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

In the Matter of	)	Docket No. 72-1051
Holtec International	)	February 25, 2019
(HI-STORE Consolidated Interim Storage Facility)	)	
	)	

* * * * *

MOTION OF PETITIONERS DON'T WASTE MICHIGAN, *ET AL*. TO AMEND THEIR CONTENTION 2 REGARDING HOLTEC'S PROPOSED MEANS OF FINANCING THE PROPOSED CONSOLIDATED INTERIM STORAGE FACILITY

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.309(c)(1), Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, San Luis Obispo Mothers for Peace, and Nuclear Issues Study Group (collectively, "Joint Petitioners" or "DWM, *et al*.") hereby move to amend Contention 2 previously filed in Holtec International's ("Holtec's") revised licensing application proceeding to build and operate a centralized interim spent fuel storage facility ("CISF") in southeastern New Mexico. Petitioners' amended contention addresses a recent judicial admission made by Holtec's legal counsel on January 24, 2019 before the Atomic Safety and Licensing Board concerning the financing of the proposed Consolidated Interim Storage Facility ("CISF").

Background information regarding Petitioners' original Contention 2 and changes to Holtec's license application is provided in § II, below. The amended Contention 2 is stated and supported in § III. In § IV, Petitioners demonstrate that they have good cause for filing their

amended contentions after the original filing deadline.

II. BACKGROUND

A. Development of Holtec's License Application 2015-2018

Holtec applied for a license for the CISF on March 30, 2017. 83 Fed. Reg. at 32,919 (July 16, 2018). The original license application, designated "Revision 0," included a Safety Analysis Report, License Conditions, Financial Assurance and Project Life Cycle Cost Estimates, and an Environmental Report. However, the project was under development by Holtec for several years prior.

B. Joint Petitioners' Hearing Request

DWM *et al.* submitted a petition and hearing requests on September 14, 2018 challenging Holtec's license application on grounds that it impermissibly relies on federal ownership of spent fuel to be transported to and stored at the proposed CISF. Petition of Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace and Nuclear Issues Study Group to Intervene and Request for an Adjudicatory Hearing (Sept. 14, 2018) ("DWM Petition"), Contention 2.

In Contention 2, the Joint Petitioners allege that Holtec cannot provide reasonable assurances that it can obtain the necessary funds to cover the costs of construction, operation maintenance and decommissioning of the CISF.

C. Holtec's Responses to Petitioners' Hearing Requests

In responding to Joint Petitioners' contention, Holtec disavowed the statements in the Environmental Report and other statements by Holtec officials to the effect that Holtec assumes

the DOE will take title to spent fuel to be transported to and stored at the proposed CISF. Holtec asserted that it would revise the document to make clear that the owner of spent fuel stored at the proposed CISF would be *either* the DOE *or* private licensees. Holtec also disavowed, as outdated and in any event merely aspirational, the 2015 and 2016 public statements of its officials discussed above. Holtec International's Answer Opposing the Don't Waste Michigan, Citizens' Environmental Coalition, Citizens for Alternatives to Chemical Contamination, Nuclear Energy Information Service, Public Citizen, Inc., San Luis Obispo Mothers for Peace, and Nuclear Issues Study Group Petition to Intervene and Request for an Adjudicatory Hearing on Holtec International's HI-STORE Consolidated Interim Storage Facility Application" ("Holtec Answer") at pp. 34-35.

Prior to filing its application for an NRC license, several statements by Holtec officials in press interviews and industry presentations revealed that Holtec planned to depend on DOE ownership of spent fuel in order to go forward with the project. See August 7, 2015 edition of SpentFuel (Holtec Vice President Pierre Oneid's assertion that Holtec's vision was "DOE would sign a contract with Holtec to be the customer, and thus DOE would take title to the fuel at the reactor site and be responsible for transporting it to the storage facility, just as it would if DOE were sending the spent fuel to a permanent repository."); also, *see* the July 30, 2015 issue of World Nuclear News (Mr. Oneid quoted as saying, "We will surely soon have official talks with them [DOE] on a contract whereby the DOE will hold title to the fuel"); also, see January 2016 powerpoint presentation by Holtec Vice President Joy Russell (unequivocal statement that Holtec "[r]equires federal funding to construct and operate CISF").

Holte'c original license application, designated "Revision 0," included a Safety Analysis

Report, License Conditions, Financial Assurance and Project Life Cycle Cost Estimates, and an Environmental Report. It made representations about the ownership of the spent fuel that were internally contradictory. Holtec's Environmental Report (Rev. 0) stated that Holtec does not plan to begin construction of the proposed CISF until "after Holtec successfully enters into a contract for storage with the U.S. Department of Energy (DOE)." *Id.* at 1-1. The Environmental Report (Rev. 0) also stated that "DOE would be responsible for transporting SNF from existing commercial nuclear power reactor storage facilities to the CIS Facility." *Id.* at 3-104. These parts of Holtec's original Environmental Report thus assumed that DOE would take responsibility for the spent fuel to be stored at the CISF, beginning with transfer of ownership to DOE at reactor sites before shipment.

