

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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Nils J. Diaz, Chairman
Edward McGaffigan, Jr.
Jeffrey S. Merrifield

_____)
In the Matter of)
)
PRIVATE FUEL STORAGE L.L.C.) Docket No. 72-22-ISFSI
)
(Independent Spent Fuel)
Storage Installation))
_____)

CLI-04-22

MEMORANDUM AND ORDER

Today we again consider issues arising out of the proposal of Private Fuel Storage, L.L.C. to build a spent fuel storage facility on Goshute tribal land in Utah. The State of Utah opposes the facility and is before us to argue in favor of admitting for hearing certain contentions that the Licensing Board rejected.

By a February 5, 2004 order,¹ we granted review under 10 C.F.R. § 2.786 of the Board's decision not to admit for adjudication three of Utah's proposed contentions relating to two issues. Both issues concern proposed contentions under the National Environmental Policy Act (NEPA).² One arises out of Utah's claim that PFS's environmental report (ER) failed to address consequences of not having a "hot cell" or means to enable it to open a canister. The other calls

¹ *Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Facility)*, CLI-04-04, 59 NRC 31 (2004).

² 42 U.S.C. §4321 *et seq.*

into question the accuracy of the NRC staff's "cost-benefit analysis" of the proposed project.

The disputed contentions are known as "Utah U," "Utah CC," and "Utah SS."

On close analysis of the proposed contentions and all the evidence submitted to support them, we conclude that the Board was correct in refusing to admit them for further consideration. Therefore, we affirm the Board's decisions.

I. DISCUSSION

A. Legal Standards Concerning Admissibility of Contentions and NEPA Considerations

The NRC strictly limits the contentions that may be raised in licensing adjudications so that individual licensing adjudications are limited to deciding "genuine, substantive safety and environmental issues placed in contention by qualified intervenors."³ To begin with, the subject of the contention must be appropriate for adjudication in an individual licensing proceeding. No contention is admitted for adjudication if it attacks applicable statutory requirements or Commission regulations, if it raises issues that are not applicable to the facility in question, or it raises a question that is not concrete or litigable.⁴ In addition, a party wanting to raise a contention in an adjudicatory hearing must meet strict pleading standards by providing:

- (i) A brief explanation of the bases of the contention.
- (ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
- (iii) Sufficient information ... to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portion of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner

³*Duke Energy Corp.* (Oconee Nuclear Station, Units 1,2, and 3), CLI-99-11, 49 NRC 328, 334 (1999), *quoting* H.R. Rep. No. 97-177, at 151 (1981).

⁴*See Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21(1974). *See also Oconee*, 49 NRC at 334 (contention attacking generic NRC regulations or policies is not admissible).

believes that the application fails to contain information on a relevant matter, as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report. The petitioner can amend those contentions or file new contentions if there are data or conclusions in the NRC draft or final environmental impact statement, environmental assessment, or any supplements relating thereto, that differ significantly from the data or conclusions in the applicant's document.⁵

Requiring the substance and presentation of contentions to be concrete and specific to the license application helps ensure that individual license applicants are not put into the position of defending the policies and decisions of the Commission itself. It also precludes an intervenor from making general allegations, with the hope of generating through discovery sufficient facts to show there is a genuine dispute.⁶

Our contention pleading rule requires a petitioner to file NEPA contentions on the applicant's ER so that environmental issues are raised as soon as possible in the proceeding. The requirement that a petitioner raise NEPA contentions in response to the ER gives the staff the opportunity to request additional information from the applicant and work to resolve any deficiencies as the staff develops its own Environmental Impact Statement. If the EIS addresses the concerns alleged in the contention, the original contention becomes moot and the intervenor must raise a new contention if it claims the EIS discussion is still inaccurate or incomplete.⁷

Here, Utah's Contention U, basis 2, and Utah's Contention CC claimed deficiencies in PFS's ER. The Board rejected these contentions in its original ruling on contentions in 1998. Utah Contention SS attacked the cost/benefit analysis in the staff's FEIS. The Board declined to

⁵10 C.F.R. § 2.714(b)(2) (as in effect prior to February 13, 2004). Rules of procedures for proceedings initiated prior to February 13 are not affected by our recent revisions to 10 C.F.R. Part 2.

⁶See *Oconee*, 49 NRC at 335.

⁷*Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373 (2002).

admit Utah SS, deciding that the FEIS contained sufficient information to satisfy NEPA's requirements.⁸

B. Utah U, Basis 2 (Inability to Inspect and Repair Canisters)

According to Utah Contention U, PFS's ER violated NRC regulations⁹ and NEPA by failing to include a full discussion of the environmental impacts of the PFS facility. As bases for this claim, Utah U listed various impacts allegedly not considered. Basis 2 argued that the ER did not discuss impacts associated with PFS's purported inability to inspect and repair the contents of spent fuel canisters, or to detect and remove contamination from canisters.¹⁰

In ruling on this contention, the Board incorporated by reference the arguments made by the parties in their pleadings and during a January 29, 1998, pre-hearing conference.¹¹ The Board rejected basis 2 (and other bases as well) because it "fail[ed] to establish with specificity any genuine dispute; impermissibly challenge[d] the Commission's regulations or rulemaking-associated generic determinations, including those involving canister inspection and repair and transportation sabotage; lack[ed] adequate factual or expert opinion support; and/or fail[ed] properly to challenge the PFS application."¹²

The Commission accepted review because the Board's description did not make it entirely clear which bases failed to meet which criterion or criteria for admissibility. But if our review shows that basis 2 was deficient in any of the respects listed by the Board, we can

⁸Tr. 9210-17 (May 17, 2002).

⁹10 C.F.R. § 51.45(c).

¹⁰See State of Utah's Contentions on the Construction and Operating License Application by Private Fuel Storage, L.L.C. for an Independent Spent Fuel Storage Facility (Nov. 23, 1997), at 142.

¹¹LBP-98-7, 47 NRC 142, 199 (1998).

¹²*Id.* See generally 10 C.F.R. § 2.714(b) (setting out standard for admissible contentions).

conclude that the Board correctly rejected it.¹³ In addition, if the issues raised by basis 2 were resolved by the staff's Final Environmental Impact Statement (FEIS), then they are now moot.¹⁴

Utah U, basis 2, pointed to another contention, Contention Utah J, and argued that the ER ought to have discussed the lack of a means to repair defective or leaking canisters:

The ER fails to consider the safety risks and costs raised by PFS's failure to provide adequate means for inspecting and repairing the contents of spent fuel canisters, or for detecting and removing contamination on the canisters. These include risks to workers posed by handling or inspecting casks with contaminated or defective contents, during receipt of casks, storage of casks, or in preparing them for shipment to a repository. They also include health risks and increased costs during the decommissioning process. See Contention J (Inadequate Inspection and Maintenance of Safety Components, Including Canisters and Cladding), whose basis is adopted and incorporated herein by reference.¹⁵

Contention Utah J, in turn, alleged that "[t]he design of the proposed ISFSI fails to satisfy 10 C.F.R. §§72.122(f) and 72.128(a), and poses undue risk to the public health and safety, because it lacks a hot cell or other facility for opening casks and inspecting the condition of spent fuel."¹⁶

In the same decision that we accepted Utah's NEPA issue for review, we rejected Utah's safety argument (Contention Utah J) that PFS must have a "hot cell" that would allow it to open canisters for inspection or repair.¹⁷ We found that Utah's approach would exceed the requirements of our regulations and therefore amounted to an impermissible collateral attack on the regulations.¹⁸ We noted, however, that the fact that our safety regulations do not require a

¹³*Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Unit 2), CLI-91-12, 34 NRC 149, 155 (1991).

