. NFS’s fostering of this misleading lack of disclosure of nuclear weapons denies the public of its right to know that Erwin will become an upgraded target for espionage or attack, like Y-12. That means it is not clear to the public that Erwin will have the benefit of an emergency plan like the one maintained for the people of Oak Ridge.¹⁷ NFS’s failure to acknowledge its performance of nuclear weapons work also impedes a proper assessment of the socioeconomic and environmental impacts of the LAR application. This omission to mention the nuclear weapons connection constitutes a material deficiency in the LAR.

The transfer of nuclear weapons production technology and materials to a private corporation from a nuclear-weapon State Party – *i.e.*, the U.S. government – arguably constitutes a violation of Article I of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). Article I states unequivocally that each “nuclear-weapon State Party to the Treaty undertakes not to transfer *to any recipient whatsoever* nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly.”¹⁸

¹⁶ Defense Daily, “Nuclear Fuel Services Gets \$57M NNSA Contract to Prep for Weapons Uranium Work in Tennessee”, 03/04/2021, <https://www.defensedaily.com/nuclear-fuel-services-gets-57m-nnsa-contract-prep-weapons-uranium-work-tennessee/nuclear-modernization/>

¹⁷ <https://www.y12.doe.gov/about/emergency-public-information>

¹⁸ <https://www.wmd/nuclear/npt/text> (emphasis added).

The NRC Staff maintains that the assessment of the NFS project for proliferation concerns is governed by the “rule of reason.”¹⁹ Applying the rule of reason here, given the thorough and indefensible denial of a nuclear weapons connection by a private corporate contractor, compels the conclusion that NEPA considerations require a proliferation assessment. Moreover, once that assessment is concluded, any continued denial by NFS of the nuclear weapons connectedness of this purification project should compel denial of the license amendment.

ECAN, with the help of NFS, has demonstrated an issue of fact and Contention A should be admitted.

B. Assessment of Nuclear Weapons Proliferation Potential Is Required Under NEPA, Contrary to the Staff’s Strained Legal Interpretations

The NRC Staff argues against a proliferation assessment, using strained recitations of law. For example, the Staff cites *USEC, Inc. (American Centrifuge Plant)*, CLI-06-10, 63 NRC 451 (2006) to say that “[p]otential nuclear nonproliferation initiatives depend upon the actions and decisions of the President, Congress, international organizations, and officials of other nations” and that “nonproliferation goals and concerns ‘span a host of factors far removed from the licensing action at issue.’” The operative word here, however, is “potential” proliferation initiatives; the “issue of international policy” in *USEC* was a merely draft suggestion by the Carnegie Endowment for International Peace of the possibility that there be a temporary pause on the production of enrichment and reprocessing of U.S. HEU. The grassroots intervenor suggested in light of that potential suggestion that uranium processing at the DOE PORTS plant

¹⁹ NRC Answer fn. 56, citing 51 Fed. Reg. at 15,621; see also Council on Environment Quality, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, Final Rule, 85 Fed. Reg. 43,304, 43,332 (Jul. 6, 2020) (reiterating that the rule of reason applies when discussing incomplete or unavailable information).

should be terminated.²⁰ The Carnegie proposal was not pending before any international body and in any event could not directly cause curtailment of uranium processing at PORTS. The Commission agreed with the ASLB that its invocation was too unlikely and remote from the licensing issue at hand to be considered.²¹

Here, by contrast, the NNSA has contracted with NFS “to create redundant production capacity to ‘hedge against’ the risks of adopting new technology.”²² The proliferation potential of this HEU production project is not speculative; “NFS anticipates needing to design, license, and demonstrate the capability to perform uranium purification and conversion services.”²³ The NFS product line will add to U.S. inventories of weapons material. There is a causal relationship between the project and the proliferation concerns. NEPA requires a reasonably close causal relationship between the environmental effect and the alleged cause (analogous to proximate cause), and courts must consider “underlying policies or legislative intent” when deciding whether causation exists to make an agency responsible for a particular effect under NEPA. *Department of Transportation v. Public Citizen*, 541 U.S. 752 (2004). The NFS HEU purification process represents an underlying legislative policy to build nuclear weapons. Causation will be both direct as well as indirect and prompts NEPA scrutiny. Indirect effects may be “later in time or farther removed in distance, but are still reasonably foreseeable.”²⁴ The prioritization of HEU purification redundancy by the Federal Government will reasonably and foreseeably sustain, or even increase, international interest in the U.S. nuclear armament program.

The NRC Staff unreasonably pans ECAN’s case citations about past Environmental Impact Statements compiled on major nuclear projects. Of *Scientists’ Inst. for Pub. Info., Inc. v.*

²⁰ *USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 463 (2006).

²¹ *Id.*

²² NRC Answer at 17.

²³ *Id.*

²⁴ 40 CFR § 1508.1(g)(2).

Atomic Energy Comm'n,²⁵ the Staff says it “includes no discussion of proliferation or nuclear weapons.”²⁶ That’s quite misleading; the decision discusses how NEPA should be used to address a program of building liquid metal fast breeder reactors that produce plutonium for use as nuclear reactor fuel. The end use for plutonium is to multiply the explosiveness of nuclear weapons. The Department of Energy and Nuclear Regulatory Commission understood the *Scientists’ Institute* mandate to compile an EIS as requiring inclusion in the compilation of the Liquid Metal Fast Breeder Reactor (LMFBR) Final Supplemental Environmental Impact Statement a discussion of nuclear weapons proliferation possibilities from creating plutonium fuel in breeder reactors while generating electricity.²⁷ The LMFBR FSEIS analyzed the nuclear safeguards and weapons proliferation aspects of building a U.S. nuclear power industry around plutonium-breeding reactors.²⁸

In its Answer, the NRC Staff questioned whether the 1976 *Kleppe* decision²⁹ sapped *Scientists’ Institute* of its legal vitality.³⁰ ECAN points to *Scientists Institute* as an example where an Environmental Impact Statement was ordered and it ultimately addressed weapons proliferation; it wasn’t offered for the principle that “future, yet unproposed projects” were required to be covered in EISes. DOE took until 1981 to compile and publish the LMFBR FSEIS, and that FSEIS addressed nuclear safeguards and proliferation concerns. Although the NRC Staff suggests that *Scientists’ Institute* may have lost vitality by 1990, it had not by 1981.

