

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

Before Administrative Judges:

ASLBP BOARD 09-876-HLW-CAB01 William J. Froehlich, Chairman Thomas S. Moore Richard E. Wardwell	ASLBP BOARD 09-877-HLW-CAB02 Michael M. Gibson, Chairman Alan S. Rosenthal Nicholas G. Trikouros	ASLBP BOARD 09-878-HLW-CAB03 Paul S. Ryerson, Chairman Michael C. Farrar Mark O. Barnett
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In the Matter of:)	April 10, 2009
)	
U.S. Department of Energy)	
)	Docket No. 63-001
(High Level Waste Repository)	
Construction Authorization Application))	
)	

**U.S. DEPARTMENT OF ENERGY RESPONSE TO REQUEST
FROM THE MARCH 31, 2009 ORAL ARGUMENT**

During the March 31, 2009 oral argument in the above referenced proceeding, counsel for the U.S. Department of Energy (DOE) stated, that in his experience, there have been contentions submitted in other NRC proceedings that “are far more poorly drafted than in [sic] the State of Nevada and others that were likely better drafted.” March 31, 2009 Interim Draft Transcript (Tr.) at 234-35 (electronic version). The Board subsequently requested that DOE provide examples of contentions from other proceedings which were better drafted than those of the State of Nevada. Tr. at 235.¹ DOE is providing a table with such examples in response to

¹ The Interim Draft Transcript incorrectly indicates that the colloquy was with Judge Barnett, rather than Judge Farrar.

that request. The attached examples are better pled, not because they are longer or necessarily use more polished language, but rather because, unlike most of Nevada's contentions, they clearly explain why the alleged deficiencies, if true, constitute a regulatory violation and would make a difference in the outcome of the proceeding. The Commission has recently reiterated that the "contention admissibility requirements are deliberately strict."² The attached examples illustrate what a petitioner must include in a contention to satisfy these strict admissibility standards. In contrast, Nevada frequently merely identified possible technical errors or omissions in DOE's License Application, without providing an explanation of how those alleged

² *AmerGen Energy Co., LLC* (License Renewal for Oyster Creek Nuclear Generating Station), CLI-09-07, 69 NRC ___, slip op. at 30 (2009) (citations and quotations omitted); *see also Dominion Nuclear Conn., Inc.* (Millstone Power Station, Unit 3) CLI-08-17, 68 NRC ___, slip op. at 3 (2008). In *Dominion*, the Commission further reiterated that "[t]he contention standards assure that those admitted to our hearings bring 'actual knowledge of safety and environmental issues that bear' on the licensing decision, and therefore can litigate issues meaningfully. Threshold contention standards are imposed to avoid circumstances the NRC regularly encountered prior to the 1989 contention rule revision, when licensing boards admitted contentions based on little more than speculation, creating serious delays of months and even years, 'as licensing boards . . . sifted through poorly defined or supported contentions,' and admitted intervenors who 'often had negligible knowledge of nuclear power issues.' Contention standards also help assure that our hearing process will be appropriately focused upon disputes that can be resolved in the adjudication." CLI-08-17, slip op. at 3 (citations omitted); *see also USEC, Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 482 (2006); *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Unit 2), CLI-03-14, 58 NRC 207, 213 (2003); *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358-59 (2001); *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334-35 (1999).

errors or omissions violate the relevant regulations, or would, if true, be material to the proceeding.

Respectfully submitted,

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Dated in Washington, DC
this 10th day of April 2009

Enclosure: Examples of Contentions Filed in Other NRC Proceedings

No.	Contention	Analysis
1	<p>Utah “E”: Financial Assurance (Attachment 1)</p> <p><i>See Private Fuel Storage</i> (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 187 (1998).</p>	<p>This contention began by identifying the applicable financial assurance requirements under Part 72 (10 C.F.R. §§ 72.22(e) and 72.40(a)(6)), and then argued that more detailed requirements under Part 50 (particularly 10 C.F.R. § 50.33(f)) also applied. <i>See</i> Attach. 1 at 27-31. The contention then identified, with specificity, <i>how</i> the application allegedly did not provide sufficient information to meet those financial assurance requirements. <i>See id.</i> at 32-38.</p> <p>In particular, the Petitioner asserted that 10 C.F.R. § 50.33(f) requires a “newly formed entity” to include the following precise information in its application:</p> <ul style="list-style-type: none"> (i) The legal and financial relationship it has or proposes to have with its stockholders or owners; (ii) Its financial ability to meet any contractual obligation to the entity which they (sic) have incurred or proposed to incur; and (iii) Any other information considered necessary by the Commission to enable it to determine the applicant’s financial qualifications. <p><i>Id.</i> at 30. The Petitioner also referenced Part 50, Appendix C and <i>additional specific informational requirements for newly formed entities</i>, including, among other things, an identification of specific sources of funds. <i>Id.</i> at 30-31. The Petitioner then went on to specifically describe the financial information contained in the application, pointing out why it did not satisfy the specific informational requirements discussed above. <i>Id.</i> at 32, 34. The Petitioner provided a clear explanation of how the information in the application did not comply with the allegedly relevant regulations. Therefore, the contention clearly alleged a regulatory violation that, if true, would make a difference in the outcome of the proceeding.</p>
2	<p>Utah “M”: Probable Maximum Flood (Attachment 2) and Accompanying</p>	<p>This contention began by identifying the applicable requirements for estimating the probable maximum flood under Part 72. <i>See</i> Attach. 2 at 96. The contention then discussed the applicant’s conclusion and estimation methodology. <i>See id.</i> at 96-97. The contention challenged that methodology, and did so with an expert</p>

Enclosure: Examples of Contentions Filed in Other NRC Proceedings

No.	Contention	Analysis
	<p>Affidavit (Attachment 2A)</p> <p><i>See Private Fuel Storage</i> (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 191-92 (1998).</p>	<p>affidavit that explained the basis for the alternative conclusions of Petitioner’s expert. <i>See id.</i> at 96-97; Attach. 2A (“Affidavit of David B. Cole”) ¶¶ 5-9.</p> <p>In particular, the expert Affidavit provided the specific basis (a much larger drainage area) for the expert’s position that the 100-year flood and the probable maximum flood have peaks that are about “twice” the values provided by the Applicant. Attach. 2A ¶ 6. The contention and affidavit quantified the extent to which the Applicant allegedly underestimated the Probable Maximum Flood, contrary to 10 C.F.R. § 72.98 and other specific Part 72 requirements. <i>See</i> Attach. 2 at 96-97. Therefore, the contention clearly alleged a regulatory violation that, if true, would make a difference in the outcome of the proceeding.</p>
3	<p>New Jersey Metal Fatigue Contention (Attachment 3)</p> <p><i>See AmerGen Energy Co., LLC</i> (Oyster Creek Nuclear Generating Station), LBP-06-07, 63 NRC 188, 204-207 (2006).</p>	<p>This contention alleged that, under 10 C.F.R. § 50.55a(c)(4), “the applicable [American Society of Mechanical Engineers, or “ASME”] Code Edition and Addenda for a component of the reactor coolant pressure boundary continue to be that code Edition and Addenda that were required by Commission regulations for such component at the time of issuance of the construction permit.” Attach. 3 at 7. As a result, under the ASME Code specifications that existed when the Applicant’s construction permit had been granted, the Applicant would have been required to meet “the allowable fatigue usage factor of 0.8 for the reactor pressure vessel.” <i>Id.</i> at 8. Petitioner then identified specific data from the application that exceeded this value. <i>Id.</i></p> <p>Although the Board did not admit the contention because it determined that the Petitioner’s interpretation of the regulations was erroneous, the contention nevertheless is an example of a contention that proffered a specific regulatory requirement, an interpretation of the regulations that (albeit wrongly) suggested that a particular allowable fatigue usage factor must be used, and showed that, under the Applicant’s own analysis, certain components in the plant did not meet that particular standard. Therefore, the contention clearly alleged a regulatory violation that, if true, would make a difference in the outcome of the proceeding.</p> <p>The Board’s decision not to admit this contention makes it clear</p>