In contrast, in other parts of Holtec's license application, Holtec hedged the assumption that DOE will own the spent fuel, instead asserting that ownership or liability may rest with either licensees *or* the DOE. *See, e.g.*:

- HI-STORE CIS Facility Financial Assurance and Project Life Cycle Cost Estimates, Rev. 0 (Report No. HI-2177593) at 3 ("Additionally, as a matter of financial prudence, Holtec will require the necessary user agreements in place from the *USDOE and/or the nuclear plant owners*") (emphasis added);

- License Condition # 17, Proposed License for Independent Storage of Spent Nuclear Fuel at 2 (ADAMS Accession No. ML17310A223) ("the construction program will be undertaken only after a definitive agreement with the prospective user/payer for storing the used fuel *(USDOE and/or a nuclear plant owner)* at the HI-STORE CIS has been established") (emphasis added); and

- Safety Analysis Report, Table 1.0.2 at 26 (ADAMS Accession No. ML18254A413) ("In accordance with 10CFR72.22, the construction program will be undertaken only after a definitive agreement with the prospective user/payer for storing the used fuel (*USDOE and/or a nuclear plant owner*) at HI-STORE CIS has been established.") (emphasis added).

On January 2, 2019, Holtec issued "Holtec Reprising 2018" (Jan. 2, 2019) ("Reprising 2018 Report"). The report clearly says that DOE involvement in the CISF project is a prerequisite for operation of the proposed CISF. In particular, the Report states:

> While we endeavor to create a national monitored retrievable storage location for aggregating used nuclear fuel at reactor sites across the U.S. into one (HI-STORE CISF) to maximize safety and security, *its deployment will ultimately depend on the DOE and the U.S. Congress.*

Id. at 1 (emphasis added). This statement demonstrates that Holtec assumes that DOE will, in fact, take the role of spent fuel owner assumed in certain parts of the Environmental Report. This statement also effectively acknowledges that DOE ownership of spent fuel prior to the opening of a repository is unlawful under the NWPA, and therefore that Congressional action will be required before DOE can take title to the spent fuel.

Holtec announced a major change of direction at the January 24, 2019 contention oral argument hearing in Albuquerque when its counsel admitted that there cannot be any U.S. Department of Energy financial involvement in the Holtec CISF proposal:

> But I will agree with you that, on their current legislation, DOE cannot take title to spent nuclear fuel from commercial nuclear power plants, under the current statement of facts, but that could change, *depending on what Congress does*.

Transcript of Proceedings 1/24/2019 ("Tr."), p. 250 (Silberg) (Emphasis added).

At the Albuquerque hearing, Holtec's counsel emphasized that to the company, the distinction between DOE taking title and private customer payment is "irrelevant" because

"whether it's DOE hold title or the utilities hold title or Holtec holds title, the environmental impacts are going to be identical." Tr. 250, 248 (Silberg).

Regardless, with the retraction of Holtec's long-claimed option of having the U.S. Department Energy take title to the SNF and provide an ongoing funding stream for Holtec's CISF operations, the remaining option is to have the expenses of construction and operation borne by nuclear power plant licensees who arrange for SNF storage at Holtec. That sole option must be investigated, analyzed and disclosed in detail under the Atomic Energy Act and the National Environmental Policy Act.

III. REQUEST FOR LEAVE TO AMEND DWM'S CONTENTION 2

A. Applicable Standards

NRC regulation 10 C.F.R. § 2.309(c) allows a petitioner to amend its contentions if the presiding officer finds that the petitioner "has demonstrated good cause" by satisfying the following factors: (i) the information on which the filing is based was not previously available; (ii) the information upon which the filing is based is materially different from information previously available; and (iii) the filing has been submitted in a timely fashion based on the availability of the subsequent information. An amended contention generally is considered timely if it is filed within 30 days of the date upon which the new information became available. *Shaw AREVA MOX Services* (Mixed Oxide Fuel Fabrication Facility), LBP-08-11, 67 NRC 460, 493 (2008) ("Many times, boards have selected 30 days as [the] specific presumptive time period" for timeliness of contentions filed after the initial deadline).