¹⁴*McGuire & Catawba Nuclear Stations*, CLI-02-28, 56 NRC at 382.

¹⁵See Utah's Contentions at 142.

¹⁶Utah's Contentions at 63.

¹⁷CLI-04-4, 59 NRC at 39.

¹⁸*Id.*

measure does not necessarily mean there will be no environmental consequences that must be discussed in an environmental impact statement.

The portions of Contention Utah J's bases that would possibly relate to NEPA (and Contention U, basis 2) are its allegations that "[a] hot cell is needed to protect workers and the public against undue risks caused by the handling of spent fuel."¹⁹ Contention J also said that the hot cell was needed because fuel could be improperly loaded into a canister, and gave 2 examples where this allegedly had happened.²⁰

Utah U, basis 2 can be broken down into three allegations. First, according to Utah U, PFS's ER should address the consequences of not being able to open the canisters in order to inspect and repair their contents (that is, the fuel rods), which in turn would require a "hot cell" (a facility capable of transferring fuel out of a canister).²¹ Second, Utah U says that the ER should discuss the consequences of PFS's inability to detect and remove contamination that may be on the outside of a canister as a result of the fuel loading process. Finally, Utah U would have the ER consider the risks to workers of handling *casks* with defective contents, which would include a defective canister as well as damaged fuel rods.

PFS plans to completely seal spent fuel inside a canister that is never opened from the time it leaves the power plant until it is deposited into a permanent repository, although that canister is transferred into different casks for loading, shipping, and storage. During typical fuel

¹⁹Utah's Contentions at 63.

²⁰*Id.* at 67.

²¹The NRC staff and PFS both mischaracterize this aspect of basis 2. They argue that Utah U wanted a discussion of the environmental consequences of having a hot cell. See "Applicant's Response to State of Utah's Brief on Commission Review of Contentions Utah U Basis 2 and Utah CC and Utah SS," (March 18, 2004), at 6-7; "NRC Staff's Brief in Response to 'State of Utah's Brief on the Commission's Review of Contentions Utah U Basis 2, Utah CC and Utah SS'" (March 18, 2004), at 14-15. Although Utah argued that the regulations should be interpreted to require a "hot cell" as a means to allow such inspection and repair, basis 2 clearly demanded a discussion of the environmental consequences of not having a hot cell.

loading operations at the power plant of origin, the canister is placed inside a transfer cask and both are lowered into the spent fuel pool.²² While the fuel is being loaded, contaminated water is kept out of the space between the canister and the transfer cask either by sealing the space at the top or by forcing clean water into the cask from the bottom so that it overflows the top.²³ This helps prevent the outside of the canister from being contaminated. After loading, the lid of the canister is placed on top and the transfer cask and canister removed from the pool.²⁴ The canister lid and a redundant “closure lid” are welded to the canister, which is then drained, dried, and filled with helium. The drain and fill ports are then welded shut, sealing the canister.²⁵ The sealed canister is then loaded from the transfer cask into a shipping cask and the shipping cask closure is bolted in place.²⁶ Finally, the canister and shipping cask are then loaded onto the shipment vehicle for rail shipment to the PFS facility.²⁷

At the PFS facility, the canister is transferred from the shipping cask into a transfer cask, and from a transfer cask to a storage cask, inside a canister transfer building.²⁸ The canister transfer building’s reinforced-concrete walls are designed to withstand tornado-driven missiles and “provide substantial shielding from gamma and neutron radiation.”²⁹ During the transfer,

²²See SAR, Ch. 5, 5.1-2 to 5.1-3.

²³*Id.*, see also SAR, 8.1-16 to 8.1-17.

²⁴SAR at 5.1-2 to 5.1-3.

²⁵*Id.*

²⁶*Id.* at 5.1-3.

²⁷*Id.*

²⁸See *id.* at 5.1-4 to 5.1-5.

²⁹*Id.* at 7.1-7.

temporary shielding is used to ensure that doses to workers are as low as reasonably achievable (ALARA).³⁰ The storage cask is then moved to the outside storage pad.

According to PFS, this “start clean/stay clean” plan makes opening a canister both unnecessary and undesirable.

With this background in mind we turn to Utah’s specific grievances.

1. Utah Failed to Support Alleged Need to Inspect Fuel.

Utah U, basis 2 included an allegation that the ER failed to address the consequences of not being able to open and inspect, and repair, the contents of the canisters. Utah argued that the fuel rods could become damaged or degraded--for example, by improper loading.

NRC regulations do not require that canisters stored in an ISFSI be opened so that their contents may be inspected or repaired. In setting the requirements for inspections at ISFSIs, the Commission concluded that such an inspection would be unnecessary.³¹ The Commission determined at that time that once the fuel is loaded and sealed into the canister, the canister would adequately contain any radionuclides, and the fuel cladding was no longer a structure important to safety.³² In effect, the Commission has generically determined that not inspecting the contents of the canisters, even if those contents were damaged or degraded, would have no environmental consequences. Similarly, the Commission has determined that it is unnecessary to inspect a double-seal welded canister for leaks and corrosion developing from the inside.³³

³⁰*Id.*

³¹ See CLI-04-04, 59 NRC at 39 (the fuel cladding is no longer a structure or system important to safety once sealed in a canister). See *also* Proposed Rule Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High Level Radioactive Waste, 51 Fed. Reg. 19,106 (1986) “[F]or storage of spent fuel the cladding need not be maintained if additional confinement is provided ... the canister could act as a replacement for the cladding.” *Id.* at 19,108.

³²*Id.*

³³59 Fed. Reg. 65,898; 65,901.

Utah did not present any factual support with its contention purporting to show that the agency's generic determinations were faulty, or that opening the canister to inspect the condition of the fuel rods would be at all beneficial.

Utah, in short, has not adequately alleged –that is, with factual or expert support³⁴–that the ER, and later the FEIS, unreasonably failed to discuss the “consequences” of not opening the canisters to inspect the fuel. The Commission has already determined generically that there will be no significant environmental consequences, even if the fuel inside the canister were damaged.³⁵ In order to attack the factual determinations underpinning a regulation in a NEPA context, Utah would have to present specific, fact-based claims to the contrary, not mere allegations. “[O]ur contention rule is strict by design. It ... insists upon some reasonably specific factual or legal basis for a petitioner’s allegations.”³⁶ The Board could therefore properly conclude that this allegation lacked factual and expert support.

2. The ER Did Not Overlook Surface Contamination on Canisters

Utah’s petition also argued that the ER should discuss the consequences of PFS’s inability to detect and remove contamination on the outside of a canister, which Utah again argued cannot be done without a “hot cell.”

³⁴See 10 C.F.R. §2.714(b).