Enclosure: Examples of Contentions Filed in Other NRC Proceedings

No.	Contention	Analysis
		that the admissibility standards establish a threshold more demanding than a mere assertion of a potential issue or regulatory violation.
4	<p>State of Oklahoma “Area of Concern” regarding Noncompliance with Part 20 (Attachment 4)</p> <p><i>Sequoyah Fuels Corp.</i> (Gore, Oklahoma Site), LBP-04-30, 60 NRC 665 (2004).¹</p>	<p>SFC proposed to dispose of both 11e.(2) byproduct material (<i>i.e.</i>, mill tailings) and <i>non</i>-11e.(2) byproduct material in a disposal cell designed in accordance with 10 C.F.R. Part 40, Appendix A requirements for mill tailings (<i>i.e.</i>, 11e.(2) byproduct material). Oklahoma specifically alleged that 10 C.F.R. Part 20 requirements governing “radiological criteria for license termination” (Part 20, Subpart E), rather than Part 40, Appendix A, should be applied to the <i>non</i>-11e.(2) byproduct material. Attach. 4 at 18. Oklahoma stated:</p> <p>[I]t would be contrary to the [Part 20] Subpart E regulations to exclusively apply . . . Part 40, Appendix A to the non-11(e)(2) waste Because NRC Staff has determined that the SFC site contains both 11(e)(2) and non-11(e)(2) waste, the provisions of 10 C.F.R. Part 20 relating to license termination apply equally to the SFC site.</p> <p>SFC is required to demonstrate compliance with the license termination rules in Part 20 in order to receive approval to decommission the site. . . .</p> <p>SFC wholly failed to address its compliance with Part 20 in the [Remediation Plan].</p> <p>Attach. 4 at 18-19.</p> <p>This is an example where a Petitioner clearly stated and supported an alleged regulatory violation by pointing out that SFC was proposing to dispose of materials subject to Part 20 under criteria derived from Part 40, Appendix A governing 11e.(2) byproduct material (mill tailings). Therefore, the contention clearly alleged a regulatory violation that, if true, would make a difference in the outcome of the proceeding.</p>

¹ Morgan Lewis, on behalf of Sequoyah Fuels Corporation (“SFC”) did not challenge the admissibility of Oklahoma’s “areas of concern” under the former Subpart L rules. There is no decision on admissibility, but instead the decision cited above accepted the settlement proposed by the State and SFC.

Enclosure: Examples of Contentions Filed in Other NRC Proceedings

No.	Contention	Analysis
5	<p>Orange County Contention “TC-2”: Inadequate Criticality Prevention (Attachment 5)</p> <p><i>Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant), LBP-99-25, 50 NRC 25, 35-36 (1999).</i></p>	<p>Petitioner challenged a proposed license amendment affecting the licensee’s spent fuel pools (“SFPs”). The contention began by identifying the relevant regulatory requirement in General Design Criterion (“GDC”) 62, set forth in Part 50, Appendix A. Attach. 5 at 10. Under GDC 62, “Criticality in the fuel storage and handling system <i>shall be prevented by physical systems or processes</i>, preferably by use of geometrically safe conditions.” (Emphasis added.) The contention explained how the licensee’s proposal to prevent criticality in SFPs, in part through <i>administrative</i> limits on the burnup and enrichment of spent fuel assemblies in the pools, allegedly violated the requirement to use “physical systems or processes,” rather than administrative measures. <i>See</i> Attach. 5 at 10-12.</p> <p>Thus, Petitioner alleged, with a reasoned factual basis and supporting expert opinion, a specific discrepancy between the Applicant’s proposed criticality controls and the requirements of GDC 62. Therefore, the contention clearly alleged a regulatory violation that, if true, would make a difference in the outcome of the proceeding.</p>

Attachment 1

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of:	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	ASLBP No. 97-732-02-ISFSI November 23, 1997

**STATE OF UTAH'S CONTENTIONS ON THE
CONSTRUCTION AND OPERATING LICENCE APPLICATION
BY PRIVATE FUEL STORAGE, LLC FOR
AN INDEPENDENT SPENT FUEL STORAGE FACILITY**

Pursuant to 10 CFR § 2.714(b), the State of Utah hereby submits its contentions regarding the construction and operating license application by Private Fuel Storage, LLC's for an Independent Spent Fuel Storage Installation on the Skull Valley Band of Goshutes reservation, Utah. Contentions regarding general NEPA issues, the intermodal transfer site, quality assurance, financial assurance, emergency planning, geotechnical and seismic issues are supported by the Declaration of Lawrence White, PE, Executive Vice President and Senior Program Manager of Versar, Inc., attached hereto as Exhibit 1. Contentions regarding NRC dose limits, facilitation of

E. Financial Assurance.

CONTENTION: Contrary to the requirements of 10 CFR §§ 72.22(e) and 72.40(a)(6), the Applicant has failed to demonstrate that it is financially qualified to engage in the Part 72 activities for which it seeks a license.⁸

BASIS: A Part 72 application must state "information 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." 10 CFR §72.22(e).

The Commission will issue a license upon a finding that "the applicant for an ISFSI or MRS is financially qualified to engage in the proposed activities in accordance with the regulations of this part." 10 CFR § 72.40(a)(6).

The Part 72 standard, which is very general, may be interpreted by reference to the standards for financial qualifications set forth in 10 CFR Part 50 and Appendix C. A recent decision by the Licensing Board, interpreting the financial requirements in 10 CFR Part 70, illustrates the reasons why it is appropriate to apply the Part 50 standards to PFS. See Louisiana Energy Services, L.P. (Claiborne Enrichment Center), 44 NRC 333 (1996) (appeal pending) (hereafter "Claiborne"). In that case, the Licensing Board relied on the Part 50 regulations to review the financial qualifications of a newly formed special purpose entity without an operating record in a Part 70 licensing action.

⁸ This contention is supported by the Declaration of Lawrence A. White, attached hereto as Exhibit 1.

Under Part 70, the Commission will approve a license if it determines that "the Applicant appears to be financially qualified to engage in the proposed activities in accordance with the regulations of this part." 10 CFR §72.23(a)(5). The Part 50 standard contains very similar language, requiring the Commission to consider whether "[t]he applicant is technically and financially qualified to engage in the proposed activities in accordance with the regulations in the chapter." 10 CFR § 50.40(b). In Claiborne, the Board turned to the rule of statutory construction that provisions that relate to the same subject matter should be construed *in pari materia*. Id. at 384, *citing* 2B Sutherland Stat. Const. §§ 51.05, 51.05 (5th ed. 1992). Moreover, the Board found the Part 50 and Part 70 regulations "essentially began as twins." Id. At 391. As the Board observed:

Although the paths of the regulations have diverged somewhat since 1967, the essence of the Part 70 and Part 50 regulations with respect to construction financing and the standard the Commission must apply in granting a license under these Parts has not significantly changed since the initial issuance of the regulations. At that time, because the critical language of the provisions was nearly identical, the provisions had the same basic meaning. Indeed, as the Director of Regulation's response to a congressional inquiry indicated, the Commission's financial qualifications reviews of Part 70 and Part 50 license applicants applied the same principles under both regulations at that time.

44 NRC at 391. Thus, the Board concluded that the regulations began with "the same basic meaning" that "has not significantly changed since the issuance of the regulations." Id. Finally, the Board found that Part 50 was applicable because the "fundamental purpose" of the Appendix C requirements, to protect public health and

safety is "equally involved" in the licensing of a nuclear plant and "the first privately owned enrichment facility in the United States." *Id.* at 392.