DWM *et al.* respectfully submit that permitting the amendment of a contention is appropriate where new information shows that material statements in a license application are

false or incorrect, given the "importance" placed by the Commission on "completeness and accuracy of information submitted by applicants and licensees" and the Commission's demand for "[n]othing less than candor." *Randall C. Orem, D.O.*, CLI-93-14, 37 NRC 423, 427 (1993) (citing *Petition for Emergency and Remedial Action,* CLI-78-6, 7 N.R.C. 400, 18 (1978); *Hamlin Testing Laboratories, Inc.,* 2 AEC 423, 428 (1964), *aff'd,* 357 F.2d 632 (6th Cir. 1966); *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 N.R.C. 480 (1976), *aff'd*, 571 F.2d 1289 (4th Cir. 1978)).

B. Request for Leave to Amend Contention 2

DWM *et al.* seek to amend the basis statement and the substantive contents of their Contention 2.

The Contention asserts:

> Holtec cannot provide reasonable assurances that it can obtain the necessary funds to cover the costs of construction, operation maintenance and decommissioning of the CISF.

DWM Petition at 31. The basis statement for Contention 2 originally stated, *inter alia,* that:

> Under existing law, financial guarantees could be forthcoming from DOE only by means of DOE taking title to the spent nuclear fuel at the commercial nuclear reactor site. There is no legal authority under the Nuclear Waste Policy Act of 1983, as amended for DOE to enter into any agreement, either with Holtec or any commercial nuclear reactor utility, to pay for such centralized interim storage facility construction, operations, maintenance, decommissioning, etc.

By a motion filed February 6, 2019 and still pending, DWM *et al.* seek to add the following new paragraph directly after "decommissioning, etc." in the basis statement:

> Language in Rev. 3 of Holtec's Environmental Report, which presents federal ownership as a possible alternative to private ownership of spent fuel, does not render Holtec's financial assurance plan lawful. As long as Holtec includes the federal government as a potential guarantor or financer of the project, which in turn requires federal ownership of spent fuel, the application violates the NWPA.

Joint Petitioners request leave to further amend Contention 2 in the particulars appearing in the attached "Don't Waste Michigan *et al.*'s Amended Contention 2," which is incorporated fully herein by reference as though rewritten. The amended/additional pleading appears in boldface type.

IV. DEMONSTRATION OF GOOD CAUSE FOR LATE FILING

Petitioners satisfy the three-prong test for good cause to file amended contentions based on new information, as follows:

(i) The information upon which the filing is based was not previously available

Holtec's counsel's admission on January 24, 2019 was the first time that Holtec unequivocally has admitted that there is no U.S. Department of Energy subsidy of CISF operations. During the same colloquy, Holtec's counsel asserted as a proposition that there were no differences in environmental effects between the two financing schemes, a proposition unsupported by any evidence.

(ii) The information upon which the filing is based is materially different than information previously available

Holtec's unequivocal assertion that there is presently no means of DOE financing of the CISF concludes the company's ongoing campaign to deny the irrelevance of the Nuclear Waste Policy Act and as such differs materially from information previously available. It changes the thrust of Holtec's application to investigation, analysis and disclosure of the details of the private financing scheme by which Holtec intends to build, operate and decommission the proposed CISF.

(iii) The filing has been submitted in a timely fashion based on the availability of the subsequent information

The amended contention is being filed within 30 days of Petitioners' having learned of Holtec's admission that U.S. DOE participation in CISF financing is a nullity and therefore is timely. *Shaw AREVA MOX Services,* 67 N.R.C. at 493.

IV. CONCLUSION

For the foregoing reasons, the ASLB should grant the request of Petitioner DWM *et al.* to amend their Contention 2.

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Respectfully submitted,

__/signed electronically by/__
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NUCLEAR REGULATORY COMMISSION
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CERTIFICATE OF SERVICE

I hereby certify that on February 25, 2019, the foregoing MOTION OF PETITIONERS DON'T WASTE MICHIGAN, *ET AL*. TO AMEND THEIR CONTENTION 2 REGARDING HOLTEC'S PROPOSED MEANS OF FINANCING THE PROPOSED CONSOLIDATED INTERIM STORAGE FACILITY, along with the Expert Report of Robert Alvarez and the Curriculum Vitae of Robert Alvarez were all deposited by me in the NRC's Electronic Information Exchange System.

___/signed electronically by/__
Terry J. Lodge
Counsel for DWM *et al.,* Petitioners

DON'T WASTE MICHIGAN *ET AL.*'S AMENDED CONTENTION 2

Holtec cannot provide reasonable assurances that it can obtain the necessary funds to cover the costs of construction, operation, maintenance and decommissioning of the CISF.

Basis for the Contention

Holtec cannot demonstrate, as required by 10 C.F.R. § 72.22, that it either possesses the necessary funds, or that it has reasonable assurance of obtaining the necessary funds, or that by a combination of the two, it will have the necessary funds available to cover the construction, operation and decommissioning of the CISF.