³⁵See “Proposed Rule Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High Level Radioactive Waste, 51 Fed. Reg. 19,106, 19,108 (May 27, 1986). See also “Environmental Assessment for 10 C.F.R. Part 72 ‘Licensing Requirements for the Independent Storage of Spent Fuel and High-Level Radioactive Waste,’” NUREG-1092 (1984), at II-27 -30 (Rule change from one requiring maintenance of cladding to one allowing alternate design that otherwise confines fuel in case of cladding degradation “protect[s] the public and limit[s] the impact that an ISFSI constructed to these criteria would have on the site ecology to a level commensurate with existing ISFSI design requirements.” *Id.* at II-27).

³⁶*Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003) (internal quotation marks omitted).

Although the steps described above are designed to prevent it, the outside of a canister could become contaminated by spent fuel pool water during the loading process. Although the nuclear plant operator loading the canister is supposed to detect and remove contamination, Utah points out that PFS has no control over whether it does so.

But, as PFS's response to contentions pointed out, PFS's ER and its safety analysis report contained calculations of doses to offsite individuals and to workers should contamination be released from the surface of the canister.³⁷ The ER referenced the results from the SAR of the entire range of postulated accidents, and concluded that the potential radiological impact from accidents, including the release of surface contamination from a canister, was negligible.

According to the SAR, even if the entire surface of the canister were contaminated to the level of $1E-4 \mu\text{ci}/\text{cm}^2$, and some event were to release all the contamination into the atmosphere at once, the estimated dose to an individual located at the boundary of the facility would be a committed effective dose equivalent of $4.4 E-3$ mrem and a committed dose equivalent to the lungs of $2.6 E-2$ mrem³⁸-- well below regulatory limits.³⁹ The SAR also calculated doses to a hypothetical worker. The SAR further pointed out that these calculations should be considered very conservative for the reasons: (1) processes at the facility loading the fuel should keep the canister from becoming contaminated, and any detected contamination should be removed as part of the loading process; (2) PFS will test accessible canister surfaces (the lid and side several inches below the top) for removable contamination and return any canisters showing excessive levels to their place of origin; and (3) assumptions that the entire surface area would

³⁷ See Applicant's Answer to Petitioners' Contentions, 287 (Dec. 24, 1997), Applicant's ER at 5.1, and SAR at 8.1-16 to -18.

³⁸ SAR 8.1-18.

³⁹ See 10 C.F.R. § 72.106.

be contaminated to the posited level and that 100 percent could be released are also conservative.⁴⁰

PFS concluded on the basis of its calculations that there would be no significant environmental consequences from the release of surface contamination even in a worst-case scenario. Therefore, PFS's analysis showed that there would be no significant environmental consequences to not having a hot cell in which to remove surface contamination from canisters.

We do not have to re-evaluate in our decision today whether PFS's calculations were correct. The assertion in Utah U, basis 2 that the ER did not even consider the "safety risks and costs" associated with potential releases of surface contamination from the canister is simply inaccurate. The analyses were in the ER and SAR, but Utah's contention did not address them. Therefore, the Board properly concluded that this portion of Utah Contention U, basis 2, failed to attack the application.

We should add that the FEIS also addressed the potential release of contamination from the outside of the canister.⁴¹ In its section discussing estimated doses to workers from off-normal operations and accidents, the FEIS found that PFS's analysis in its SAR was conservative and found that the radiological consequences of an accident releasing surface contamination is negligible.⁴²

The FEIS therefore did address the safety costs and risks of not having a means of decontaminating the outside of a canister—it simply found that these risks were small. If Utah disputed the FEIS's calculations concerning the potential for release of contamination from the

⁴⁰SAR 8.1-18.

⁴¹See FEIS, 4-44 to 4-53.

⁴²See *id.*, at 4-51.

surface of the canister, the time to raise that contention would be after the release of the FEIS, at the latest.⁴³

3. The ER Did Not Fail to Address Contamination From a Defective Canister

Finally, Utah's Contention U, read broadly, embraced potential environmental harm from defective or defectively sealed canisters.⁴⁴

a. Damage En Route or at the Site Is Not a Credible Scenario

Although the general language of Utah U, basis 2 could embrace a situation where a canister becomes damaged after leaving the power plant that loaded it, we need not consider that situation further. A defective canister would have to either leave the nuclear power plant that way or become damaged en route or at the PFS site. But the Commission has determined generically that accidental canister breach is not a credible scenario.⁴⁵ The PFS SAR shows that canister stresses from potential handling accidents would be bounded by the canister drop accident analyzed in the HI-STORM FSAR.⁴⁶ The SAR, ER and later, FEIS, all examined

⁴³See *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 & 2), CLI-02-28, 56 NRC 373, 382 (2002). In this case, because Utah did not raise any flaws in the calculations in the ER, it may well have been too late to file a contention attacking essentially the same calculations in the FEIS. See *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 251 (1993), *petition for review and motion for directed certification denied*, CLI-94-2, 39 NRC 91 (1994). But we do not need to resolve that question here.

⁴⁴As Utah put it, "casks with defective contents." Logically, the "defective contents" of casks would embrace defective canisters or defective fuel rods, but we have already considered defective fuel rods.

⁴⁵See 60 Fed. Reg. 32,430, 32,438 (1995) ("Furthermore, the NRC has conducted Safety Evaluations on many different storage systems. Those studies included evaluations of the effects of corrosion, handling accidents such as cask drops and tipovers, explosions, fires, floods, earthquakes, and severe weather conditions. As documented in each of those Safety Evaluation Reports, NRC was not able to identify any design basis accident that would result in failure of a confinement boundary").

⁴⁶PFS SAR at §8.1.4. See Final Safety Analysis for the Holtec International Storage and Transfer Operation Reinforced Module Cask System (HI-STORM 100 Cask System), Docket 72-1014, ML020670717.

potential accidents that could occur in transit or on site and concluded that breach of the canister was not credible.⁴⁷ Utah raised an admissible issue concerning the seismic design of the storage casks PFS plans to use at its facility, but the Board held hearings and concluded that “anticipated earthquake phenomena will not impair their capability to perform their intended functions.”⁴⁸ Utah has not put forth any previously unconsidered accident scenario that could result in a canister becoming damaged and beginning to leak. Therefore, insofar as Utah’s contention U attempted to raise the issue of contamination released from a canister or cask damaged on site or in transit the Board could properly find that the contention lacked factual support and failed to properly challenge the application.

b. Utah Did Not Show How a Defective Canister Could Harm the Environment at PFS’s Facility

Utah also raised in its contentions the specter that a defective canister, improperly constructed or improperly sealed, could be loaded and shipped to PFS.⁴⁹ Utah’s contention

⁴⁷ See, e.g., SAR §8.2, ER at 5.1-2 to 5.1-6; FEIS at 4-49 to -53.

⁴⁸ LBP-03-08, 57 NRC 293, 544 (2003), *review denied*, CLI-03-08, 58 NRC 11 (2003).