The same analysis is applicable under Part 72. First, the language of the Part 50 and Part 72 standards is identical, requiring the license applicant to demonstrate that it "is financially qualified." Moreover, the congruent history of the Part 50 and 70 standards, which the Board describes in detail at 42 NRC 384-391, is equally applicable to the development of the Part 72 standard. Until 1980, ISFSIs were regulated under Part 70. The "Information Handbook on Independent Spent Fuel Storage Installations," NUREG 1571 at 1-1, 2, gives a brief history of the development of Part 72 regulations:

ISFSI regulation was originally governed by 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material." In 1974, the Atomic Energy Commission (predecessor of the NRC) issued a regulatory guide on storage of spent fuel in ISFSIs, Regulatory Guide 3.24, "Guidance on the License Application, Siting, Design, and Plant Protection for an Independent Spent Fuel Storage Installation," which then supported 10 CFR Part 70.... In November 1980, the staff issued 10 CFR 72, "Licensing Requirements for the Storage of Spent Fuel in an Independent Spent Fuel Storage Installation," superseding 10 CFR Part 70 and Regulatory Guide 3.24 with respect to the regulation of spent fuel storage in ISFSIs.

Moreover, the "fundamental purpose" of the Part 50 standard is "equally involved" in this case, where a newly formed entity seeks permission to construct and operate a first-of-its kind, major nuclear facility for the long-term storage of thousands of tons of spent nuclear reactor fuel. Thus, Part 50 provides relevant guidance to

review whether this Applicant has demonstrated adequate financial assurance under Part 72.

The Applicant, Private Fuel Storage, LLC (PFS), is a Delaware limited liability company. LA at 1-4. The company was formed to construct and operate a privately owned ISFSI for the purpose of providing private centralized spent nuclear fuel storage to the nuclear utility industry. ER at 1.2-2. The Applicant is a newly formed special purpose entity without an operating record. Thus, the regulatory standards in Part 50 for financial qualifications of newly formed entities must be applied to PFS's license application.

Under Part 50.33(f) "[e]ach application for a construction permit or an operating license submitted by a newly-formed entity organized for the primary purpose of construction or operating a facility must also include information showing:

- (i) The legal and financial relationships it has or proposes to have with its stockholders or owners;
- (ii) Its financial ability to meet any contractual obligation to the entity which they (sic) have incurred or proposed to incur; and
- (iii) Any other information considered necessary by the Commission to enable it to determine the applicant's financial qualifications.

Additional guidance, provided in Part 50, Appendix C, describes the general kinds of financial data and other related information that will demonstrate the applicant's financial qualifications. In Appendix C, the Commission distinguishes between two classes of applicants: those which are established organizations (App C.I) and those that are newly formed entities (App C.II). PFS is a newly formed entity

without an established operating record and thus its financial qualifications should be reviewed under the criteria established in Appendix C.II.

As to the source of construction funds, Appendix C.II requires the applicant to specifically identify the source or sources upon which the applicant relies for the funds necessary to pay the cost of constructing the facility, and the amount to be obtained from each. With respect to each source, the applicant should describe in detail the applicant's legal and financial relationships with its stockholders, corporate affiliates, or other (such as financial institutions) upon which the applicant is relying for financial assistance.

When the Applicant relies on parent companies or corporate affiliates as a source of funding, it must also demonstrate "the financial capability of each such company or affiliate to meet its commitments to the applicant" and "[o]rdinarily, it will be necessary that copies of agreements or contracts among the companies be submitted." *Id.* Finally, the Applicant should "include in its application a statement of its assets, liabilities, and capital structure as of the date of the application." 10 CFR Part 50, App C.II. While Appendix C recognizes that construction costs will vary by the type of facility, it requires construction costs "be itemized by categories of cost in sufficient detail to permit an evaluation of its reasonableness." *Id.* App. C.I.⁹

The Applicant's financial qualifications to carry out the activities it seeks under this license application and the information the Applicant submitted to demonstrate its financial qualifications are deficient in the following respects:

⁹ Appendix C generally treats estimates of construction costs the same for established organizations and newly formed entities. 10 CFR § 50, App. C.II.A.1.

1. Information in the application about the legal and financial relationship among the owners of the limited liability company (*i.e.* the license Applicant) is appallingly deficient. The Applicant merely states it is "a limited liability company owned by eight U.S. utilities which serve more than 17 million customers in 21 states." LA at 1-3. These owners are not explicitly identified, nor are their relationships discussed, as required by 10 CFR §§ 50.33(c)(2) and 50.33(f) and Appendix C, § II. Instead, the only information provided by the Applicant which might conceivably be relevant to this requirement is a list seven nuclear utility officials who serve as Directors of PFS as of June 1997. LA at 1-10. It is not clear whether these individuals represent the owners of the business, or if so, what happened to the eighth owner. This extremely limited information does not even begin to satisfy the NRC's financial qualifications to engage in the Part 72 activities it seeks under this license application.

2. The Applicant is a limited liability company organized under the laws of Delaware. LA at 1-4. There is no evidence that the Applicant is anything more than a shell company devoid of any assets or capital. As part of the Applicant's demonstration of financial qualifications, the Applicant must be required to submit a current statement of its assets, liabilities, and capital structure. See 10 CFR Part. 50, App. C.II.

3. The Applicant has not taken into account the difficulty of allocating financial responsibility when casks are centrally stored and owned by different entities.

Further, the Applicant also does not address its financial responsibility as the "possessor" of spent fuel casks. The Applicant assumes that the "owner" of the spent fuel will retain responsibility for the fuel. However, the proposition that the originating reactor licensee retains assumption of responsibility for the fuel even when it is in the Applicant's possession create numerous problems. The Applicant intends that its facility will provide storage of spent fuel from commercial nuclear power reactors that are located throughout the United States. LA at3-1. A complex and unworkable liability scheme arises from the storage of fuel casks owned by a myriad of licensees. For example, how will liability, response and cleanup be allocated should there be an accident involving nuclear materials or a spill or release of nuclear materials. The potential for accidents given the surrounding hazardous military activities is not inconsequential. *See* State of Utah's Petition to Intervene, pp. 4, 13. Furthermore, the casks will be located less than four feet apart and will be "owned" by different licensees. This will make it exceedingly difficult to allocate liability and responsibility. The Applicant must address these issues as part of its financial qualification to undertake the licensed activities. 10 CFR § 72.22(e)

4. As the Licensing Board has observed, reasonably accurate cost estimates are important safety requirements under the financial qualifications regulations, because "a licensee in financially straitened circumstances would be under more pressure to commit safety violations or take safety 'shortcuts' than one in good

financial shape." Gulf States Utilities Co. (River Ben Station, Unit 1), LBP-95-10, 41 NRC 460, 473 (1995), *quoting* Gulf States Utilities Co. (River Ben Station, Unit 1), CLI-94-10, 40 NRC 43, 48 (1994). However, the Applicant has failed to show that it has the necessary funds to cover the "[e]stimated operating costs over the planned life of the ISFSI" as required by 10 CFR § 72.22(e)(2) because the application is devoid of specifics about financial information, including cost estimates.

For example, the License Application estimates total construction costs at \$100 million, "including site preparation; construction of the access road, administration building, visitors center, security and health physics building, operations and maintenance building, canister transfer building and storage pads; procurement of canister transfer and transport equipment; and transportation corridor construction." LA at 1-5. Similarly, in the ER, the Applicant aggregates all direct costs into one lump sum of \$100 million for "initial costs to site the facility, the costs to engineer and construct the facility and annual costs associated with the Tribal lease, maintenance, operation, transportation, security, license fees, and taxes." ER at 7.3-1, ER Table 7.3-1. The Applicant lists total life cycle cost for the facility and its operation at \$1.526 billion (40 year life) or \$1.125 billion (20 year life). *Id.*

Such vague and generalized cost estimates are insufficient to satisfy 10 CFR Part 50, App.C. § II, which requires that construction costs must be itemized by categories of cost in sufficient detail to permit an evaluation of its reasonableness. Indeed, the

Applicant's representations are meaningless, because they cannot be evaluated unless each portion of the construction costs is specified and the basis for each cost estimate is provided.