Pursuant to 10 C.F.R. § 72.22(e), Holtec is required to demonstrate "reasonable assurance" that it can fund the construction, operation and decommissioning of the CISF. Holtec inconsistently states that it will solely finance the CISF from internal resources, but inconsistently states at the same time that it must have definite contractual arrangements with the U.S. DOE and the outside funding that would come with those arrangements in order to undertake the CISF.

A. Financing By Having DOE Take Title to SNF Is Not Lawful, Hence Is Not Possible

Holtec enumerates in the financial plan included as part of its license application an estimate of construction costs that Holtec says it will cover with a line of credit from an unidentified creditor. At p. 4/10 of the "Holtec International & Eddy Lea Energy Alliance (ELEA) Underground CISF - Financial Assurance & Project Life Cycle Cost Estimates" ("Financial Assurance Plan"), Holtec specifically says:

> Additionally, as a matter of financial prudence, Holtec will require the necessary user agreements in place (from the USDOE and/or the nuclear plant owners) that will justify the required capital expenditures by the Company. However, if the NRC approves and the necessary contractual instruments are established insuring the minimum revenue

> stream needed to justify the facility, then Holtec will launch the construction using its own resources so as to bring the interim storage solution to the industry in the shortest possible time.

Holtec thus will not construct the CISF without financial guarantees from the U.S. Department of Energy. Under existing law, financial guarantees could be forthcoming from DOE only by means of DOE taking title to the spent nuclear fuel at the commercial nuclear reactor site. There is no legal authority under the Nuclear Waste Policy Act of 1983, as amended for DOE to enter into any agreement, either with Holtec or any commercial nuclear reactor utility, to pay for such centralized interim storage facility construction, operations, maintenance, decommissioning, etc. The need for an arrangement which is not lawful in the current circumstances is repeated later in the Financial Assurance Plan, at p. 6/10:

> 2.1 Annual Operating Costs
>
> Anticipated operating costs for the HI-STORE facility are $10 million annually. All financial commitments related to annual operations will be tied to the sponsoring party's agreement with Holtec (*viz.*, DOE settlement agreement).

Holtec considers DOE to be the "sponsoring party" of the CISF, and the term "DOE settlement agreements" apparently refers to agreements whereby DOE takes title to the spent nuclear fuel at reactor sites.

As part of the license application, Holtec submitted to the NRC a draft "License for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste."[1] Paragraph 17 of the draft license states as follows:

> 17. In accordance with 10 CFR 72.22, the construction program will be undertaken only after a definitive agreement with the prospective user/payer for storing the used fuel (USDOE and/or a nuclear plant owner) at HI-STORE CIS has been established. Construction of any additional capacity beyond this initial capacity amount

[1] https://www.nrc.gov/docs/ML1731/ML17310A223.pdf

shall commence only after funding is fully committed that is adequate to construct such additional capacity.

This formal license application document reiterates Holtec's insistence that it must have "a definitive agreement with the prospective user/payer for storing the used fuel," defined as "USDOE and/or a nuclear plant owner."

Holtec officers have repeatedly spoken of the company's requirement for federal subsidies to pursue the CISF. In July 2015, contemporaneously to the time that Holtec sent a letter of intent to the NRC to undertake the project, Holtec International Vice-President Oneid was quoted in the newsletter Spent Fuel that "Holtec's vision is that DOE would sign a contract with Holtec to be the customer, and thus DOE would take title to the fuel at the reactor site and be responsible for transporting it to the storage facility, just as it would if DOE were sending the spent fuel to a permanent repository."[2]

In a July 2015 World Nuclear News article about the Holtec letter of intent about to be sent to the NRC, Holtec's Vice-President Oneid stated that "We will surely soon have official talks with them on a contract whereby the DOE will hold the title to the fuel."[3]

And in January 2016, Holtec International Vice-President Joy Russell gave a presentation with a slide stating that Holtec "Requires federal funding to construct & operate CISF."[4]

In contradiction, if not repudiation, of these historic statements of intention, Holtec has asserted that it will have the assets to construct, operate and decommission the CISF. Under 10

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[2]www.uxc.com/p/products/pdf/SF1071.pdf

[3]http://www.world-nuclear-news.org/WR-Holtec-to-start-regulatory-process-for-New-Mexico-used-fuel-store-soon-30071501.html

[4]https://www.inmm.org/INMM/media/Documents/Presenations/Spent%20Fuel%20Seminar/2016%20Spent%20Fuel%20Seminar/W6-Russell_HI-STORE_INMM_JAN_2016_R2.pdf at slide #38.