⁴⁹ Utah Contentions at 68. In support of this, it gave an example of an instance where fuel allegedly was loaded into a “defective cask” at a nuclear plant and the mistake not discovered for two years. Although Utah claimed in its Contentions that fuel was loaded into a defective cask at a nuclear plant, the inspection report it cites, Docket No. 72-1007/92-01, does not describe an incident where fuel was loaded into a defective cask. The cited inspection report found incidents of nonconformance with the quality assurance program at a dry storage cask manufacturing plant. The inspection “found that the implementation of [Pacific Sierra Nuclear Associates’] Quality Assurance program was satisfactory, in general.” *Id.* Thus, Utah did not support its claim that fuel was loaded into a “defective cask” at any nuclear power plant.

Utah also suggested that a cask had been improperly loaded at a power plant in 1981, when a worker had incorrectly filled a cask with water rather than helium. *Id.* Utah says that the same error is “possible with the Transtor cask because the drain and vent ports look alike.” Apart from the other reasons for the insufficiency of Utah’s contention, we do not find that Utah provides sufficient factual or expert support to show a material issue by the bare statements about an alleged incident, two decades ago, involving a different facility, different plan and different cask.

encompasses the safety risks and costs of this type of incident. Utah claims that it would be unsafe to ship a defective canister back to its place of origin, as PFS proposes to do.

PFS countered Utah's contention by pointing out that it planned to ship back any cask that showed an unacceptable level of contamination on arrival at the PFS site.⁵⁰ Because of PFS's plan to return casks to their point of origin upon receipt if they show unacceptable contamination, and because no credible scenario would breach a canister assuming it arrives intact, the only possible problem would arise if a canister arrived at PFS's door in a condition of such extreme contamination that it could not be returned through interstate commerce.

PFS argues that Utah did not show there is a genuine dispute about environmental consequences of defective canisters. First, PFS maintains that the quality assurance procedures at the nuclear power plant shipping the fuel would make it highly improbable that a seriously contaminated canister or cask would arrive at PFS's door. PFS argues that Utah must present a reasonable scenario where these quality assurance measures are defeated, making it necessary for PFS to deal with a dangerously contaminated cask or canister onsite. Second, PFS argues that Utah did not support its allegation that PFS's plan to return any canister found to be contaminated would be dangerous. The shipping cask itself, according to PFS, will act as sufficient containment for the return trip.⁵¹ Moreover, PFS points out that the NRC-approved quality assurance programs at the nuclear reactors that will be generating and packing the fuel would minimize the possibility that any defective canister will arrive at PFS's door.⁵²

We agree with PFS. Utah's proposed Contention U, basis 2, did not address these quality assurance measures, or explain why they are inadequate, except to point out that PFS

⁵⁰See PFS Answer to Contentions at 143-145. See also PFS SAR at 7.2-11.

⁵¹See PFS Brief at 10.

⁵²See PFS Brief at 10, PFS Answer to Contentions at 143-145.

does not control those measures and cannot therefore offer assurances that they will be carried out. Although PFS does not control the quality assurance measures at the shippers' facilities, and should not merely assume that the shipper could not make a mistake, it is still up to Utah to frame a contention plausibly showing that mistakes at a shipper's site will cause environmental consequences at PFS's site. Other than its bald assertion that shipping such a canister back through interstate commerce "is not safe," Utah offers no factual or expert support for its attack on PFS's plan. PFS's loading, shipping and storage procedures show that the canister is never to be without a protective transfer, shipping or storage cask at any point in time. To show a genuine material dispute, Utah's contention would have to give the Board reason to believe that contamination from a defective canister could find its way outside of the cask.⁵³

While we do not expect an petitioner to prove its contention at the pleading stage, we do require that it show a genuine dispute warranting a hearing. Here, the bases of Utah's contention did no more than point out that *if* somehow there was a need to open a canister or remove its contents, PFS could not do so at its storage facility. This was not enough to suggest that there were undiscussed NEPA "consequences" to the storage facility; nor was it enough to raise a litigable contention in the proceedings below. We find that the Board could properly conclude that the contention lacked factual support and expert opinion to back it, and failed to show that there existed a genuine issue of material fact. Utah failed to allege, with expert and technical backing, how a canister could become so contaminated that it would be harmful to workers at the PFS site or be too dangerous to ship through interstate commerce, given the shippers' quality assurance procedures.

⁵³Additionally, Utah's assertion that shipping the canister back inside the approved transportation casks is not safe can be seen as an impermissible attack on NRC regulations and rulemaking-related generic determinations that the transportation cask is sufficient to prevent the leakage of any radioactive material. See 31 Fed. Reg. 9,941 ("Packaging of Radioactive Material for Transport-Final Rule") (July 22, 1966).

We also find that the FEIS took a sufficiently hard look at whether there could be any adverse environmental consequences to PFS's inability to repair a defective or defectively sealed canister. In the FEIS, the staff eventually agreed that the HI-STAR 100 transportation cask would prevent package leaks beyond allowable levels during transportation, and that PFS's plan offers assurance that there will be no significant environmental consequences.⁵⁴ Because of the various precautions taken to ensure that no defective or defectively sealed canister will be shipped to PFS, it is highly unlikely that any such canister would ever arrive at the PFS site. It is even less likely that any canister in a condition too dangerous to be shipped back sealed in a shipping cask would ever arrive at the PFS facility. Further litigation on the point will not add significantly to what we know already. NEPA is, after all, governed by a "rule of reason," which frees the agency from pursuing unnecessary or fruitless inquiries.⁵⁵

4. Matters Raised for the First Time on Appeal

Utah raised a number of factors not raised before the Board when Utah U, basis 2 was presented. Among them are the supposed difficulty in fitting lids on the HI-STORM cask and "problems with the performance of certain Certificate of Compliance (CoC) holders ... in packaging and transporting radioactive material."⁵⁶ Ordinarily, the Commission will not consider on appeal either new arguments or new evidence supporting the contention, which the Board never had the opportunity to consider.⁵⁷ None of Utah's new arguments are sufficiently compelling to warrant breaking with that ordinary practice.

⁵⁴See FEIS at 2-19, 2-22.

⁵⁵See *Department of Transportation v. Public Citizen*, 124 S.Ct. 2204 (June 7, 2004), 2004 WL 1237361.

⁵⁶Utah Br. at 7, n.8 (*citing* 69 Fed. Reg. 385-86 (Jan. 5, 2004)).

⁵⁷*Hydro Resources, Inc.* (2929 Coors Road, Suite 101 Albuquerque, NM 87120), CLI-00-8, 51 NRC 227, 243 (2000); *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 260 & n. 19 (1996).

C. Contentions Utah CC and SS (Cost-Benefit Analysis)

In Contentions CC and SS, Utah challenged cost-benefit analyses performed on this project. We accepted review of the admissibility of CC and SS “[b]ecause NEPA cost/benefit questions have proved troublesome in the past, as for example in the *Claiborne* case,⁵⁸ because the record would benefit from a written decision on these issues, and because the context of the question here is unusual.”⁵⁹

1. Utah CC

Utah CC challenged the cost-benefit analysis in the ER as failing to “balance the costs and benefits of the project, or to quantify factors that are amenable to quantification,” including the costs of various alleged adverse environmental impacts, the benefits of “alternatives that could reduce or mitigate accidents, environmental contamination, and decommissioning costs,” and failing to quantify costs related to decontamination and decommissioning. Among the costs Utah said could be quantified were the costs of visual impacts, in terms of reduced tourist dollars; the costs of accidents, in terms of health care costs to individuals; and the costs of emergency response.