Moreover, PFS appears to have significantly underestimated construction costs. In 1993, the Department of Energy (DOE) considered locating a monitored retrievable storage installation (MRS) at the same Skull Valley Reservation. DOE proposed a dry cask storage MRS with a capacity of 15,000 MTU (42 USC § 10168(d)(4)), half the quantity of spent fuel proposed by the Applicant. DOE estimated the construction cost, in 1992-93 dollars, of a dry cask storage facility at \$530 million. Skull Valley Band of Goshutes MRS brochure, attached hereto as Exhibit 6. The Applicant's 1997 construction cost estimates are less than one fifth of DOE's 1993 estimates although the Applicant proposes to store twice as much spent fuel as the DOE MRS proposal. Itemization of costs and justification for the cost estimates are essential to estimate cost estimates.

5. Part of the Applicant's plan to obtain funding for its operations includes "equity contributions from PFSLLC members pursuant to Subscription Agreements." LA at 1-4. The Applicant indicates that each of the eight consortium members will contribute equity contributions of an additional \$6 million each for a total of \$48 million. LA at 1-5. However, the application does not include pertinent portions of subscription agreements or other legally binding commitments to give any assurance

that the Applicant will obtain the necessary funds or even the initial \$48 million. When the Applicant relies on its owner members (or its parent companies or corporate affiliates) to provide a source of funding, the Applicant must submit a copy of each Subscription Agreement between PFS and its member companies. See Part 50, Appendix C.II.

Moreover, the amount of equity contributions is dependent upon the number of members in the limited liability company; thus the amount of available funds is affected by any withdrawing utility member. In fact, the number of member utilities has already decreased since the formation of the consortium. PFS was initially organized with eleven utility members. The application itself mentions eight members but only identifies seven board members; apparently each board member represents a consortium member. The Applicant must demonstrate financial qualification prior to licensing the facility—not at some future date. See Claiborne, 44 NRC at 403. The Applicant's failure to document its funding source is one reason why this Applicant has not shown it either possesses the necessary funds or has reasonable assurance of obtaining or even retaining necessary funds for the activities sought under its license application. See 10 CFR § 72.22(e)

6. The Applicant also plans to raise additional capital through "Service Agreements" with customers. LA at 1-5. Based on the Applicant's own estimates, at a minimum it must raise an additional \$52 million just to complete construction. The

Applicant must demonstrate "reasonable assurance of obtaining the necessary funds" not simply identify a mechanism for obtaining funds. Furthermore, the terms of the service agreements are not even provided, including items such as costs, periodic terms, liability, performance, and breach clauses.

To show it has reasonable assurances of obtaining funds, the Applicant should document an existing market and the commitment of a sufficient number of service agreements to fully fund construction of the facility. The Applicant implies that 15,000 MTU of storage commitments would be adequate to fund construction. LA at 1-5. The Applicant has not substantiated how storage commitments for 15,000 MTUs would be adequate. In addition, there must be sufficient funds committed for operation, decommissioning, and contingencies for the number of casks contracted to fund construction.

7. The Applicant also mentions an option to finance construction costs through debt financing secured by service agreements. LA at 1-6. Similarly, debt financing will not be viable until a minimum value of service agreements is committed. Moreover, the Applicant will not be capable of securing debt financing without providing supporting documentation, including the service agreements. Thus, the Applicant failed to show that it has reasonable assurance of obtaining necessary funds through debt financing.

8. The License Application states that "on-going operations and maintenance costs . . . will be paid by the customer on an annual basis." LA at 1-6. Although the Applicant states that it will require financial information from its "customers," Id., it has not addressed funding contingencies in the event a customer breaches the service agreement or becomes insolvent while the customer's spent fuel is stored at the ISFSI. The Applicant does not provide reasonable assurance that adequate funds are available to ensure the safe operation and maintenance of spent fuel storage in the event of insolvencies or even while disputes are being resolved.

Attachment 2

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of:	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	ASLBP No. 97-732-02-ISFSI November 23, 1997

**STATE OF UTAH'S CONTENTIONS ON THE
CONSTRUCTION AND OPERATING LICENCE APPLICATION
BY PRIVATE FUEL STORAGE, LLC FOR
AN INDEPENDENT SPENT FUEL STORAGE FACILITY**

Pursuant to 10 CFR § 2.714(b), the State of Utah hereby submits its contentions regarding the construction and operating license application by Private Fuel Storage, LLC's for an Independent Spent Fuel Storage Installation on the Skull Valley Band of Goshutes reservation, Utah. Contentions regarding general NEPA issues, the intermodal transfer site, quality assurance, financial assurance, emergency planning, geotechnical and seismic issues are supported by the Declaration of Lawrence White, PE, Executive Vice President and Senior Program Manager of Versar, Inc., attached hereto as Exhibit 1. Contentions regarding NRC dose limits, facilitation of

M. Probable Maximum Flood

CONTENTION: The application fails to accurately estimate the Probable Maximum Flood (PMF) as required by 10 CFR § 72.98, and subsequently, design structures important to safety are inadequate to address the PMF; thus, the application fails to satisfy 10 CFR § 72.24(d)(2).

BASIS: The Applicant inaccurately determined a drainage area of 26 square miles in its estimate of PMF. ER at 2.5.1, and SAR at 2.4.1.2. The facility is proposed to be located in Section 6, Township 5 South, Range 8 West. The topography of Section 6 is fairly flat from east to west with a large drainage area of over 240 square miles, producing runoff that will cross the depression in the northeast part of the section. The Applicant's 26 square mile estimate is inaccurate because the Applicant failed to account for all the drainage sources that will impact the ISFSI site during extraordinary storm events. 10 CFR § 72.98(a)-(c). See Affidavit of David B. Cole, attached herein as Exhibit 12. For example, the Applicant's drainage area does not take into account high canyons south of and including Deadman Canyon on the western slope of the Stansbury Mountains that produce significant runoff in wet years. Id. at ¶ 6. Consequently, the Applicant's figures for the 100-year flood and the PMF are undervalued by at least half.

Failure to adequately estimate the PMF results in the diversion berm being under-designed and does not comply with 10 CFR § 72.24(d)(2). Due to this inaccurate

assessment, the need to implement emergency plans may be underestimated. The Applicant's assertion that the facility area is "flood dry" (see ER at 2.5-6) may not hold true when calculations are recomputed to include the larger, more realistic drainage area. Moreover, a facility not accurately protected from flooding will impact the operation, maintenance and ultimate safety of the ISFSI. Furthermore, there is no justification to show that flood water will not curl around the berm, which will only be placed at the south end and portions of the southwest end of the ISFSI.

A number of consequences important to safety may occur because of flooding or an inadequate berm construction and location. The access road may be flooded or washed out, preventing necessary operations personnel or emergency service providers access to the site. Hence the Applicant would not be able to cope with emergencies as required by 10 CFR § 72.24(k). If the flooding is not prevented, translation motion of the storage pad and building foundations could occur, resulting in structural damage or failure. Therefore, the Applicant would not meet the requirement of 10 CFR § 72.24(d)(2) that structures, systems and components provide for the prevention and mitigation of accidents caused by natural phenomena. Flooding of the ISFSI would also transport onsite chemical and radiological contaminants to offsite soils and ground and surface waters, thus violating 10 CFR § 72.24(l).

Attachment 2A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of:	Docket No. 72-22-ISFSI
PRIVATE FUEL STORAGE, LLC (Independent Spent Fuel Storage Installation)	ASLBP No. 97-732-02-ISFSI

STATE OF UTAH)
) ss.
COUNTY OF SALT LAKE)

AFFIDAVIT OF DAVID B. COLE

I, DAVID B. COLE, being first duly sworn upon oath, depose and state as follows:

1. I am employed as Engineer Specialist IV at the Division of Water Resources (Division), Hydrology Section, Utah Department of Natural Resources, and have worked at this Division since November, 1971.