C.F.R. § 72.22(e), Holtec must possess the necessary funds, have reasonable assurance of obtaining the necessary funds, or by a combination of the two, have the funds to undertake the CISF as a 20-year storage-construction program, and to operate it securely for 100 years total. Holtec stresses its inability to finance the construction from internal company resources beyond the first of 20 annual phases. Holtec then hedges on even this limited pledge by insisting that it must have guarantees--presumably arrangements wherein the DOE has taken title to the spent nuclear fuel--before it will construct the CISF at all. There is insufficient evidence that Holtec can comply with 10 C.F.R. § 72.22(e) without having financing, having reasonable assurance of obtaining financing, or some combination of the two.

Worse, Holtec cannot show that current law authorizes the proposed method of financing enumerated in its Financial Assurance Plan. The Nuclear Waste Policy Act of 1983, as amended, provides zero financial support from DOE to private away-from-reactor storage schemes unless there is an operating repository. And the NWPA does not contemplate a financial arrangement whereby DOE takes title to spent nuclear fuel for purposes of interim storage of a facility not owned by the U.S. Department of Energy.

B. Financing By Of The CISF By Plant Owners Holding Title to SNF Is Quite Improbable

Holtec announced a major change of direction at the January 24, 2019 contention oral argument hearing in Albuquerque. Its lead counsel finally admitted that there cannot be any U.S. Department of Energy financial involvement in the Holtec CISF proposal:

> But I will agree with you that, on their current legislation, DOE cannot take title to spent nuclear fuel from commercial nuclear power plants, under the current statement of facts, but that could change, *depending on what Congress does*.

Transcript of Proceedings 1/24/2019 ("Tr."), p. 250 (Silberg) (Emphasis added).

At the Albuquerque hearing, Holtec's recurring statements of dependency on DOE's taking title to spent nuclear fuel ("SNF") was finally run to earth as a "contingent option" and not a real one. The belated sweeping aside of the misleading, impossible financing stream now exposes the highly likely, merely theoretical one. Holtec's position on financing, articulated at the hearing by their lead counsel, is that the distinction between DOE taking title and private customer payment is "irrelevant" because "whether it's DOE hold title or the utilities hold title or Holtec holds title, the environmental impacts are going to be identical." Tr. 250, 248.

Joint Petitioners beg to differ; the environmental effects could vary considerably with a private financing scheme. The private scheme envisions having "necessary user agreements in place (from . . . the nuclear plant owners) that will justify the required capital expenditures by the Company." Financial Assurance Plan at 3.

While technically possible under the Atomic Energy Act, a privately-financed Holtec is a vapid and wholly unlikely alternative which would look very different from DOE taking title, because of the vagaries of private sector capital ebbs and flows compared to the continuity of governmental funding, and also because a privately financed Holtec would present a different cost model. The Holtec financing discussion to this point has been overwhelmed by the DOE take-title fiction. Although Holtec maintains it is an irrelevant discussion, finally dispatching the DOE genie allows serious scrutiny of the sole remaining alternative.

In support of this needed examination of private financing, Joint Petitioners have attached a "Declaration of Robert Alvarez" ("Alvarez Report"). Mr. Alvarez is a former senior policy adviser to the U.S. Secretary of Energy and deputy assistant secretary for national security and the environment from 1993 to 1999. Presently he is a senior scholar at the Institute for Policy

Studies. In 2003 he co-authored an extensive report on reducing the storage hazards of spent power reactor fuel in the United States which has largely been corroborated in subsequent reviews by the National Research Council. Mr. Alvarez's *curriculum vitae* accompanies this proposed amended contention.

Mr. Alvarez observes that under the private-financing model, utilities "will have to address expectations as to the spent nuclear fuel canistering that would be less economically onerous if DOE were involved. The timing for shipment to Holtec's facility of high burnup fuel, and requirements of shipment integrity are interrelated and will be different if DOE is not directing the traffic. Private payers will have budget constraints and economic priorities that are different--and so affect timing of moving the fuel around-- from a scenario where DOE is the contractor. Holtec will bear responsibility for repackaging SNF at its site, requiring dry transfer system capability close to the beginning of operations, something they presently have no intentions of developing until the end of the short term, or even longer." Alvarez Report at 2-3.

1. Holtec's Missing Storage Cost Projections

Holtec's Financial Assurance Plan mainly consists of trust-us assurances. Holtec will build the first of 20 phases with its own money, supplemented in the final 19 phases by silence and magical aspirations. According to Mr. Alvarez, Holtec was a participant in a study estimating that 5000 MTU of SNF would cost $4.72 Billion for CISF storage over an 80-year period. *Id.* at Table 1. It follows that 100,000 MTU, the volume Holtec expects to store in New Mexico, will cost $94.4 Billion over 80 years. Taking the proposed quantity of 173,600 MT, which Holtec has explicitly stated at certain points in its LA documents, then the cost would go correspondingly higher.