The Board found Utah CC inadmissible for failure to establish a genuine dispute, failure to provide adequate factual support, and failure to properly challenge the PFS application.⁶⁰ We agree with the Board that Utah did not back its charge that various costs were capable of quantification with facts and expert opinion showing how to do so. This was a sufficient basis for the Board to conclude that the state had not shown with specificity that a material dispute existed.

⁵⁸See CLI-98-3, 47 NRC at 87-100. See also, e.g., *Hydro Resources, Inc.*, CLI-01-4, 53 NRC 31, 48-51 (2001).

⁵⁹CLI-04-04, 59 NRC at 43.

⁶⁰LBP-98-7, 47 NRC at 204.

At any rate, Utah has not reiterated its arguments with respect to the original bases in Utah CC, and instead focused its arguments on factors relating to Utah SS.

2. Utah SS

Utah offered late-filed Contention SS in response to the FEIS. Contention Utah SS claimed that the FEIS was flawed in three respects: it wrongly assumed that fuel could be stored on the site beyond the 20-year period of the initial license, it found an unrealistic “break-even” point (the point at which the storage costs saved would equal the cost of building and operating the project), and assumed an unrealistic start of operations date. The Board held a three-hour hearing to consider the parties’ arguments, and ultimately rejected SS in a ruling from the bench.⁶¹ The Board held that the cost-benefit analysis in the FEIS contained enough information to allow the public to draw its own conclusions about the benefits of the project, and that, therefore, there was no relief available to Utah.

a. Assumptions in the FEIS’s Cost-Benefit Analysis

The cost-benefit analysis in Chapter Eight of the FEIS considered benefits and costs from “a societal prospective, as opposed to the perspective of any particular individual or company.”⁶² In other words, the cost-benefit analysis was not an examination of the potential profitability of PFS’s operation. The profitability of the project from PFS’s standpoint is relevant to this licensing proceeding only insofar as it relates to PFS’s financial ability to take care of the facility. (Financial assurance is considered separately in this proceeding.⁶³) Rather than PFS’s profitability, the FEIS’s cost-benefit analysis looked primarily at storage costs saved by PFS’s

⁶¹Tr. 9210-17 (May 17, 2002).

⁶²FEIS at 8-1.

⁶³The Board found that PFS had provided reasonable assurance that it can finance operations and decommissioning in four as-yet unpublished decisions, which are currently under Commission review.

customers as the principal societal economic benefit. The cost-benefit analysis of Chapter Eight examined economic costs and benefits separately from environmental costs and benefits.

The tangible economic benefits would be realized by the reactors that would avoid at-reactor storage costs. The FEIS showed that the costs avoided varied according to whether the reactors using the PFS facility were operational or shut down, and whether they would store spent fuel in pools or dry casks.⁶⁴

The FEIS assumed that the PFS facility would receive fuel for 20 years.⁶⁵ A 20-year receipt period was deemed a more conservative assumption than a 40-year receipt period (possible if PFS renews its 20-year license) because the costs per year of operation would be higher.⁶⁶

In its analysis,⁶⁷ the NRC staff considered a range of different outcomes using three variables: the total throughput⁶⁸ of fuel, the opening date for a permanent repository, and the discount rate.⁶⁹ Reasoning that financial assurance-related license conditions would preclude PFS from operating unless it had contracts for a certain minimum throughput, the staff calculated net benefits using a “medium throughput” figure and a “maximum throughput” figure.⁷⁰ Assuming PFS would open for business in 2003, the staff calculated net benefits based on

⁶⁴FEIS at 8-9 through 8-11.

⁶⁵*Id.* at 8-1.

⁶⁶*Id.*

⁶⁷The staff’s analysis was based largely on the information submitted by PFS in its ER, which was then supplemented in response to staff requests for additional information. See FEIS at 8-1 to 8-2.

⁶⁸“Throughput” is the total amount of fuel that is ever received for storage at the PFS site, and throughput therefore could exceed the amount of fuel that can be stored at one time.

⁶⁹*Id.* at 8-11.

⁷⁰*Id.* at 8-2.

possible dates for the availability of a permanent repository. The staff selected 2010, which is the earliest possible repository opening date, and 2015, which staff considered a realistic date.⁷¹ It then took the net benefit estimates and applied a low-end discount rate of 3.8 percent and high-end discount rate of 7.⁷²

The staff determined that throughput was the most critical factor in determining whether the facility would have a net positive benefit:

From an economic prospective, the net benefit of the proposed PFSF is directly proportional to the quantity of SNF shipped to the facility. The scenarios evaluated by the staff indicate the potential for a net positive benefit past the break-even throughput volume of SNF. As the SNF throughput decreases, the economic benefit decreases. The net economic benefits of the proposed PFSF are sensitive to several factors that are inherently uncertain. An analysis of the sensitivity of the benefits to critical cost assumptions indicates the possibility of considerable variation in outcome. Notwithstanding the sensitivity of the benefits to these factors, cases in which the proposed PFSF has a capacity of 10,000 [metric tons of uranium (MTU)] and a throughput of at least 15,500 MTU have a greater likelihood of positive net benefits.⁷³

The environmental cost-benefit analysis noted that there would be some “socioeconomic” benefits to the surrounding community due to factors such as tax payments and host payments to Tooele county, and that the negative impacts on the physical environment, including radiation doses to the public, are expected to be slight. There was no attempt to assign a monetary cost to the effects on the physical environment.

b. The 40-year Storage Question

Utah argues that the cost-benefit analysis in the FEIS is biased in favor of the project because it assumes a 40-year storage period for fuel when, in fact, it should only assume storage during the 20-year term of the license for which PFS is applying.

⁷¹*Id.* at 8-2.

⁷²*Id.* at 8-4 through 8-9.

⁷³*Id.* at 8-11.

The problem is illustrated by the maximum throughput scenario. An NRC license expires, if not renewed, at the end of its term, but the license is not terminated until the decommissioning is complete. PFS's license would allow it to receive fuel until the expiration of its license and it would not be required to remove fuel prior to the expiration of its license.⁷⁴ According to PFS, however, it can only handle a certain number of casks per year. At that handling rate, it would take the entire license term of 20 years simply to fill the facility to the maximum allowable capacity.⁷⁵ If PFS's license were not renewed, and assuming that PFS did not increase its handling capacity, it would take another 20 years to remove the fuel from the site. In practical effect, if PFS received the maximum throughput, some fuel could be stored onsite for up to 40 years even if PFS's license were not renewed.⁷⁶ The "medium throughput," estimated at 27,000 MTU, could also result in fuel remaining onsite beyond the license term.⁷⁷

Utah argued that PFS is required to reduce its inventory onsite such that all the fuel would be gone within a "reasonable decommissioning time" of two years. Utah's expert, Michael F. Sheehan, Ph.D., based the two-year decommissioning period on the response to a public comment in the FEIS, which stated that "under most circumstances," decommissioning is completed within 24 months of NRC approval of a decommissioning plan."⁷⁸ Such a limit to the

⁷⁴The FEIS points this out. See FEIS, at G-77.