2. I earned a Bachelors of Science degree in Civil Engineering in 1976, from University of Utah and have been a licensed professional engineer since 1981.

3. I assisted in the preparation of, and have reviewed, the State of Utah's Contentions on flooding. The technical facts presented in those contentions are true and correct to the best of my knowledge, and the conclusions drawn from those facts are based on my best professional judgment.

4. My duties at work have included the calculation of probable maximum floods for the design of spillways. I have also written software to perform these calculations that is used by engineers in our Division and in the Division of Water Rights. Additionally, I have worked on flood studies for the Grantsville Reservoir, located in Tooele Valley with basin and range characteristics similar to those of Skull Valley and within 12 miles of the proposed ISFSI site, as well as other water supply studies.

5. I evaluated the surface runoff potential for probable maximum flood (PMF) in the area of the proposed independent spent fuel storage installation (ISFSI) site located in the center of Section 6, Township 5 South, Range 8 West, SLB&M, Tooele County, Utah. I also reviewed the Hydrology section (Chapter 2 at 2.5) of the Private Fuel Storage Facility Environmental Report (ER), the Surface Hydrology section (Chapter 2 at 2.4) of the Safety Analysis Report, and the applicant's calculation package relating to 100-year flood and probable maximum flood information.

6. The 26 square mile drainage area the applicant used to compute the PMF for what the ER calls Basin 1, which cuts across the access road east of the storage

facility (*see* SAR, figure 2.4-1), is far too small. Based on my experience and training and evaluation of United States Geological Survey 7.5 minute quadrangle sheets and other technical tools and reports, I have concluded a large drainage with an area of over 240 square miles will produce runoff that will cross the depression in the northeast part of Section 6, which otherwise is fairly flat east to west. Included in this large drainage are high canyons such as Indian Hickman and Deadman Canyon that drain the western slope of the Stansbury Mountains, canyons along the western slope of the Onaqui Mountains, the northern slope of the Sheeprock Mountains, the northeastern slope of the Davis Mountain, and much of the lower semi-arid land in the valley. *See* drainage map attached hereto as Attachment A. During wet years this drainage produces significant runoff which moves north toward the middle of the valley where it mixes with the discharge of numerous springs. Based on a 240 square mile drainage area, the 100- year flood has a peak more than twice the 2,065 cfs figure calculated by the applicant (*see* SAR at 2.4-11), and the probable maximum flood has a peak close to twice the 31,934 cfs figure calculated by the applicant (*see* SAR at 2.4-11). The access road and other structures designed for only half the expected flow of a 100-year flood would likely wash out as floodwaters impact the roadway culverts. Moreover, the retaining berms expected to protect the road and facility during the probable maximum flood may fail if they are under-designed.

7. I am aware of the conditions which have occurred in Skull Valley in much wetter than average years, such as the winter and spring of 1983-84, when the large depressions south of the access road filled with runoff, the ground became saturated, and most of Skull Valley produced runoff. The much wetter than normal conditions which would occur during a probable maximum flood event are expected to result in the depressions filling with runoff. The water produced from the southern end of Skull Valley could only drain through the depression near the northeast part of Section 6, the site of the proposed ISFSI.

8. In 1983 the Great Salt Lake started to rise sharply and peaked June 1, 1986, at an elevation of 4211.85 feet, which is the lake's historical high. This caused major flooding in some areas near the lake, including the loss of the Southern Pacific tracks which had been located on a causeway in the lake. The rail tracks on the southern shore of the lake were threatened with flooding on several occasions between 1983 and 1986 as the lake continued to rise.

9. The United States Geological Survey Timpie 7.5 minute quadrangle sheet shows the elevation of the underpass on Interstate 80 at Rowley Junction to be seven feet higher than the Great Salt Lake's historic high, and the elevations of the railroad north of Interstate 80 in the same vicinity to be between three and eight feet higher than the lake's historic high. Wind action on occasion has created

waves swamping areas near the shoreline, particularly in wetter than average years.

FURTHER AFFIANT SAYETH NOT.

DATED this November 21, 1997.

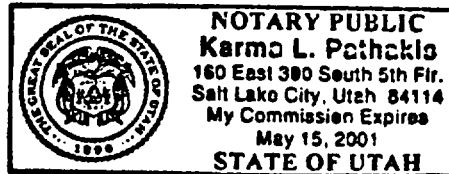
David B. Cole

DAVID B. COLE

Voluntarily signed and sworn to before me this 21st day of November, 1997,
by the signer, whose identity is personally known to me or was proven to me on
satisfactory evidence.

Karma L. Pathakia
NOTARY PUBLIC

Residing at: SCC Utah
My Commission expires: 5-15-2001



Attachment 3

**State of New Jersey**

Department of Environmental Protection
PO Box 402
Trenton, NJ 08625-0402

Office of the Secretary
Rulemakings and
Adjudications Staff

Richard J. Codey
Acting Governor

Bradley M. Campbell
Commissioner
Tel. # (609) 292-2885
Fax # (609) 292-7695

November 14, 2005

Office of the Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington D.C. 20555-0001

Attention: Rulemaking and Adjudications Staff

Subject: Request for Hearing and Petition for Leave to Intervene per 10 CFR 2
AmerGen Oyster Creek Nuclear Generating Station License Renewal Application
(Docket 50-219)

Dear Secretary:

AmerGen Energy Company LLC submitted the Oyster Creek License Renewal Application (Application) to the U. S. Nuclear Regulatory Commission (NRC) on July 22, 2005. On September 9, 2005, the NRC determined that the application was complete and acceptable for docketing. Notice appeared in the Federal Register on September 15, 2005 commencing the sixty day period for requesting a hearing per 10 CFR 2.

The Oyster Creek nuclear generating station is located in Lacey Township, New Jersey. Operations began in 1969, with the current license set to expire on April 9, 2009. When the plant was built, the local population understood that the operation (and associated risks) would continue for forty years. If the NRC approves the license extension, Oyster Creek will be the first commercial nuclear power plant that may operate beyond forty years. Although the NRC has granted license extensions to other nuclear power plants, their initial licenses would not have expired until after April 9, 2009.

The New Jersey Department of Environmental Protection requests a hearing based on several contentions. According to 10 CFR 2.309(d)(2), standing is automatically granted to the State of New Jersey. Our representative for the contentions is John Covino, Deputy Attorney General. DAG Covino's mailing address is: Environmental permitting and Counseling Section, Division of Law, Hughes Justice Complex, Trenton, New Jersey 08625.

The Department is responsible for providing radiation protection for individuals in New Jersey through establishing, implementing and enforcing radiation protection measures and standards. Its functions and duties are performed pursuant to the Radiation Protection Act, N.J.S.A. 26:2D-1 et seq., the general purpose of which is to protect residents of the State of New Jersey from unnecessary radiation, and the Radiation Accident Response Act, N.J.S.A. 26:2D-37 et

Information regarding specific threats to the Oyster Creek facility needs to be available for SAMA consideration. Currently, the security classification of this information ranges from safeguards, to "need to know", to secret. The DEP requests that information related to the specific design of Oyster Creek and its ability to withstand aircraft attacks, as well as the specific vulnerability of the spent fuel pool be made available to agency officials with sufficient clearance. Additionally, a summary of the information, in a form that could be considered as unclassified, be made publicly available.

10 CFR 2.309(f)(vi) "Provide sufficient information to show that a genuine dispute exists."

AmerGen's license renewal application does not address the DBT analysis, yet there is an on-going evaluation of specific plant vulnerabilities. Under 10 CFR 51, SAMA is part of the license renewal. There appears to be a genuine dispute about whether the bounding of SAMA is part of license renewal. The Department requests that SAMA up to and including the DBT, be included in the license renewal because of the importance of assuring the public that aircraft and spent fuel scenarios were considered and addressed.