2. High Burnup Fuel: A Tale Of Two CISFs

Mr. Alvarez unearths considerable variability between the Holtec and ISP approaches to transport and storage of high-burnup fuel (which he defines as fuel with burnup greater than 45,000 MWd/MTU). He says:

> Of concern is the damage that high-burnup fuel may have on the cladding of the fuel. The Nuclear Regulatory Commission (NRC) and the nuclear industry do not have the necessary information to determine if prolonged storage of high-burnup fuel may damage fuel cladding and create leakage. Even NRC admits, "there is limited data to show that the cladding of spent fuel with burnups greater than 45,000 GWd/MTU will remain undamaged during the licensing period."

Alvarez Report at 6. Mr. Alvarez further explains that "under high-burnup conditions, the zirconium cladding of the fuel rods may not be relied upon as a key barrier to prevent the escape of radioactivity," especially during prolonged storage in the "dry casks." *Id.* at 6. High burnup fuel temperatures "make the used fuel more vulnerable to damage from handling and transport; cladding can fail when used fuel assemblies are removed from cooling pools, when they are vacuum dried, and when they are placed in storage canisters." *Id.* at 7.

Mr. Alvarez additionally cites the lack of data regarding the impacts on high-burn-up spent fuel by transportation and multi-decade dry storage and concludes that "[t]he NRC and the nuclear industry do not have the necessary information to predict when storage of high-burnup fuel may cause problems." *Id.* He warns, "It will take the Energy Department at least a decade to complete a study involving temperature monitoring in a specially designed dry cask containing high burnup fuel." *Id.* at 9.

While Petitioners concede that the same laws of physics apply irrespective of Holtec's financing mode, Holtec has devised a problematic policy from the manifestation of those laws in the physical realm. According to Mr. Alvarez, Holtec's direct competitor, Interim Storage

Partners in Andrews County, Texas, has stipulated in its NRC license application for a CISF that "all fuel with assembly average burnup greater than 45 GWd/MTHM shall be canned inside the canister,"[5] whereas Holtec has no plan to require double containment for high-burnup spent nuclear fuel. This represents a potentially large difference in pricing and management of the canisters at the reactor and New Mexico ends, poses ominous portents for transport risk and will further expand routine radiological exposures to populations along thousands of miles of shipping routes.

Holtec, Alvarez concludes, is "relying on speculative assumptions regarding the outcome of experimental data several years from now from the Energy Department, and undocumented regulatory changes by the NRC, which only permits transport of high-burn-up spent nuclear fuel on a case-by-case basis." *Id.* at 10-11.

3. Repackaging SNF May Triple Storage Expense

As Mr. Alvarez notes, there is no dry cask storage system licensed for disposal. Disposal canistering is experimental and quite preliminary. Alvarez Report at 11. Without DOE assuming title of SNF, there is unlikely to be detailed development of repackaging in line with DOE's 2006 policy. Holtec has promised to accept the gamut of canisters and has no intention of building a dry transfer system ("DTS") to remedy dangers that may arise in SNF hauling, much less for repackaging waste in standardized disposal containers.

On the face of things, a huge cost drain might be avoided by the private utility customers of Holtec – until, that is, there is a major transportation accident, a radiological onsite emergency

[5]U.S. Nuclear Regulatory Commission, LICENSE FOR INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE, NRC Form 588, Docket No.72-1050, page 2.

in New Mexico, or a sudden determination at the Department of Energy toward standardization. The cost picture will indeed change. As Joint Petitioners maintain in their present Contention 3, low-level radioactive waste (LLRW) volume and cost considerations could be dramatically affected by a need to institute repackaging well ahead of the first century of CISF operations. It could produce thousands of discarded canisters, an event unforeseen in the current Holtec proposal.

Mr. Alvarez makes these salient points:

> A nuclear industry study concluded in 2014 that "casks and canisters being used by the power utilities will be at least partially, and maybe largely, incompatible with future transport and repository requirements. This means that some if not all, of the [used nuclear fuel] that is moved to dry storage by the utilities will ultimately need to be repackaged." Existing large canisters can place a major burden on a geological repository, such as: handling, emplacement and post closure of cumbersome packages with higher heat loads, radioactivity and fissile materials. Repackaging expenses rely on the transportability of the canisters, but more importantly on the compatibility of the canister with heat loading requirement for disposal.

Alvarez Report at 12. He points to DOE research showing that the costs of repackaging at a CISF could add roughly $40,000 to $87,000 per fuel assembly to loading and capital costs and calculates that the total expense of repackaging an estimated 244,000 spent nuclear fuel assemblies could range from $9.7 billion to $22.2 billion. The costs of repackaging alone, he says, "can effectively double or triple the high cost of interim storage." Alvarez Report at 13.