²⁵ 481 F.2d 1079, 1092, 156 U.S.App. D.C. 395 (D.C. Cir. 1973).

²⁶ NRC Answer at 14.

²⁷ EIS-0085-S: Liquid-Metal Fast Breeder Reactor Program, Supplemental, <https://www.energy.gov/nepa/eis-0085-s-liquid-metal-fast-breeder-reactor-program-supplemental>. The FSEIS is found at <https://www.energy.gov/sites/default/files/2015/06/f23/EIS-0085-FSEIS.pdf>

²⁸ See *id.* at pp 145-165 (nuclear fuel chain and power plant safeguards); pp. 166-169 (proliferation); Natural Resources Defense Council comment letter, pp. 363-399 of pdf; State of California comment letter, 419-422 of pdf).

²⁹ *Kleppe v. Sierra Club*, 427 U.S. 390 (1976).

³⁰ NRC Staff Answer 14, fn. 69.

Scientists' Institute vitally required compilation of an EIS during the 5 years after *Kleppe*, with no objection ever being raised by the U.S. DOE.

The NRC staff decries ECAN's recitation of *West Michigan Env'tl. Action Council, Inc. v. NRC*³¹ as a case "concerning mootness and the awarding of attorney's fees where the NRC voluntarily elected to prepare an Environmental Impact Statement after the plaintiff had filed suit seeking a declaratory ruling to that effect."³² It was about more. The West Michigan Environmental Action Council initiated suit in 1973 against the Atomic Energy Commission (AEC), predecessor to the NRC, and Consumers Power Company "to challenge an operating license amendment issued to Consumers by the AEC authorizing the increased use of recycled plutonium in mixed oxide fuel rods at the Big Rock Point Nuclear Plant near Charlevoix, Michigan. In particular, the plaintiff council sought declaratory relief to make the provisions of the National Environmental Policy Act (NEPA), 43 U.S.C. § 4321 *et seq.* (1976), which require preparation of an Environmental Impact Statement (EIS), applicable to Consumers' expanded use of plutonium at the facility." *West Michigan Env'tl Action Council*.³³ "By February 1974, the defendant AEC announced that it planned to prepare a Generic Environmental Statement on the Use of Recycled Plutonium in Mixed Oxide Fuel in Light Water Cooled Reactors (GESMO)."³⁴ Clearly, but for the lawsuit, the Atomic Energy Commission would not have compiled the GESMO EIS.

III. REPLY IN SUPPORT OF CONTENTION B: NARROW SCOPE OF PURPOSE AND NEED STATEMENT UNDERCUTS CONSIDERATION OF ALTERNATIVES

A. Zero Hedge at NFS

³¹ 570 F.Supp. 1052 (1983).

³² NRC Staff Answer at 14.

³³ 570 F.Supp. 1052, 1053 (1983).

³⁴ *Id.*

ECAN has exposed an obvious issue of fact with the license amendment in the NFS Environmental Report. The NRC Staff asserts that ECAN has not addressed the full purpose and need statement, pointing out that the HEU purification line “is intended to create redundant production capacity to ‘hedge against’ the risks of adopting new technology [at Y-12].”³⁵ In other words, if the new electrorefining process at Y-12 doesn’t work out or isn’t as consistent or productive as anticipated, the old technology will have been recreated at NFS so production of purified HEU can still happen.

But why the hedge? Throughout construction of the new electrorefining process at Y-12, the old HEU purification technology will continue to exist at Y-12, also. In light of that, the NFS “hedge” is redundant and wasteful and the environmental positives of not constructing it outweigh the negatives of building it.

Notably, the Staff didn’t respond to the Stockpile Stewardship and Management Plan problem cited by ECAN at footnote 33 of its Petition. ECAN stated:

This report, produced a full year after the announcement of the \$57.5 million contract between NNSA and NFS, further states that the Uranium Modernization program “will continue to fund the purification of metal in Building 9212 until the electrorefining process is fully operational, at which point the hazardous wet chemistry, conversion, and reduction operations in Building 9212 will be shut down.”³⁶

This Reply is being written in early December 2022, and the new product line at NFS is not yet constructed. At the same time, startup testing of the new electrorefining process at Y-12 has been ongoing for about two years, with apparently satisfactory results. As of January 2022, most glove boxes had been installed for the new uranium purification process at Y-12 amid predictions that “National Security Complex and hot commissioning should start early next

³⁵ NRC Answer at 17.

³⁶DOE/NNSA, FY2022 Stockpile Stewardship and Management Plan, p.3-11, <https://www.energy.gov/sites/default/files/2022-03/FY%202022%20SSMP%20March%202022.pdf>

year” [*i.e.*, 2023].³⁷ Presumably the Building 9212 HEU purification program continues at the present because the electrorefining process is not yet fully operational. But all of this describes an alternative to the proposed NFS project not mentioned by NFS in its Supplemental ER. Likely the new electrorefining process will become operational in the near future, while the old purification line at Y-12 continues to function.