Contention 2 – Metal Fatigue

10 CFR 2.309(f)(i) "Provide a specific statement of the issue of law or fact to be raised or controverted."

10 CFR 50.55a(c)(4) states, "For a nuclear power plant whose construction permit was issued prior to May 14, 1984 the applicable Code Edition and Addenda for a component of the reactor coolant pressure boundary continue to be that Code Edition and Addenda that were required by Commission regulations for such component at the time of issuance of the construction permit." The Oyster Creek licensee appears unwilling to maintain this requirement for the proposed license extension period as presented in the application submitted under oath and affirmation on July 22, 2005. As a result, the licensee is also in violation of 10 CFR 54.21(a)(3) which states that the licensee must, as part of its application, "For each structure and component ... demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation" CLB is defined in 10 CFR 54.3(a) as the current licensing basis for the plant.

10 CFR 2.309(f)(ii) "Provide a brief explanation of the basis for the contention."

In Section 4.3 of the Oyster Creek license renewal application, the licensee makes extensive use of a cumulative usage factor (CUF) for fatigue evaluations for the reactor coolant pressure boundary and associated components of 1.0 rather than the 0.8 CUF specified by the Code Edition and Addenda that were required by Commission regulations at the time of issuance of the construction permit. Specifically, as stated on page 4-24 of the renewal application, "...the Oyster Creek reactor vessel was designed in accordance with ASME Code Sections I and VIII

(i.e., it pre-dated ASME Code Section III, including Code Case Interpretations 1270N and 1273N). Sections 3.1.26, 5.2.2.1 and 5.3.1.1 of the Oyster Creek UFSAR document the original RPV Purchase Specification reactor vessel design requirements, including the allowable fatigue usage factor of 0.8 for the reactor pressure vessel. Furthermore, as stated on page 4-26 of the renewal application, "Three of the reactor vessel components, the closure bolts, RPV support skirt, and the RPV basin seal skirt (refueling bellows) support, indicated fatigue usage over the allowable value after 60 years of operation when using the original fatigue methodology from the reactor vessel stress report. The original fatigue analysis pre-dated the issuance of ASME Section III and established conservative fatigue rules and acceptance criterion for CUF of 0.8". Additionally, Table 4.3.1-2 of the renewal application shows the Feedwater Nozzle Forging and the Recirculation Outlet Nozzle CUFs exceed 0.8 for the proposed period of extended operation. While Table 4.3.4-1, Note 1, states that an updated ASME Code fatigue methodology was used for CUF calculations, even so, this table shows the RPV outlet nozzle CUF exceeds 0.8. The extent of which reactor coolant pressure boundary components would exceed a CUF of 0.8 for the period of extended operation, when calculated as specified by the Code Edition and Addenda that were required by Commission regulations at the time of issuance of the construction permit, is undeterminable based on the information provided by the applicant and is not specified in the applicant's license renewal application. Using a CUF of 1.0 would be outside Oyster Creek's current licensing basis (CLB) and would result in a 25 percent increase in allowable fatigue life beyond that specified by the Code of record for Oyster Creek, thereby significantly reducing the margin of safety for metal fatigue. This is in violation of 10 CFR 54.21(a)(3) which states that the licensee must, as part of its application, "For each structure and component ... demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation."

10 CFR 2.309(f)(iii) "Demonstrate that the issue raised in the contention is within the scope of the proceeding."

10 CFR 54.21 specifies the technical information required to be included in the license renewal application. Time-limited aging analyses, which includes analysis for metal fatigue, is necessary as part of this requirement as stated in 10 CFR 54.21(c). Demonstrating that the effects of aging will be adequately managed consistent with the CLB is necessary as stated in 10 CFR 54.21(a)(3).

10 CFR 2.309(f)(iv) "Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding."

Using a CUF of 1.0 would be outside Oyster Creek's current licensing basis (CLB) and would result in a 25 percent increase in allowable fatigue life beyond that specified by the Code of record for Oyster Creek, thereby significantly reducing the margin of safety for metal fatigue. 10 CFR 54.33(d) states, "The licensing basis for the renewed license includes the CLB, as defined in § 54.3(a); the inclusion in the licensing basis of matters such as licensee commitments does not

change the legal status of those matters unless specifically so ordered pursuant to paragraphs (b) or (c) of this section". In addition, 10 CFR 54.33(b) states, "Each renewed license will be issued...as the Commission deems appropriate and necessary to help ensure that systems, structures, and components subject to review in accordance with § 54.21 will continue to perform their intended functions for the period of extended operation. In addition, the renewed license will be issued...as the Commission deems appropriate and necessary to help ensure that systems, structures, and components associated with any time-limited aging analyses will continue to perform their intended functions for the period of extended operation".

10 CFR 2.309(f)(v) Provide a concise statement of the alleged facts or expert opinions which support the position on the issue and on which the petitioner intends to rely at hearing, together with any references to the specific sources and documents."

Specifically, as stated on page 4-24 of the renewal application, "...the Oyster Creek reactor vessel was designed in accordance with ASME Code Sections I and VIII (i.e., it pre-dated ASME Code Section III, including Code Case Interpretations 1270N and 1273N). Sections 3.1.26, 5.2.2.1 and 5.3.1.1 of the Oyster Creek UFSAR documents the original RPV Purchase Specification reactor vessel design requirements, including the allowable fatigue usage factor of 0.8 for the reactor pressure vessel". Furthermore, as stated on page 4-26 of the renewal application, "Three of the reactor vessel components, the closure bolts, RPV support skirt, and the RPV basin seal skirt (refueling bellows) support, indicated fatigue usage over the allowable value after 60 years of operation when using the original fatigue methodology from the reactor vessel stress report. The original fatigue analysis pre-dated the issuance of ASME Section III and established conservative fatigue rules and acceptance criterion for CUF of 0.8". Additionally, Table 4.3.1-2 of the renewal application shows the Feedwater Nozzle Forging and the Recirculation Outlet Nozzle CUFs exceed 0.8 for the proposed period of extended operation. While Table 4.3.4-1, Note 1, states that an updated ASME Code fatigue methodology was used for CUF calculations, even so, this table shows the RPV outlet nozzle CUF exceeds 0.8. The extent by which reactor coolant pressure boundary components would exceed a CUF of 0.8 for the period of extended operation, when calculated as specified by the Code Edition and Addenda that were required by Commission regulations at the time of issuance of the construction permit, is undeterminable based on the information provided by the applicant and is not specified in the applicant's license renewal application.

Documentation in support of this contention includes the current Oyster Creek licensing basis (CLB), the Oyster Creek License Renewal Application, the Oyster Creek UFSAR, the Oyster Creek FDSAR, ASME Codes Section I and VIII and associated GE Specifications (as specified and described in FSAR Section 5.3.1.1), 10 CFR Part 50, and 10 CFR Part 54.

10 CFR 2.309(f)(vi) "Provide sufficient information to show that a genuine dispute exists on a material issue of law or fact."

The license renewal application, page 4-26 states, "...that a RCPB component is acceptable for

continued service if the CUF is less than or equal to 1.0." RCPB refers to Reactor Coolant Pressure Boundary. As discussed above, 10 CFR 50.55a(c)(4) and 10 CFR 54.21(a)(3) lead to the different conclusion that a RCPB component at Oyster Creek is acceptable for continued service if the CUF is less than or equal to 0.8.