4. No Price-Anderson Coverage

Holtec's application documents don't discuss liability coverage for transportation to New Mexico, or for accidents, sabotage, terrorist attacks, *etc.* that might befall storage operations. By 42 U.S.C. § 2210(a), access to Price-Anderson liability protections is committed to the discretion of the NRC. The NRC never provided Price-Anderson coverage to the Private Fuel Storage

project in Utah. Despite periodic renewals of the Price-Anderson Act, Congress has never dislodged the principle that "a state may nevertheless award damages based upon its own law of liability." *Silkwood v. Kerr-McGee Corp.,* 464 U.S. 238, 256, 104 S.Ct. 615 (1984); *Skull Valley Band of Goshute Indians v. Private Fuel Storage*, LLC, 376 F.3d 1223, 1243 (10th Cir. 2004) ("Congress intended to stand by both concepts.").

The Price-Anderson Act does not cover 100% of all conceivable radiological events. It is triggered by formal declaration of an "extraordinary nuclear occurrence" ("ENO"). Some forms of nuclear damage fall below the threshold harms and losses required for an ENO. The core meltdown at Three Mile Island, Unit 2, notably, was never classified as an ENO by the NRC.

Perhaps because of its excessive focus on having DOE take title to the SNF, which would automatically bring Holtec within the coverage of Price-Anderson, Holtec's application documents lack any meaningful disclosure or discussion of liability management in the event of no continuing federal contract with the Department of Energy.

C. Customer Financing Implies Different Arrangements From DOE Taking Title That Must Be Identified And Disclosed

1. No Demonstration of 'Reasonable Assurance' Under AEA

Atomic Energy Act regulations at 10 CFR § 72.22(e) require Holtec to disclose the following in its application for the license:

> (e) . . . [I]nformation sufficient to demonstrate to the Commission the financial qualifications of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the license is sought. . . . The information must show that the applicant either possesses the necessary funds, or that the applicant has reasonable assurance of obtaining the necessary funds; or that by a combination of the two, the applicant will have the necessary funds available to cover the following:
>
> (1) Estimated construction costs;
> (2) Estimated operating costs over the planned life of the ISFSI; and
> (3) Estimated decommissioning costs, and the necessary financial

> arrangements to provide reasonable assurance before licensing, that decommissioning will be carried out after the removal of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste from storage.

As the foregoing discussion suggests, Holtec has not adequately estimated the operating costs over the planned life of the CISF, nor an adequate estimation of decommissioning costs and associated financial arrangements to demonstrate reasonable assurance of decommissioning. Holtec projects a mere $27.3 Million in annual operating expenditures. Financial Assurance Plan § 2.1.

The truthful and accurate provision of financing information may persuade the NRC to grant the requested license, so this contention is material to the findings the NRC must make. Under Section 186(a) of the Atomic Energy Act, 42 U.S.C. § 2236(a),[6] the test for materiality is whether the information is capable of influencing the decision maker, not whether the decision maker would, in fact, have relied on it. Determinations of materiality require careful, common sense judgments of the context in which information appears and the stage of the licensing process involved. *Consumers Power Co.* (Midland Plant, Units 1 & 2), ALAB-691, 16 NRC 897, 910 (1982), citing *Virginia Elec. & Power Co.* (North Anna Power Station, Units 1 & 2), CLI-76-22, 4 NRC 480 (1976), aff'd *sub nom*. *Virginia Elec. & Power Co. v. NRC*, 571 F.2d 1289 (4th Cir. 1978).

The NRC has discussed in previous cases what constitutes reasonable assurance of

[6] "Any license may be revoked for any material false statement in the application or any statement of fact required under section 182, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Commission to refuse to grant a license on an original application, or for failure to construct or operate a facility in accordance with the terms of the construction permit or license or the technical specifications in the application, or for violation of, or failure to observe any of the terms and provisions of this Act or of any regulation of the Commission."

adequate funding. In *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), 46 NRC 294 (1997), the Commission determined that an NRC permit should contain strict financial assurance conditions before construction can begin.

Three years later, in *Private Fuel Storage LLC* (Independent Spent Fuel Storage Installation), 52 NRC 23 (2000), the Commission applied *Claiborne* to an application under 10 C.F.R. Part 72. The Commission allowed PFS to provide its financial assurance through license conditions after a showing of financial assurance was made through an evidentiary hearing. The Commission said:

> *Claiborne* should not be interpreted, however, to hold that where the danger to public health and the environment presented by a proposed facility is not as great as the danger presented by a nuclear reactor, the Commission will grant a license to an applicant of dubious financial qualifications. Under the *Claiborne* approach, we still consider the financial prospects of the proposed license, but we do not hold the license applicant to Part 50-style specific means of showing financial capability.

The Commission requires that a financial assurances showing be made at an evidentiary hearing. Holtec thus far has not made that showing.