The “hard look” that NEPA requires be cast upon environmental impacts is tempered by “a ‘rule of reason’ in that consideration of environmental impacts need not address ‘all theoretical possibilities,’ but rather only those that have some ‘reasonable possibility’ of occurring.”³⁸ The alternative that ECAN has postulated in its Petition, however, not only has a “reasonable possibility of occurring,” it is ***actually happening in real time as of this writing.***

Council on Environmental Quality regulations at 40 CFR § 1502.14 require the NRC to:

- (a) Evaluate reasonable alternatives to the proposed action, and, for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination.
- (b) Discuss each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits.

NFS ignored these obligations in preparing its Supplemental Environmental Report.

The D.C. Circuit warned, in *Citizens Against Burlington, Inc. v. Busey*,³⁹ that “[A]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency’s power would accomplish the goals of the agency’s action, and the EIS would become a foreordained formality. . . .”

³⁷<https://www.exchangemonitor.com/electrorefining-glove-boxes-going-in-at-y-12-radioactive-work-expected-in-2023-2/?printmode=1>

³⁸*Crow Butte Resources, Inc.* (Marsland Expansion Area), LBP-19-2, 89 NRC 18, 40 (2019) (citing *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-98-3, 47 NRC 77, 87–88 (1998)). (quoting *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-156, 6 AEC 831, 836 (1973)).

³⁹938 F.2d 190, 196 (D.C. Cir. 1991).

The failure by NFS and the NRC Staff to fully explain and disclose that the hedging effect of the HEU purification process at NFS is redundant of the continuing Y-12 HEU purification effort is difficult to view as inadvertent. Whether intentional or not, the Staff and NFS have caused or suborned the issue of fact raised in ECAN's initial petition filing.

IV. REPLY IN SUPPORT OF CONTENTION C: LEGACY CONTAMINATION IS UNDERSTATED, UNINVESTIGATED AND MISSING FROM CUMULATIVE EFFECTS ANALYSIS IN THE ER

A. The NRC Can't Say 'No'

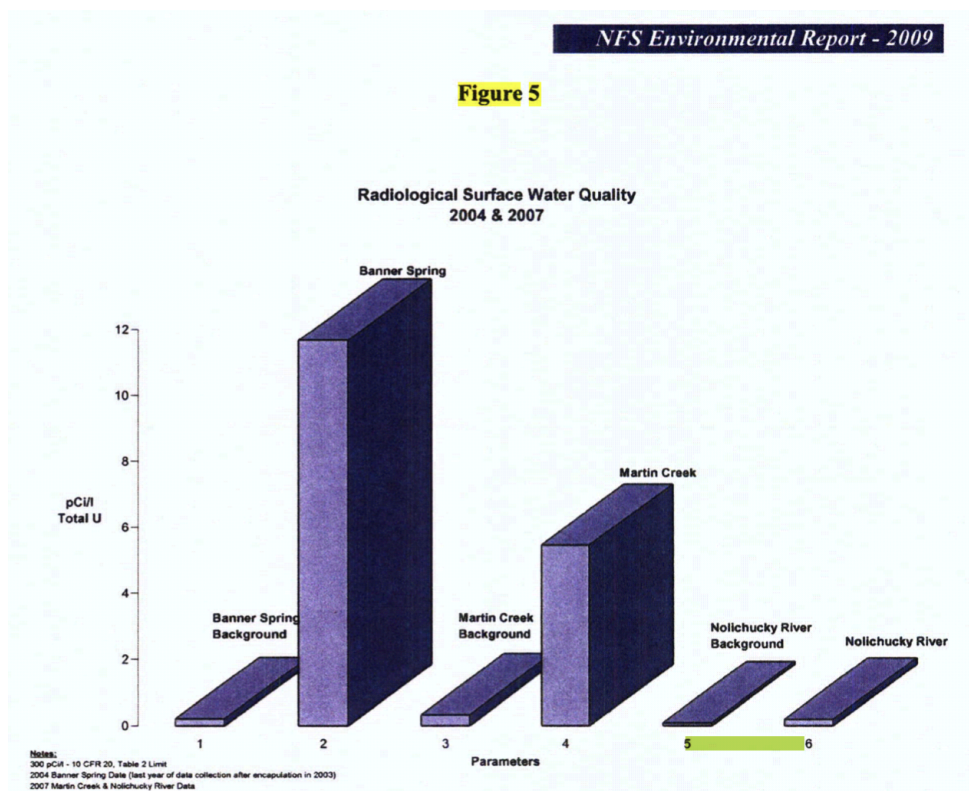
Regulatory capture is on full display in NRC's Answer to ECAN's Petition. No environmental impact is ever significant enough for the NRC to reject a license or amendment. "What you're talking about is [a] matter of national security. That puts us sort of between a rock and a hard place" whined an NRC official in 1981 after yet another series of security violations on the heels of the "unexplained disappearance of some 50 pounds of weapons grade uranium" from NFS. Another former NRC official described the "aging facility as a 'crock of a plant.'" ⁴⁰ In 2012, when asked why NRC gave this 55-year-old "crock of a plant" such a long license extension, "We never really said no to anybody before" was the answer given by the NRC's then-NFS project overseer. ⁴¹

The we've-never-said-no-before approach to licensing helps to explain – but not justify – why a chart like Figure 5 ⁴² did not prompt the NRC to take the NEPA-required "hard look" at NFS's cumulative radiological impacts on the environment earlier than now.

⁴⁰ "Plant repeatedly cited for nuclear safety failures", Atlanta Journal-Constitution, December 2, 1981.

⁴¹ Kevin Ramsey, NRC, during meeting between ECAN members and NRC Staff, Erwin, TN, August 30, 2012.

⁴² NFS, 2009 Environmental Report, ML091900072, p. 4-2.



But no analysis of cumulative impacts from radioactive air, water and soil contamination in the vicinity of, and downriver from, the NFS plant has ever been undertaken. The NRC's mission seems to conflate the statutory mandate of having "reasonable assurance of adequate protection" with never saying "no" to NFS.