Contention 3 – Combustion Turbine

10 CFR 2.309(f)(i) "Provide a specific statement of the issue of law or fact to be raised or controverted."

AmerGen's compliance with 10 CFR 50.63, "Loss of All Alternating Current Power," relies upon the combustion turbines as a last resort for an alternating current power supply. With respect to the combustion turbines, the Oyster Creek License Renewal Application states "The Forked River Combustion Turbines (FRCTs), first installed in 1988, are owned, operated, and maintained by FirstEnergy and provide peak loading to the grid. Consistent with Oyster Creek Generating Station (OCGS) commitments, and as reviewed and approved by the NRC in its letters dated August 23, 1991 and February 12, 1992, the FRCTs also provide a standby source of alternate AC power for the Oyster Creek station in the event of a Station Blackout (SBO). The Interconnection Agreement between AmerGen and First Energy guarantees that SBO electric power from the FRCTs is available, when needed, to fulfill these objectives."

It is the Department's contention that this arrangement will NOT assure that:

1. First Energy will continue to operate the combustion turbines during the proposed extended period of operation at Oyster Creek.
2. The combustion turbines will be maintained, inspected and tested in accordance with AmerGen's aging management plan that, when developed, will become part of the license renewal commitments. There will be a reliance on a competitor to manage and perform this work with little opportunity for AmerGen to oversee any of it.
3. All deficiencies encountered by First Energy in the course of operating, maintaining, inspecting and testing the combustion turbines will be entered into a corrective action program that meets the requirements of 10 CFR 50 Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants.

10 CFR 2.309(f)(ii) "Provide a brief explanation of the basis for the contention."

10 CFR 54.33(b) states, "Each renewed license will be issued...as the Commission deems appropriate and necessary to help ensure that systems, structures, and components subject to review in accordance with § 54.21 will continue to perform their intended functions for the period of extended operation. In addition, the renewed license will be issued...as the Commission deems appropriate and necessary to help ensure that systems, structures, and

Attachment 4

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

May 14, 2003 (3:00PM)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)

SEQUOYAH FUELS CORPORATION,)

(Request to Amend Source Material
License No. SUB-1010))

Docket No. 40-8027

May 14, 2003

STATE OF OKLAHOMA'S
REQUEST FOR HEARING

W.A. DREW EDMONDSON
ATTORNEY GENERAL OF OKLAHOMA

KELLY HUNTER BURCH
ASSISTANT ATTORNEY GENERAL
ENVIRONMENTAL PROTECTION UNIT
4545 N. Lincoln Blvd., Suite 260
Telephone: (405) 521-4274
Telefax: (405) 528-1867

Dated: May 14, 2003

Decommissioning) LBP-99-46, 50 N.R.C. 386, 404 (1999) (holding that substantially similar Areas of Concern were germane in a Request for Hearing on SFC's Decommissioning Plan).

C. Oklahoma's Areas of Concern with Regard to the License Amendment.

Under Subpart L, the State's pleading burden is modest and the State must only present its areas of concern with enough specificity so that the Presiding Officer may determine whether the concerns are truly relevant--i.e., "germane"--to the license amendment at issue. See e.g., Babcock and Wilcox Co. (Pennsylvania Nuclear Services Operations, Parks Township, Pennsylvania), LBP-94-4, 39 NRC 47, 52 (1994). The State is not expected to set forth all concerns or substantiate its concerns exhaustively before it has access to the hearing file. In the Matter of Sequoyah Fuels Corporation, 53 N.R.C. at 16. The State is required to identify the areas of concern it wishes to raise in the proceeding in order to provide the presiding officer with the minimal information needed to ensure that the issues it desires to litigate are germane to the licensing proceeding. Id. A hearing file is not complete if the staff has not completed its environmental impact statement and safety evaluation report for the Site. Id.

The State will identify numerous areas of concern with the RP for the SFC site in the following paragraphs. These areas of concern contain enough detail to allow the Presiding Officer to determine whether the Areas of Concern are relevant and germane to the Proceeding. The State may identify additional areas of concern after it has the opportunity to review the complete hearing file, which will not include the Groundwater Monitoring and

Corrective Action Plan, Responses to Requests for Additional Information, Environmental Impact Statement and Safety Evaluation Report for some time. The Environmental Impact Statement is of particular importance to the State at the SFC site because of the nature of the contamination, the Site's proximity to important natural resources owned and managed by the State, and the obvious potential for migration of contaminants from the Site which will result in injury to those resources.

SFC's proposed plan for cleanup and disposal of materials contaminated by radiological and non-radiological pollutants is vague and often conflicting regarding the cell design, cleanup levels, groundwater monitoring, waste preparation, waste characterization, and site characterization. It does not contain the level of detail necessary to demonstrate that the RP will protect human health and the environment. Numerous areas of documented contamination are improperly omitted from the RP, such as certain defined streams and drainages, an injection well, land application areas, and fertilizer pond areas. As a result of SFC's failure to provide a cogent plan, as set forth in more detail below, it is practically impossible to analyze the full impact of the proposal on Oklahoma's interests. The lack of an adequate plan, in and of itself, poses a serious threat to the State's interests. Additionally, however, the State has identified the following areas of concern:

- (1) 10 CFR Part 20 Should be Applied to the Decommissioning of the Site.

Because SFC intends to dispose of non-11e.(2) byproduct material wastes in a disposal cell, SFC made no distinction between the 11(e)(2) materials and the non-11(e)(2)

materials in the RP. Reclamation Plan Sequoyah Facility, page 1-4. While it is clear that use of RIS-2000-23 is appropriate for determining whether the non-11(e)(2) material can be disposed of in an 11(e)(2) disposal cell, this guidance does not resolve significant issues at the SFC site, such as determining the appropriate dose criteria and cleanup levels for soil and groundwater contaminated by non-11(e)(2) waste.

Contrary SECY-02-0095⁵, SFC is proposing that the entire Site be decommissioned solely in accordance with the Standard Review Plan for the Reclamation of Mill Tailings Site Under Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (NUREG 1620) and 10 CFR Part 40, Appendix A. SFC assumes that the rules for milling operations govern decommissioning of the Site, yet these rules were not intended nor designed to apply to waste with radiological and non-radiological characteristics like the SFC waste.⁶ For example, NUREG 1620 provides that “[t]his standard review plan is intended to cover only those aspects of the NRC regulatory mission related to the reclamation of mill tailings sites, including soil and ground-water cleanup, at conventional uranium mills.”

⁵ The Executive Director of Operations therein stated that “[t]he LTR would apply to non-11e(2) byproduct material, and Appendix A to the mill tailings. The release criteria for mill tailings and source material are both protective, but different in their approaches. SFC could request an exemption from one set of regulations, assuming the exemption criteria would be met.” SECY-02-0095, p. 7, fn. 6. SFC has not requested an exemption nor attempted to demonstrate that exemption criteria could be met.

⁶ According to the Differing Professional View in SECY-02-0095, it is evident that the Sequoyah facility wastes are very different, radiologically, from uranium mill tailings. Uranium and thorium concentrations are two orders of magnitude higher for the Sequoyah wastes, and present an increased radiological risk, while radium concentrations are less than half that typical of uranium mill tailings. For the Sequoyah facility wastes, the primary radiological concern would be the uranium and thorium content, rather than radon diffusion into the environment, as stated in sec. 2.(a) of UMTRCA. SECY-02-0095 Attachment 9.

While Appendix A and NUREG 1620 contain certain requirements that are appropriate for decommissioning the SFC site, it is clear that the standards were designed for mill tailings sites and not to protect against all the hazards associated with a site of this nature. Conversely, the Part 20 rules for license termination were designed specifically for facilities such as the SFC site.

Further, assuming for the sake of argument that a portion of the waste at the SFC site qualifies as 11(e)(2) byproduct material, it would be contrary to the Subpart E regulations to exclusively apply the provisions NUREG 1620 and 10 CFR Part 40, Appendix A to the non-11(e)(2) waste and the portions of the Site which are contaminated by non-11(e)(2) waste. Because NRC Staff has determined that the SFC site contains both 11(e)(2) and non-11(e)(2) waste, the provisions of 10 CFR Part 20 relating to license termination apply equally to the SFC site.