⁷⁵Because PFS would not be ready to start receiving fuel the day its license begins, at the stated handling capacity, it could not receive 40,000 MTU in 20 years. The FEIS recognizes this and so uses 38,000 as the estimated maximum throughput.

⁷⁶The FEIS noted that "the storage (**but not receipt**) of SNF at the proposed PFSF after the 20-year license term is a possibility until decommissioning is completed." FEIS at 8-1 (Emphasis in original).

⁷⁷See *id.* at 8-7.

⁷⁸FEIS, Appendix G (Public Comments and Responses), at G-77. Although Utah did not bring it to our attention, our regulations at 10 C.F.R. §§72.54(j) and (k) provide that decommissioning must be completed within 24 months after the Commission approves a decommissioning plan, unless the Commission determines that another schedule is appropriate

decommissioning period would make the maximum and medium estimated throughputs impossible, because PFS could not accept those amounts of fuel before it had to start removing fuel again. This, in turn, would radically affect the cost-benefit analysis by reducing the possible net benefits considerably, according to Utah. (We note that the estimated “break-even” throughputs, however, could be theoretically both received and removed within a 20-year license term plus a two-year decommissioning time.⁷⁹)

c. Cost-Benefit Analyses Under NEPA

Several factors contributed to the Board’s ultimate decision that Utah was not entitled to relief under Contention Utah SS.⁸⁰ First, the Board stressed that the environmental harms against which NRC would weigh the benefits are slight.⁸¹ The FEIS concluded that the principal environmental impact is that the facility occupies land that could be used for other purposes.⁸² The Board pointed out that this impact will be to privately owned land, and the owners have agreed to it.⁸³ In addition, the Board recognized that, for the PFS facility’s proponents, the “real benefit of the project” is to act as an “insurance policy” in case the opening of the permanent, geologic repository suffers additional delays.⁸⁴ Therefore, the Board reasoned, the economic analysis in the FEIS, which presumes the permanent repository will open by 2015 at the latest,

under the circumstances. Technical infeasibility is grounds for an extension. See 10 C.F.R. §72.54(k)(1).

⁷⁹See *id.* at 8-10. The FEIS estimated that if a permanent geological repository opened in 2010, the breakeven throughput would be 15,500 MTU. If the geological repository opened in 2015, the breakeven throughput would be 18,000 MTU.

⁸⁰Tr. at 9214.

⁸¹*Id.*

⁸²FEIS at 8-11 through -12.

⁸³Tr. at 9214.

⁸⁴*Id.*

would not be the “central” consideration in the ultimate decision to approve or disapprove the project.⁸⁵

The Board acknowledged that the cost-benefit analysis in the FEIS would have to be reasonably accurate to comply with NEPA’s goal of informing the public. The Board concluded that given the above considerations, the FEIS was “accurate enough to inform the public ... [and] let the public draw its own conclusions” about the costs and benefits of the project.⁸⁶

On review, we ask not whether every assumption contained in the FEIS was the best or whether it will turn out true, but “whether the economic assumptions of the FEIS were so distorted as to impair fair consideration of those environmental consequences.”⁸⁷ Certainly, in some situations, the use of misleading economic assumptions in an EIS could thwart NEPA’s twin goals to inform the agency decisionmaker and the public-at-large. Overstated benefits could persuade an agency to approve a project despite significant adverse environmental impacts, while the EIS would also misinform the public.⁸⁸

At the heart of this matter is the extent to which NEPA, an environmental statute, asks us to perform economic analyses. “An agency’s primary duty under NEPA is to take a hard look at environmental impacts. ... Determinations of economic benefits and costs that are tangential to environmental consequences are within a wide range of agency discretion.”⁸⁹ As PFS and the NRC staff have emphasized, the issues raised by the state in Utah SS have nothing to do with

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Claiborne*, CLI-98-3, 47 NRC at 89, *citing Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 466 (4th Cir. 1996), and *South Louisiana Environmental Council, Inc. v. Sand*, 629 F.2d 1005, 1011 (5th Cir. 1980).

⁸⁸ *See, e.g., Hughes River Watershed Conservancy*, 81 F.3d at 446.

⁸⁹ *Louisiana Energy Services, L.P. (Claiborne Enrichment Center)*, CLI-98-3, 47 NRC 77, 88-89 (1998)(internal quotations and citation omitted) .

the project's environmental effects. The Board observed in ruling on Utah SS that a cost-benefit analysis might not even be required for this project because the environmental harms are slight.⁹⁰ That is, NEPA requires that the environmental harms be weighed against the overall benefits of a project, but where the environmental consequences are relatively insignificant, the benefits do not have to be great to justify allowing the project to go forward. Quibbling over the details of an economic analysis in this situation is, in the Board's words, "standing NEPA on its head" by asking that the license be rejected not due to environmental costs, but because the economic benefits are not as great as estimated in the FEIS.⁹¹

(1) COST-BENEFIT ANALYSIS WILL NOT SKEW AGENCY DECISION

We agree with the Board that there is no danger here that the NRC will be persuaded by bad information to approve a project that it otherwise would not. The Board was correct that the decision to license this project does not turn on PFS showing great economic benefits to society. The FEIS showed that this project will have minimal environmental impacts. It does not take great economic "benefits" to outweigh such minimal impacts. The Board aptly observed that the cost-benefit analysis would not be "central" to the ultimate decision. In comparing the alternatives, the FEIS concluded that a variety of benefits outweigh the minimal costs:

overall benefits of the proposed PSFS outweigh the disadvantages and costs based on a consideration of:

- ! the need for an alternative to at-reactor SNF storage that provides a consolidated, and for some reactor licensees, economical storage capacity for SNF from U.S. power generating reactors;
- ! the minimal radiological impacts and risks from transporting, transferring, and storing the proposed quantities of SNF canisters and casks;
- ! the economic benefits that would accrue to the Skull Valley Band during the life of the project; and

⁹⁰ Tr. at 9213-14.

⁹¹ May 10, 2002 hearing, tr. at 36.

! the absence of significant conflicts with existing resource management plans or land use plans within Skull Valley.⁹²

This statement in the FEIS belies any suggestion that the NRC staff looked solely at the economic benefits--that is, the industry's storage costs saved--in determining whether this project should be approved.

The FEIS appropriately gave PFS's (and its members') goal of providing an offsite storage alternative great weight. In considering alternatives under NEPA, an agency must "take into account the needs and goals of the parties involved in the application."⁹³ We see no reason why this consideration would not include the unquantified value of having an "insurance policy" against the late opening of a permanent geological repository. We agree with the Board that there is no reason to assume that the cost-benefit analysis in the FEIS would improperly influence this agency to approve a project that would otherwise be rejected due to environmental concerns.

(2) THE EIS DID NOT MISINFORM THE PUBLIC

The second function of the NEPA cost-benefit analysis is to ensure that the FEIS does not mislead the public as to the economic benefits of the proposed storage facility. Here the FEIS--combined with our discussion in today's decision--painted a reasonably accurate picture of the economic aspects of the proposed PFS project. Below, we deal briefly with the concerns Utah raises.

(a) Waste Confidence Regulations Do Not Govern Analysis

⁹²FEIS at 9-16.