Hence the families walking their dogs next to Martin Creek, which runs alongside Erwin's Linear Trail near NFS, are on their own. The only protection they have had from waters poisoned by NFS has been signs put up by an unknown citizen. At first, the "Warning" signs were in sheet protectors stapled to the split rails along the Linear Trail. When weather or vandals destroyed them, the anonymous public protector hung enamel signs on the rails. Since ECAN photographed these "Warning" signs posted next to the Linear Trail where it crosses the ponding area, the signs have been removed and the public has no protection from surface water poisoned by NFS.



B. The Pipe Stream

Disturbingly, the NRC is willing to accept, without question, false assertions made by NFS in its LAR. For example, there is a branch of Banner Spring which was relocated in 1967⁴³ and “enclosed inside an underground pipe” in 2005.⁴⁴ Yet, citing a Tennessee Department of Environmental Conservation (TDEC) 2019 report,⁴⁵ NFS asserts in its Supplemental ER that Banner Spring Branch (which, by 2021, had been channelized in a buried culvert for 16 years) is “classified for fish and aquatic life, livestock watering, irrigation and recreation”⁴⁶ like Martin Creek and the Nolichucky River. But TDEC 2019 doesn’t list Banner Spring Branch at all. Or Martin Creek. A “Martin Spring” in the lower Tennessee River basin is noted on p. 14 of TDEC 2019, a “Martin Branch” in the upper Tennessee River basin is noted on p.19. But a Martin Creek in the Nolichucky River basin is not listed in the TDEC report. Nor is Banner Spring Branch. Therefore, the incredible assertion that a stream in a pipe supports “fish and aquatic life, livestock watering, irrigation and recreation” is obviously false.

Another myth about Banner Spring Branch that NFS peddles is that cited sources like the Department of Energy (DOE 1996) and the Tennessee Wildlife Resources Agency (TWRA

⁴³ Emergency Plan, Chapter 1, Revision 2, June 2, 1998, pp. 1-17.

⁴⁴ NFS, Environmental Report 2009, ML091900072, pp. 3-4.

⁴⁵ <https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40-04.20190911.pdf>

⁴⁶ NFS, Supplemental ER, 2021, ML22066B005, p. 17.

2017) have reported that “Banner Spring Branch contains several species of minnows where it converges with Martin Creek”. See Page 3-9 of NFS’s 2009 ER, the reference source for which is DOE 1996⁴⁷ and Response 24, the reference source for which is TWRA 2017⁴⁸. Both the ER and the Supplemental make the same claim in exactly the same words: “Banner Spring Branch contains several species of minnows where it converges with Martin Creek.”

The NRC’s Request for Additional Information (RAI) Request 24 asked for updated information on Nolichucky River fish species “relevant to 2022.”⁴⁹ NFS responded that the “Supplemental Environmental Report will be updated with this more recent data and submitted to the NRC for review” and then provided “revised Sections 3.5.2 Aquatic Biota” on Page 30 of 43. Response 24 makes the claim that a stream in a pipe not only has aquatic life but that it is also diverse. TWRA 2017, cited at the end of the paragraph, is the implied source for the revised information.

TWRA 2017 is the Tennessee Wildlife Resources Agency Region IV Warmwater Streams and Rivers Fisheries Report. The Nolichucky River is addressed in the report beginning on Page 37 and ending on Page 44. None of the tributaries to the Nolichucky were mentioned in the TWRA’s report. A search of TWRA 2017 and a review of the section of the report that discusses the TWRA’s research on the Nolichucky River found no mention of Banner Spring Branch whatsoever. That is for good reason: “Banner Spring Branch is completely enclosed inside a pipe.”⁵⁰

C. Groundwater and Cumulative Impacts

For the NRC Staff, illegible bar charts⁵¹ and single sentences explaining how

⁴⁷ NFS, 2009 ER, ML091900072, Page 3-9.

⁴⁸ NFS, RAI Responses, June 30, 2022, ML22193A034, Page 30 of 43.

⁴⁹ *Id.*

⁵⁰ NFS, 2021 Supplemental ER, ML22066B005, Page 18.

⁵¹ *Id.* at pp. 29, 31.

bioremediation for PCE has created other toxins like TCE, 1,2-DCE and VCI⁵² suffice as “extensive discussion”⁵³ of groundwater. No new plume diagrams for PCE or TCE have been presented by the Staff via answer, nor are there maps like those presented in the 2007 ATSDR Public Health Assessment for Nuclear Fuel Services.⁵⁴ Mention of Erwin Utilities’ nearby Railroad Well – a major source of drinking water for the town – consists of squishy statements like “contaminants from the facility *should have no impact* on the local drinking water supply well” and “the capture zone for this water supply well *does not appear* to intersect the *simulated* contaminant plume.”⁵⁵ Nor has the NRC presented any new data on the capture zone of the Railroad Well, nor a map to update the capture zone like the one published by the ATSDR. The NRC has not made any requests for additional information on the vital issue of drinking water quality to NFS.

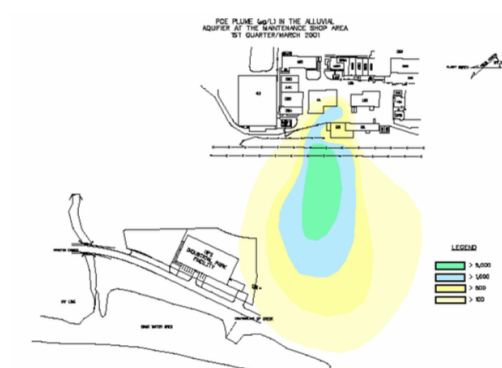


Figure 6. Off site contamination, March 2001

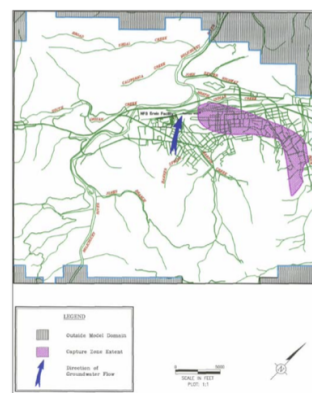


Figure 3. Railroad Well capture zone analysis for 1000 gpm.