Since Holtec finally admitted at the ASLB hearing on January 24, 2019, that DOE cannot legally take title to or have financial responsibility for the waste to be stored at the Holtec facility, and since there is insufficient financial assurance that reactor owners would retain title to the waste and take financial responsibility, Holtec has not complied with 10 C.F.R. § 72.22(e). Although financial requirements could be placed in the license conditions, that must be determined on a case-by-case basis after an evidentiary hearing.

2. Inadequate Quantification Of Costs And Benefits Under NEPA

By 10 C.F.R. § 51.45(c) requires the ER to "include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of

alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects" and that "the analysis in the environmental report should also include consideration of the economic, technical, and other benefits and costs of the proposed action and its alternatives." Section 51.45(e) mandates that the information submitted "should not be confined to information supporting the proposed action but should also include adverse information."

The Council on Environmental Quality regulation that implements NEPA cost-benefit analysis, 40 C.F.R. § 1502.23, requires such analyses to be attached to the Environmental Impact Statement:

> If a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be incorporated by reference or appended to the statement as an aid in evaluating the environmental consequences. To assess the adequacy of compliance with section 102(2)(B) of the Act the statement shall, when a cost-benefit analysis is prepared, discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations. In any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision.

Joint Petitioners have produced information raising questions about the economic costs and related differences in environmental effects to be expected from a privately-funded CISF, as opposed to a project with essentially regular cash flow and financing because of the DOE.[7] While Holtec may properly propose its preferred alternative operating model CISF, other operational models must be characterized as alternatives, and costed out for consideration economically as

[7]Barring future governmental shutdowns and associated funding interruptions.

well as environmentally. Such alternatives include, but are not limited to, the following:

○ consideration of the Holtec project design, but with a dry transfer system available from the date of commencement of receipt of SNF from reactor sites; and/or

○ consideration of the Holtec project design with a dry transfer system and a formal policy of not rejecting arriving loads, but instead of remediating them at the New Mexico site; and/or

○ consideration of the Holtec project design with DTS and can-in-can delivery for high burnup fuel; and/or

○ consideration of the Holtec project design without DTS but with can-in-can delivery for high burnup fuel; and/or

○ consideration of the Holtec project design with/without DTS, with full disclosure, investigation and analysis of transportation routes where SNF would travel through least-populated, medium-populated and heavily-populated areas en route to New Mexico; and/or

○ consideration of the Holtec operational design, with SNF repackaging required to occur at the New Mexico site; and/or

○ consideration of the Holtec operation design with SNF repackaging having been performed at the reactor sites; and/or

○ analysis of environmental effects from transporting SNF in repackaged containers vs. projected environmental effects of transporting SNF in non-standardized containers. This last alternative encompasses both shipment from reactor sites to Holtec and thence to a final repository.

NEPA does not permit an agency to:

> . . . [C]ontrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence). . . . If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role. Nor can the agency satisfy [NEPA].

Simmons v. United States Army Corps of Eng'rs, 120 F.3d 664, 665 (7th Cir. 1997). See also *Van Abbema v. Fornell*, 807 F.2d 633, 638 (7th Cir. 1986) ("evaluation of 'alternatives' mandated by NEPA is to be an evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals"); *also, Sierra Club v. Marsh*, 714 F.Supp. 539, 577 (D.Me. 1989) ("project's principal goals must override the stated preferences of the applicant for purposes of NEPA's 'reasonable alternatives' analysis"); *DuBois v. U.S. Dept. of Agric.*, 102 F.3d 1273, 1287 (1st Cir. 1996), *cert. denied,* 117 S.Ct. 1567 (1997) (existence of a reasonable, but unexamined, alternative renders the EIS inadequate). Courts must ensure that the ultimate site decision is made only after reasonable alternatives and their impacts are properly identified in the NEPA document. *Concerned About Trident v. Rumsfeld*, 555 F.2d 817 (D.C. Cir. 1977).

Under NEPA, the environmental review must "rigorously explore and objectively evaluate all reasonable alternatives." 40 C.F.R. § 1502.14(a). NEPA expects a "substantial treatment of each alternative" to be considered in an EIS. 40 C.F.R. § 1502.14(b); see also, *Southeast Alaska Conservation Council v. FHWA*, 649 F.3d 1050 (9th Cir. 2011). An agency must take a "hard look" at the environmental consequences of a proposed action before taking that action. *Nuclear Fuel Servs., Inc*., LBP-05-8, 61 NRC 202, 207 (2005) (citing *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 558 (1978) and quoting *Balt. Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983)). The "hard look" requires the federal agency to make a "good faith" effort to predict reasonably foreseeable

environmental impacts, and for the agency to apply a "rule of reason" after taking that "hard look" at potential environmental impacts. *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 & 2), LBP-78-26, 8 NRC 102, 141 (1978).