⁹³*Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190,199 (D.C. Cir. 1991), *citing Louisiana Wildlife Federation v. York*, 751 F.2d 1044, 1048 (5th Cir. 1985)("Indeed, it would be bizarre if the Corps were to ignore the purpose for which the applicant seeks a permit and substitute a purpose it deems more suitable").

Utah relies on a regulatory provision found at 10 C.F.R. §51.97(a) stating that “[u]nless otherwise determined by the Commission, and in accordance with the generic determination in §51.23(a) and the provisions in §51.23(b), [an FEIS for an ISFSI] ... will address environmental impacts of spent fuel storage only for the term of the license ... applied for.” The cross-referenced rule—section 51.23—reflects the Commission’s so-called “Waste Confidence” determination. It provides:

(a) The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century,”

(b) Accordingly, as provided in ... 51.97(a), and within the scope of the generic determination in paragraph (a) of this section, *no discussion of any environmental impact of spent fuel storage in reactor facility storage pools or installations (ISFSI) for the period following the term of the ... initial ISFSI license or amendment for which application is made, is required in any environmental report ...*

(c) This section does not alter any environmental requirements to consider the environmental impacts of spent fuel storage during the term of ... a license for an ISFSI.⁹⁴

This provision, according to Utah, restricts the EIS from considering any environmental impact of the facility beyond the initial 20-year license term. Utah maintains that NRC may not, therefore, consider any economic benefits that would accrue beyond the 20-year license term.

PFS, on the other hand, argues that there is a difference between an “environmental impact” and a purely economic benefit which is discussed in an EIS. We agree. On the one hand, NEPA compels government agencies to examine a wide range of effects on the human environment, including some (for example, socioeconomic effects) that go beyond effects on the physical environment. In addition, as we acknowledged in *Claiborne Enrichment Center*, NEPA expects that the environmental costs of a project be weighed against its benefits.⁹⁵ But the

⁹⁴10 C.F.R. §51.23 (emphasis added).

⁹⁵CLI-98-3, 47 NRC at 88.

principle that economic benefits must be weighed against environmental costs simply does not transform those economic benefits into environmental impacts. Thus our Waste Confidence Rule's restrictions on considering "environmental impacts" do not expressly address how we evaluate a project's potential economic benefits.

Nevertheless, Utah is right that it would be misleading to weigh 20 years' environmental impact against 40 years' economic benefit. But we think our Waste Confidence provisions allow us some flexibility, where appropriate, to go beyond a 20-year environmental analysis. In stating "[u]nless otherwise determined by the Commission," section 51.97(a) clearly allows the Commission to determine that in a particular situation the FEIS should address environmental impacts of fuel storage beyond the term of the license sought. Similarly, section 51.23(b) states that "no discussion of any environmental impact ... is *required*," but it does not expressly prohibit such a discussion. Due to the size of the facility for which PFS seeks a license, and the practical reality of filling up and emptying an ISFSI, this is a unique situation where both the impacts on the physical environment and the potential economic benefits should be considered for the entire period that the fuel could be onsite—that is, longer than the 20-year license term.

This interpretation is consonant with the purpose of our regulations. The waste confidence provisions were designed to limit the scope of the environmental inquiry to exclude looking at long-term effects as if there were no prospect for permanent disposal of waste. Because the Commission determined generically that waste can be stored safely for a period after a reactor shuts down, it promulgated regulations saying that there is no need to do a fresh evaluation of those post-shutdown environmental effects with every new EIS. The regulations were not designed to prevent the NRC from considering the very benefits for which a facility license is sought.

We return to this point below (in Subsection (c)) where we explain that a 40-year cost-benefit analysis does not require a change the FEIS's conclusion because of the nature of the environmental impacts in question. First, though, we address Utah's position that the waste confidence regulations limit the potential benefits that could flow from the proposed project.

(b) There is No Requirement That Applicant Remove Fuel Within 22 Years

Although we agree with Utah that it would be wrong to consider 20 years' adverse impact to the environment against 40 years' economic benefit, Utah carries its argument a step too far. Utah argues that PFS must start reducing its inventory early so that all fuel would be removed from the facility within 20 years plus two years (as a "reasonable" decommissioning time).⁹⁶ This, says Utah, substantially reduces the project's benefit.

Utah is arguing one of two things. We could understand Utah's argument to say that 10 C.F.R. §§51.97(a) and 51.23(a), the NEPA-related "waste confidence" regulations discussed above, include a substantive legal requirement that PFS stop accepting new fuel and start reducing its inventory long before its license has expired. But neither section 51.97(a) nor section 51.23(a) contains anything to suggest that they affect the operation of the licensed facility, nor has Utah cited any other regulation suggesting that PFS would have to stop accepting fuel before its license expires. On the other hand, we could take Utah's argument to mean that the regulations require us to *assume for the sake of a cost-benefit analysis* that PFS will stop accepting fuel prematurely even though there is no substantive legal requirement that it do so. But rather than enhancing the FEIS's accuracy, that assumption would yield an estimate of net benefits lower what the PFS project may in fact realize if it fills its facility to capacity within the initial 20-year licensing period.

⁹⁶Declaration of Michael F. Sheehan, Ph. D. in Support of State of Utah's Request for Admission of Late-Filed Contention Utah SS, at 4-5.

Most of Utah's brief on Utah SS, and on the cost-benefit analysis in its entirety, is founded on the premise that the throughputs have to be limited to what can be moved on and off the site within 22 years. We do not agree that the 20-year initial license term means that PFS must decommission the site within 22 years. Although our regulations provide that normally, decommissioning should be completed within 24 months after the Commission approves the decommissioning plan (*not* within 24 months after the expiration of the license), this requirement is waived where appropriate.⁹⁷ And there is no bar against PFS seeking a license renewal. The expert opinion on which Utah based its contention also presumed that PFS is required to remove all fuel from the site within 22 years. Because we reject that fundamental premise, most of Utah's claim that the FEIS was skewed falls away.

We conclude that the net economic benefits analysis in the FEIS was not flawed by the assumption that the licensee could continue to accept fuel for the full term of its license and up to the amount allowed in its license.

(c) No Need to Reevaluate Costs and Benefits in Light of the 40-year Storage Assumption

The information that PFS spent fuel might continue to be onsite for 40 years should not surprise anyone following this matter, because PFS has always said that it anticipated asking for a license renewal. Our regulations allow for license renewal. The FEIS made it clear that PFS could seek to renew its license for a second term.⁹⁸ Further, the FEIS's assumption that the license would be renewed if sufficient permanent storage were not yet available was reasonable.

The principal environmental impacts of the facility, after construction, are its visibility and the fact that it occupies land. It is evident that should PFS renew its license, these impacts will

⁹⁷ See 10 C.F.R. §72.54(j), (k). Under certain circumstances, the Commission may also grant a request to delay or postpone initiation of the decommissioning process or approve an alternate schedule for submittal of the final decommissioning plan. See 10 C.F.R. 72.52(f)(1)-(2).