Source: ATSDR, Public Health Assessment for Nuclear Fuel Services (2007), Page 20 (Figure 6) and Page 10 (Figure 3).

Bar charts are meant to do more than show blobs on a line. Underlying data, competently plotted, can tell a story. But NFS hasn’t adequately illustrated the data they purport to, and no RAIs seek clarification, leaving NFS’s LAR application deficient.

⁵² *Id.* at p. 29.

⁵³ NRC Answer at 22.

⁵⁴ <https://www.atsdr.cdc.gov/hac/pha/nuclearfuelservices/nuclearfuelservicespha052907.pdf>

⁵⁵ NFS, Supplemental ER, 2021, ML22066B005, pp. 29, 30.

The NRC Staff again defends the indefensible in its claim that the data listed in Table 22B of the Supplement ER are somehow illustrative of cumulative impacts.⁵⁶ Indeed, Table 22B contains data that demand explanation. But not a single footnote nor a sentence in the text explains or even conjectures (1) why upstream gross beta readings in the Nolichucky River in 2011 exceed downstream gross beta; (2) why upstream gross beta readings in Martin Creek in 2012 exceed downstream gross beta at the Linear Trail; (3) why upstream gross alpha readings in the Nolichucky in 2012 exceed downstream gross alpha; (4) why upstream total Uranium readings in the Nolichucky in 2018 exceed downstream total U; and (5) why upstream gross beta readings in the Nolichucky in 2019 exceed downstream gross beta.

D. Greeneville's Drinking Water System Is MIA

Another glaring omission from the LAR is the fact that the Nolichucky River downriver of NFS provides drinking water to Greeneville and other communities in Greene County, TN. The Greeneville Sun reported that staff “from the Greeneville Water Commission are required by the Clean Water Act to monitor for uranium every nine years.”⁵⁷ But “due to past concerns about the water intake station being downstream from Nuclear Fuel Services, the commission monitors its finished water annually” according to Greeneville Water Superintendent, Laura White.⁵⁸

E. Sinkhole Hazards

The Tennessee Emergency Management Agency (TEMA) categorizes sinkholes as “geologic hazards.”⁵⁹ Nuclear materials facilities are among the “16 critical infrastructure sectors vital to the national health and safety of the United States”⁶⁰ according to TEMA.

⁵⁶ NRC Answer at 20.

⁵⁷ “Testing Finds Uranium Levels Well Below Legal Limit”, The Greeneville Sun, October 27, 2018.

⁵⁸ *Id.*

⁵⁹ <https://www.tn.gov/tema/prepare/tennessee-threats/geologic.html>

⁶⁰ <https://www.tn.gov/tema/prepare/tennessee-threats/critical-infrastructure.html>

Therefore, NFS's application is dangerously deficient because of its failure to address the geologic hazards to the NFS plant complex as critical infrastructure, and should be rejected.

F. NFS Avatars

NFS asserts that its application provides updated "disclosures and analyses",⁶¹ but its claim is factually unsupported. Not only has the licensee made false statements in its Supplemental ER, but it has also cited them in report after report.

For example, in its 2009 ER the licensee alleged that Banner Spring Branch, which had been enclosed in a pipe for several years, was classified by the the Tennessee Department of Environment and Conservation "for fish and aquatic life, livestock watering and wildlife, irrigation, and recreation". No citation was presented. See Page 3-5 from NFS's 2009 ER:

NFS Environmental Report - 2009

designated uses, and resident aquatic biota. Banner Spring Branch, Martin Creek, and the Nolichucky River are all classified for fish and aquatic life, livestock watering and wildlife, irrigation, and recreation. The Nolichucky River is also classified for industrial use and as a domestic water supply.

Applicant's 2022 Supplemental ER (which NFS asserts is an update) repeats verbatim the same impossible claim that Banner Spring Branch, which by 2022 had been enclosed in a pipe for over 15 years, is classified by TDEC "for fish and aquatic life, livestock watering and wildlife, irrigation, and recreation."

According to NFS's Supplemental ER at p. 17:

The streams and creeks of Tennessee are classified by the TDEC. The classifications are defined in the State of Tennessee Water Quality Standards. Classifications are based on water quality, designated uses, and resident aquatic biota. **Banner Spring** Branch, Martin Creek, and the Nolichucky River are all classified for fish and aquatic life, livestock watering and wildlife, irrigation, and recreation. The Nolichucky River is also classified for industrial use and as a domestic water supply (TDEC 2019).

⁶¹ NFS Answer at 16.

The citation given was TDEC 2019,⁶² a Chapter 0400-40-04 report entitled “Use Classifications for Surface Waters”. The link cited in the references opens to a 50-page listing dated September, 2019 (Revised). The section on the French Broad River Basin – of which the Nolichucky River Watershed is a part – begins on Page 29 and ends on Page 35. The Nolichucky River’s classification can be found on Page 32 (which follows). Depending on the river’s section, the Nolichucky’s uses vary.

USE CLASSIFICATIONS FOR SURFACE WATERS

CHAPTER 0400-40-04

(Rule 0400-40-04-.10, continued)

STREAM	DESCRIPTION	DOM	IWS	FAL	REC	LWW	IRR	NAV	TS	NRTS
City Spring Tributary	Mile 0.0 to Origin			X	X	X	X			
Indian Creek	Mile 0.0 to Origin			X	X	X	X			
Ball Creek	Mile 0.0 to Origin			X	X	X	X			
Unnamed Tributary	At Ball Creek (Mile 2.9); Mile 0.0 to Origin			X	X		X			
Leadvale Creek	Mile 0.0 to Origin			X	X	X	X			
Clear Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 0.0 to 5.3	X	X	X	X	X	X			
Long Creek	Mile 0.0 to Origin			X	X	X	X			
Sinking Creek	Mile 0.0 to Origin			X	X	X	X			
Nolichucky River	Mile 5.3 to 7.7		X	X	X	X	X			
Nolichucky River	Mile 7.7 to 100.8 (N. Carolina-Tenn Line)	X	X	X	X	X	X			
Slate Creek	Mile 0.0 to Origin			X	X	X	X			
Bent Creek	Mile 0.0 to Origin			X	X	X	X			
Mud Creek	Mile 0.0 to Origin			X	X	X	X			
Williams Branch	Mile 0.0 to Origin			X	X	X	X			
Lick Creek	Mile 0.0 to 49.0		X	X	X	X	X			
Lick Creek	Mile 49.0 to Origin	X	X	X	X	X	X			
Black Creek	Mile 0.0 to Origin			X	X	X	X			
War Branch	Mile 0.0 to 0.5			X	X	X	X			
Unnamed Tributary	At Lick Creek (Mile 36.1); Mile 0.0 to Origin			X	X		X			
Little Chucky Creek	Mile 0.0 to Origin			X	X	X	X			
Mosheim Branch	Mile 0.0 to Origin			X	X	X	X			
Unnamed Trib.	At Mosheim Branch (Mile 2.0); Mile 0.0 to Origin			X	X		X			
Unnamed Tributary	At Little Chucky Creek (Mile 17.2); Mile 0.0 to Origin			X	X	X	X			
Gap Creek	Mile 0.0 to Origin			X	X	X	X			
Furness Branch	Mile 0.0 to Origin			X	X	X	X			
Cove Creek	Mile 0.0 to Origin			X	X	X	X			
Flag Branch	Mile 0.0 to Origin			X	X	X	X			
Richland Creek	Mile 0.0 to Origin		X	X	X	X	X			
Crazy Creek	Sinkhole to Origin			X	X	X	X			

September, 2019 (Revised)

32

However, neither Martin Creek nor the stream in a pipe, Banner Spring Branch, are listed in this report. It appears that NFS’s assertion that Banner Spring Branch is “classified for fish and aquatic life, livestock watering and wildlife, irrigation, and recreation.” is patently false.

⁶² <https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40-04.20190911.pdf>

Equally lacking in credibility is NFS's claim that its Supplemental ER presents "updated disclosures and analyses."⁶³ Critical information regarding the migration of the uranium groundwater contaminant plume is absent. NFS mentions of Erwin Utilities' Railroad Well merely repeat assumptions made for modeling studies that have not been updated since sinkhole activity erupted in Erwin in 2011 and 2012. Consequently, NFS's self-described "analysis" of the risks to Erwin's drinking water from NFS groundwater contamination amounts to little more than cut-and-paste jobs.

For example, NFS's 2009 ER stated on Page 4-3 that "the capture zone for this water supply well does not appear to intersect the simulated contaminant plume."⁶⁴ NFS's Supplemental ER states identical language at p. 17: "the capture zone for this water supply well does not appear to intersect the simulated contaminant plume".⁶⁵ Thirteen years and at least two Erwin sinkhole occurrences later, NFS continues to pawn off a 1999 report that invoked simulated plume modeling as "analysis." The water-drinking public deserves better.

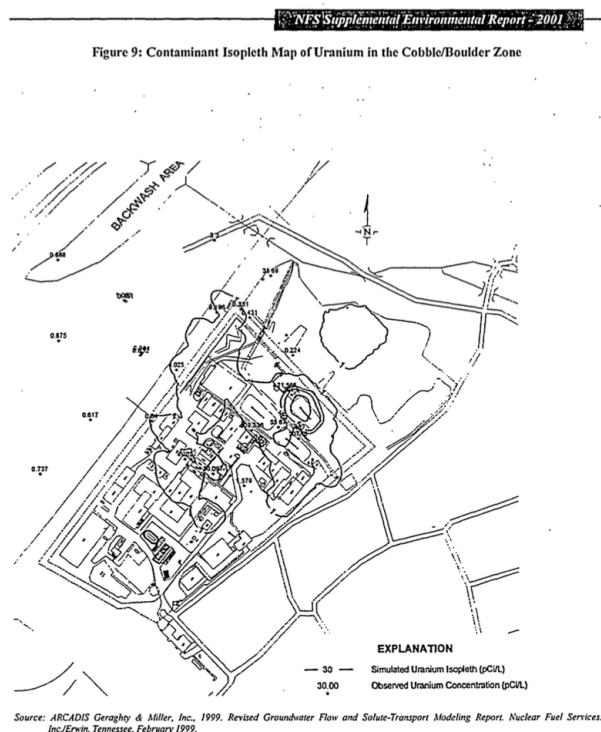
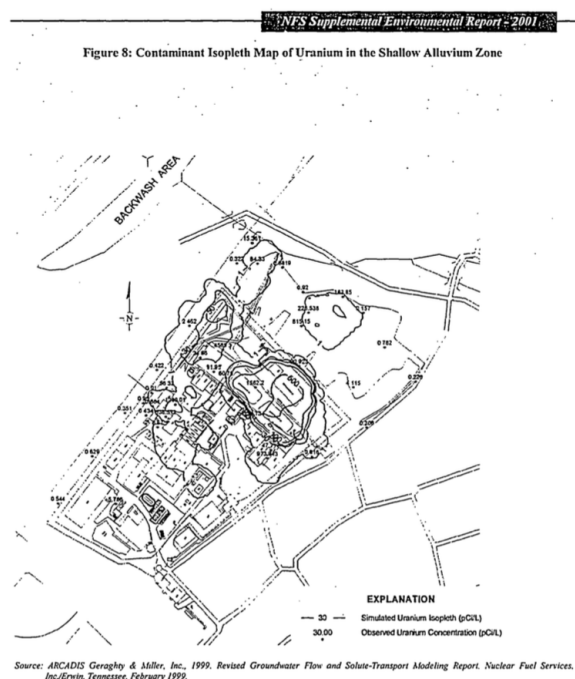
NFS stated in its 2001 Supplemental ER that "groundwater plumes are best expressed through contaminant isopleth maps," and presented uranium plume maps for the Shallow Alluvium under its site and for the Cobble/Boulder Zone. But the maps are out of date and the 1999 report⁶⁶ is just recycled.