⁹⁸ FEIS at xxxij; see also 10 C.F.R. §72.42(a).

continue until the fuel is removed. There is no reason to believe that anyone has been misled on that point. Similarly, there is no reason to believe that the NRC staff failed to realize that if some fuel remains on the site for 40 years, the corresponding environmental impacts would also continue for 40 years. Those impacts, as we have stressed, are expected to be minimal. Therefore, the FEIS adequately described the type of environmental impacts that will flow from this license.

Insofar as the the FEIS did not make it clear that impacts and benefits may last up to 40 years in the event that PFS takes in the “maximum throughput,” or if PFS renews its license, the record of this adjudication (including the Board’s oral decision and our decision today) makes that point clear. Commission decisions relating to a licensing proceeding supplement the FEIS.⁹⁹ Given minimal environmental impacts at stake, we see no reason to alter the FEIS’s bottom-line conclusions.

In sum, we agree with the Board that the record of this case is sufficient to inform the public about the supposed benefits of the project and the 20-year/40-year issue, and we reject Utah’s argument that the FEIS needs to be amended and recirculated.

(d) Start of Operations Date

Utah also charges that the cost-benefit analysis is flawed by a false start of operations assumption. The FEIS, released in December 2001, assumed the PFSF could start operations in mid-2003. (This reflects a recalculation from the DEIS’s assumption that the PFSF would open for business in 2002). In SS, Utah argued that if you assume that PFS could get a license by September, 2002, it would take 18 months to construct the facility, and then it would take an additional 4 months to (in the words of Utah’s expert) “get commercial.” This, according to Utah, meant PFS could not begin actually receiving fuel until the summer of 2004.

⁹⁹*Northeast Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), CLI-01-03, 53 NRC 22, 53 (2001); *Claiborne Enrichment Center*, CLI-98-3, 47 NRC at 89.

In support of its contention, Utah provided its own expert's calculations of PFS "throughputs," assuming a September, 2004 start of operations and a 2010 and a 2015 opening date for a permanent geological repository. But the calculations Utah provided were all flawed by Utah's false underlying premise that PFS must remove fuel within 22 years of the date of its license.¹⁰⁰ Take away that premise, and Utah's expert's tables do not tell us anything about what effect a different start of operations date would have on the cost-benefit analysis.

Without expert calculations to inform our decision, we are left with an argument that if a delay in startup shortens the period of time during which PFS has a virtual monopoly on away-from-reactor storage, then the benefits of the project must be reduced by some uncertain amount. The argument seems logical at first blush.

On the other hand, Utah's argument assumes that the opening of a permanent repository (the ending of PFS's monopoly) is a certainty by 2015 at the latest. Utah would have us disregard the so-called "insurance policy" benefit of the project, which is to protect reactor owners in case the repository cannot open by 2015. But like the PFS start-of-operations assumption, the opening dates posited for a geological repository in the FEIS were also only estimates.

Utah would have us send the cost-benefit analysis back to the NRC staff for recalculation, but that would also require the staff to reevaluate the estimates for the opening of a geologic repository. It is not evident that there is any point to doing so. First of all, we have no reason to believe that the economic benefits of the project would be reduced below the break-even point even if one assumes that the geologic repository opens in 2010 or 2015. Second, any recalculation would still be subject to great uncertainty due to the variability and inherent

¹⁰⁰See State of Utah's Request for Admission of Late-Filed Contention Utah SS, exhibit 1 (Feb. 11, 2002). The tables show the amount of fuel PFS would have left on site after 22 years if it accepted either the "medium throughput" of 27,000 MTU or the "maximum throughput" of 38,000 MTU, assuming it could start shipping fuel off the site and to a permanent repository in either 2010 or 2015.

unpredictability of a number of key factors. Like the analysis in the FEIS, that analysis would provide but one picture of what the financial costs and benefit of the project might be, given certain scenarios and assumptions. Given the innumerable ways the various assumptions can be adjusted and combined, we do not find that a new analysis would contribute meaningfully to the public's knowledge or to the decision to license this facility.

The NRC staff, as it must, based its analysis on assumptions that were reasonable at the time.¹⁰¹ The FEIS was clear that it was based on various factors that would affect the outcome one way or the other. The FEIS clearly stated that its predicted dates were only estimates. The staff cannot be expected to constantly rework their analyses as the adjudication over the accuracy of the FEIS progresses. The FEIS was not misleading to the public because any member of the public could look at it and see that the applicant has not been able to start operations by 2004, as originally hoped. But a short delay in PFS's opening date does not mean that the benefits or costs of the project will change dramatically.

(e) Congressional Preference Is Not a Cost-Benefit Analysis Factor

Utah claimed at oral argument before the Board and on review that a Congressional preference for at-reactor storage, as expressed in the Nuclear Waste Policy Act, should work its way into the cost-benefit analysis. But this factor was not listed as a basis in Utah SS or CC, and we did not accept review of it. In sum, the issue is not before us.

Nevertheless, it is not clear how this Congressional preference, if it exists,¹⁰² would affect the cost-benefit analysis even if we were to include it. Congress's alleged preference is neither an economic, nor an environmental, cost or benefit of the proposed licensing action. Indeed, because Congress must weigh competing interests of economic stimulus, public safety, and

¹⁰¹ *Inland Empire Pub. Lands Council v. U.S. Forest Service*, 88 F.3d 754, 761 (9th Cir. 1996).

¹⁰² This is doubtful. See *Bullcreek v. NRC*, 359 F.3d 536 (D.C. Cir. 2004).

environmental protection, its preferences are not necessarily the most environmentally benign, nor are they always the most economically beneficial.

At any rate, it is far too late in this adjudication to confront a new argument that the FEIS's cost-benefit analysis should have factored in Congress's supposed preference that spent nuclear fuel be stored at the site of the generating reactor.

(f) Need for Dry Storage

We reject for similar reasons Utah's argument that the cost-benefit analysis should include new information that dry storage is not urgently needed. This information, according to Utah, belies a comment in the FEIS that some reactors might have to shut down for lack of fuel storage space. In support of this argument, the state offers statements from an NRC employee that more fuel can be stored in pools than previously believed, and comments from an industry spokesman that dry cask storage may not even be necessary.¹⁰³ We reject this argument for two reasons. First, it is impermissibly new. We do not consider fresh arguments on appeal when there was opportunity to make them earlier; it is far too late in this litigation to explore the accuracy and relevance of the staff and industry statements.¹⁰⁴ Second, the threat that a reactor might have to shut down for lack of storage space was given little or no weight in the FEIS. It is mentioned in a single sentence in a section in the FEIS entitled "Other Societal Benefits and Costs." This is not enough to warrant a reappraisal of the project's net benefits.

II. CONCLUSION

Having considered Utah's arguments, we conclude that the FEIS was not deficient in failing to discuss the claimed impacts, and that the Board did not err in failing to admit for hearing

¹⁰³Utah Br. at 16.

¹⁰⁴See *Hydro Resources, Inc.*, CLI-00-8, 51 NRC at 243; *Yankee Atomic Electric Co.*, CLI-96-7, 43 NRC at 260.

1) Utah U, basis 2; 2) Utah Contention CC, or 3) Utah Contention SS. We therefore affirm the Board's rulings relating to these contentions.

IT IS SO ORDERED.

For the Commission

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland
the 17th day of August, 2004