⁶³ NFS Answer at 16.

⁶⁴ ML091900072

⁶⁵ ML22066B005.

⁶⁶ARCADIS Geraghty & Miller, Revised Groundwater Flow and Solute-Transport Modeling Report, 1999.



As a result, no meaningful update on the known uranium and PCE/TCE groundwater plumes has been presented in the LAR.

While providing some numbers in obscure tables of radioisotopic contamination of surface and groundwater, NFS has avoided discussing cumulative plutonium contamination of water, sediment and soil. NRC's 2011 EA⁶⁷ – touted by NFS as having “disclosed and analyzed past, present, and future facility effluents”⁶⁸ -- reported on the excavation of plutonium-contaminated soil. Yet, NFS has ignored this long-overdue milestone. Not to provide an update on the excavation of plutonium-contaminated soils, a project that was to have begun in December 2010, is a serious omission from the LAR.

The avoidance of even a mention of plutonium emissions and discharges is concerning given the fact that the BLEU Processing Building (BPF) is involved in NFS's plans.⁶⁹ The 2002

⁶⁷ 2011 Environmental Assessment, ML112560265

⁶⁸ NFS Answer at 16.

⁶⁹ 2021 LAR, ML21327A099.

EA for the BLEU Project, for which the BPF was central, presented data on plutonium effluents in Table 5.1⁷⁰ (following).

Table 5.1 Comparison of current liquid effluent releases with estimated effluents and dose from the proposed action

Element	Removal Factor ^a	Proposed Action WWTF Effluent (Ci/yr) ^b	Current WWTF Effluent (Ci/yr)	As Percentage of Current WWTF Effluent (%)	Proposed Action Effluent Dose (mrem/yr) ^c
Uranium	0.0024	1.05E-4	6.3E-4	16.6	2.93E-3
Thorium	0.0024	9.10E-3	4.4E-6	2.1E+5	1.01E+0
Plutonium	1.0000	3.09E-2	5.3E-7	5.8E+6	4.36E-1
Americium	1.0000	5.56E-4	— ^d	— ^d	2.72E-2
Neptunium	1.0000	7.67E-3	— ^d	— ^d	4.45E-1
Actinium	1.0000	1.39E-4	— ^d	— ^d	1.16E-1
Cesium	1.0000	6.75E-4	— ^d	— ^d	1.82E-2
Technetium	1.0000	1.75E-4	1.6E-2	1.1	2.98E-4
Strontium	1.0000	3.45E-04	— ^d	— ^d	3.45E-3
Total					2.06E+0

^a The removal factor represents the assumed fraction of material remaining in effluent following treatment at the WWTF. A factor of one assumes no treatment and this is conservative since treatment is planned.

^b To convert Ci to Bq, multiply by 3.7E+10.

^c To convert mrem to mSv, multiply by 0.01.

^d Not estimated for current releases.

NFS's failure to address the potential for plutonium emissions and discharges in its LAR is a fatal flaw. For this and other reasons of fact and law, NFS's application should be denied.

G. NRC and NFS Silence About Cumulative NFS Plutonium Throughout The Downstream Nolichucky Basin

While the NRC Staff points to data in the Supplemental ER and NFS RAI responses supposedly addressing plutonium contamination of the Nolichucky River as a counter to the Declaration of Dr. Michael Ketterer, ECAN's chemist, this information falls short of providing a cumulative effects analysis for several reasons. First, the data only reflects comparatively recent discharges of plutonium, so cumulative effects are not easily grasped. It is not possible to understand the level of radiological danger of plutonium in the river water because the Tennessee Department of Environmental Conservation cannot limit plutonium releases into waterways under the Clean Water Act's National Pollution Discharge Elimination System (NPDES)

⁷⁰ 2002 BLEU EA, ML050540096.

guidelines: “[T]he Nuclear Regulatory Commission has jurisdiction over these facilities instead.”⁷¹ Respecting uranium releases to water, “effluent limits are based on the state's water quality criteria based on Uranium toxicity.”⁷² That is, the Tennessee environmental agency only monitors radioisotopes for their toxicity as heavy metals, not for the cancers and other harms such as genetic damage and neurological illnesses that follow from exposure to their radiation: “. . . [T]his permit includes a maximum concentration for Uranium . . . because of its toxicity rather than its radioactivity.”⁷³

The NRC Staff further failed in its Answer to respond to ECAN’s assertion that “possible thorium and plutonium plumes – which the 1978 Region II sampling program found in the ponds – have also been disregarded. The impact of PCE bioremediation gone wrong needs to be thoroughly addressed to determine the extent to which the plumes of TCE, 1,2-DCE and VCI have migrated and carried other contaminants with them.”⁷⁴

The NRC also did not answer ECAN’s allegation that “Radiological contamination is not mere water pollution which can be somewhat reversed in the proper physical environment. Most Uranium isotopes have half-lives of hundreds or thousands of years. Plutonium’s half-life is 24,000 years. The Erwin facility is 65 years old and apparently will continue to emit Uranium and other radioisotopes for years to come, so the radiological contamination of the Nolichucky is continuing and accumulating. Analysis and disclosure of these detriments within the NEPA

⁷¹NFS 2021 NPDES Permit No. TN0002038, “Addendum to Rationale,” pp. A-1 to A-2, attached to NFS “Response to NRC Request for Additional Information to Support Environmental Review of NFS Application to Amend SNM-124 to Construct and Operate a Uranium Metal Process” (Jun. 30, 2022) (ML22193A034).

⁷² *Id.*

⁷³ *Id.* at p. R-2.

⁷⁴ ECAN Petition at 29.

document must address the cumulative impacts of past, present and future contamination of the River.”⁷⁵

The cumulative analyses delineated by ECAN are supported in law, are not present in the Supplemental ER nor any other document associated with the License Amendment Request, and Contention C should be admitted for hearing.

V. REPLY IN SUPPORT OF CONTENTION D: FUEL CYCLE FACILITY REGULATIONS ARE INSUFFICIENT TO PROTECT PUBLIC HEALTH, SAFETY & SECURITY BECAUSE THEY LACK STRINGENT QUALITY ASSURANCE REQUIREMENTS

This LAR poses a very unique regulatory problem. An industrial process that hitherto at the DOE’s Y-12 facility was subject to Quality Assurance requirements particular to DOE facilities will be duplicated at a privately-owned industrial complex regulated by the NRC without those QA requirements. As ECAN noted in its Petition, Y-12 contractors are contractually obligated to have Quality Assurance management, as well as nuclear quality control engineers with the technical expertise who report to them, to protect worker health and safety, public health and safety, and to ensure the security of nuclear weapons material.⁷⁶ Moreover, “Contractors conducting activities, including providing items or services, that affect, or may affect, the nuclear safety of DOE nuclear facilities must conduct work in accordance with the Quality Assurance criteria in [10 CFR] § 830.122.”⁷⁷

In its June 30, 2022 RAI response to the NRC Staff, NFS mentioned that its “downblending operations . . . ha[ve] been safely performed by NFS for over 20 years (a routinely renewed contract).”⁷⁸ This is a material misstatement that omits to mention an

⁷⁵ ECAN Petition at 26.

⁷⁶ ECAN Petition at 36.

⁷⁷ 10 CFR § 830.121.

⁷⁸ NFS “Response to NRC Request for Additional Information to Support Environmental Review of NFS Application to Amend SNM-124 to Construct and Operate a Uranium Metal Process” (Jun. 30, 2022) (ML22193A034), p. 10/43 of pdf.

extremely serious process failure with significant quality implications. NFS is required to have Quality Assurance controls only for the shipment of special nuclear material. But the 2006 37-liter uranyl nitrate spill at NFS occurred in one of the buildings that will be used in the bomb-Uranium purification process, where in 2006, two criticality accidents were narrowly avoided.

The 2006 spill occurred at NFS under an approved LAR. The Blended Low Enriched Uranium (BLEU) facility at NFS involved three LARs, including one for the BLEU Processing Facility (BPF) itself. Following the preparation of Environmental Reports and Environmental Assessments, all three license amendments were found to have no significant environmental impacts by the NRC.

But after the 2006 HEU spill, enough fissile solution pooled at two locations on the plant floor to have caused criticality accidents, and no controls were in place to prevent accumulation of a critical level of HEU at either collection point. As a result, NFS was cited for these violations:

- > Failure to verify proper installation of the tray dissolver filter enclosure drains prior to use of the system with fissile material (APV 70-143/2006-006-02);

- > Failure to meet the performance requirements of 10CFR70.61(d) for accident sequences related to handling fissile material in the tray dissolver system (APV 70-143/2006-006-03);

- > Failure to meet the performance requirements of 10CFR70.61(d) for accident sequences related to fissile solution accumulation on the solvent extraction room floor (APV 70-143/2006-006-04);

> Failure to assume in NCS analysis for the tray dissolver system that fissile solution could be misdirected from the solvent extraction feed transfer line (APV 70-143/2006-006-05).

The root causes of the spill of uranyl nitrate solution included inadequate configuration control, change analysis and design requirements. More specifically, the configuration control program lacked requirements to ensure that unapproved systems were isolated from operational systems, and that configuration changes, such as not implementing the operational requirements (e.g., procedures, IROFS) of a system, received a safety review (APV 70-143/2006-006-06). Design requirements also lacked criteria to prevent misdirected flow.

These are extremely serious Quality Assurance problems that NFS misrepresented to the NRC Staff in its generalization about 20 years of “safe” operations.

ECAN’s quality contention is really about NFS as a serial violator of even the most basic requirements for safety and security. Despite insistences by the NRC Staff and NFS that ECAN is impermissibly challenging a regulation, the ASLB should admit Contention D for adjudication. The question should be whether a facility that under other circumstances would be required by DOE regulations to have a process Quality Assurance program should, based upon serious past violations, be disqualified from receiving a license to pursue a quality-deficient, inherently dangerous radiological process.

Respectfully,

December 2, 2022

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CERTIFICATE OF SERVICE

I hereby certify that on December 2, 2022 I deposited a copy of the foregoing
COMBINED REPLY IN SUPPORT OF PETITION FOR LEAVE TO INTERVENE in the
Nuclear Regulatory Commission's EIE system for managing its adjudicatory docket, and that by
its protocols it was to serve all counsel, parties and NRC officers and staff registered to receive
digital docket filings.

December 2, 2022

/s/ Terry J. Lodge
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