SFC is required to demonstrate compliance with the license termination rules in Part 20 in order to receive approval to decommission the Site. Further, given the increase radiological risk at the SFC site, the NRC should require compliance with Part 20 in order to protect public health, safety and the environment.⁷ Additionally, even if SFC were able to demonstrate compliance with Appendix A for construction of the disposal cell, SECY-02-0095 provides that the remainder of the Site is required to be released for unrestricted use

⁷ This fact was recognized by Chairman Meserve in approving the reclassification of waste at the SFC site when he stated that while the increased radiological concentrations do not affect the waste classification, “[i]t does indicate, however, that staff will have to consider the special character of the wastes in assuring protection of public health and safety.” Commission Voting Record on SECY-02-0095 (July 25, 2002).

under the Part 20 and/or Appendix A of Part 40.

SFC wholly failed to address its compliance with Part 20 in the RP. SFC's failure to apply Part 20 to the design of its RP is contrary to law and poses an unreasonable danger to the public health and safety. Further, as demonstrated below, SFC's plan does not meet the Part 40 requirements and a disposal cell should not be constructed at the Site. Instead, the entire Site should be decommissioned for unrestricted release.

(2) SFC Failed to Establish Proper Dose and Cleanup Criteria.

The provisions of SFC's Reclamation Plan dealing with soil cleanup and dose criteria are not adequate to protect public health, safety and the environment. SFC is required to comply with the dose criteria and soil cleanup levels mandated by both Part 20 and Part 40 because the Site contains 11(e)(2) and non-11(e)(2) wastes. Both approaches require that radiation dose from uranium and thorium be as low as reasonably achievable (ALARA). Part 40 utilizes the radium benchmark dose approach to determine the total effective dose equivalent ("TEDE") from residual radioactivity. Part 20 sets forth the TEDE for restricted and unrestricted release by rule. Soil cleanup levels are selected by derived concentration guideline levels which are required to achieve compliance with the dose criteria.

In the RP, SFC only applied the requirements of Part 40 to select the TEDE and soil cleanup criteria. This approach is contrary to law because SFC is also required to apply the requirements of Part 20. Further, the radium benchmark approach, and thus the resulting cleanup level, is not appropriate for the SFC site due to the unusually high concentrations of uranium and thorium, and the low levels of radium as compared to a typical uranium mill

Attachment 5

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD
ADJUDICATIVE

In the Matter of)	
)	
CAROLINA POWER & LIGHT)	Docket No. 50-400 -LA
(Shearon Harris Nuclear)	ASLBP No. 99-762-02-LA
Power Plant))	
)	

ORANGE COUNTY'S
SUPPLEMENTAL
PETITION TO INTERVENE

I. INTRODUCTION

Pursuant to the 10 C.F.R. § 2.714(b)(1) and the Licensing Board's Initial Prehearing Order of February 24, 1999, Orange County hereby supplements its request for hearing and petition to intervene by filing its contentions in the above-captioned license amendment proceeding. Orange County's contentions challenge the adequacy of the application submitted by Carolina Power & Light Co. ("CP&L"), which seeks leave for expansion of spent fuel pool storage capacity at the Shearon Harris nuclear power plant. The contentions also challenge the Nuclear Regulatory Commission ("NRC" or "Commission") Staff's failure to comply with the National Environmental Policy Act ("NEPA") in considering the application.

Orange County's contentions are based on the license amendment application and related documents. The application, which was submitted to the NRC on December 23, 1998, consists of a letter plus nine "Enclosures."¹ The contentions are also based on the NRC Staff's proposed No

¹ Enclosure 7 is a nonproprietary version of Enclosure 6, which contains technical information supporting the license application. Although Orange County has obtained a copy of the proprietary information in Enclosure 6, none of the contentions in this pleading rely on

Template = SECY-037

SECY-02

Significant Hazards determination, which was published in the Federal Register on January 13, 1999, 64 Fed. Reg. 2,237 ("Federal Register Notice"). Other documents relied on by Orange County are referenced in each specific contention.

The contentions are supported by the Declaration of Dr. Gordon Thompson (April 5, 1999) ("Thompson Declaration"), which is attached as Exhibit 1. In addition, the contentions are supported by two other documents previously prepared by Dr. Thompson: a February 12, 1999, Declaration of Dr. Gordon Thompson, which was submitted in support of Orange County's comments on the NRC's proposed No Significant Hazards determination ("Thompson No Significant Hazards Declaration," attached as Exhibit 2 to this pleading); and a report entitled "Risks and Alternative Options Associated with Spent Fuel Storage at the Shearon Harris Nuclear Power Plant" ("Thompson Report," attached as Exhibit 3). Finally, Contention 3 (Inadequate Quality Assurance) is also supported by the Declaration of David A. Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists, Concerning Technical Issues and Safety Matters Involved in the Harris Nuclear Plant License Amendment for Spent Fuel Storage (March 31, 1999) ("Lochbaum Declaration," attached as Exhibit 4. Mr. Lochbaum's Declaration also supports those portions of Contentions 4 and 5 which relate to risks posed by quality assurance problems at Harris.

will be associated with steam generator replacement, and will take effect in about 2002. About two years later, there will be a further power uprate of 1.5 percent. CP&L projects that the CCW system heat load, including the reactor power uprate and the ongoing use of pools C and D, will substantially exceed the capability of the present CCW system. CP&L has made no commitment to undertake a CCW system upgrade, however; and even if this upgrade is implemented, it will not have been accomplished by the time the proposed installation of fuel racks in pools C and D takes place. In the absence of either an independent cooling system for pools C and D or a sufficient upgrade of CCW capability, the proposed license amendment application fails to satisfy GDC's 34 and 35.

Contention 2: Inadequate Criticality Prevention

Storage of pressurized water reactor ("PWR") spent fuel in pools C and D at the Harris plant, in the manner proposed in CP&L's license amendment application, would violate Criterion 62 of the General Design Criteria ("GDC") set forth in Part 50, Appendix A. GDC 62 requires that: "Criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations." In violation of GDC 62, CP&L proposes to prevent criticality of PWR fuel in pools C and D by employing administrative measures which limit the combination of burnup and enrichment for PWR fuel assemblies that are placed in those pools. This proposed reliance on administrative measures rather than physical systems or processes is inconsistent with GDC 62.

Basis: Under the design currently used in Harris pools A and B, CP&L uses two physical measures to prevent criticality of PWR fuel: maintaining a certain physical distance between fuel assemblies; and surrounding each fuel assembly with a neutron-absorbing material.

The PWR fuel assemblies in pools A and B are 10.5 inches apart center-to-center, and the fuel racks contain neutron-absorbing material 0.075 inches in thickness with a boron (B-10) content of 0.02 gram per square cm.¹⁴

CP&L proposes to amend the Harris Technical Specifications ("Tech Specs") to allow storage of PWR spent fuel in pools C and D in high-density non-flux trap style racks.¹⁵ The PWR racks proposed for pools C and D would allow closer placement of spent fuel assemblies than in pools A and B. Under the design proposed by CP&L, the center-center distance between PWR fuel assemblies in pools C and D would be 9.017 inches. The PWR racks proposed for pools C and D would contain neutron-absorbing material 0.098 inches in thickness with a boron (B-10) content of 0.03 gram per square cm.¹⁶ Because of the reduced center-center distance in pools C and D, there would be a higher potential for criticality than in pools A and B, despite the presence of neutron-absorbing material.

In order to protect against a criticality accident, CP&L proposes administrative measures that would limit the combination of burnup and enrichment of the PWR spent fuel in pools C and D to an "acceptable range." The range of acceptable burnup and enrichment values is shown in Figure 5.6.1 of Enclosure 5. According to CP&L: "The burnup criteria will be implemented by appropriate administrative procedures to ensure verified burnup as specified in the proposed Regulatory Guide 1.13, Revision 2, prior to fuel transfer into Spent Fuel Pools C or D."¹⁷ CP&L further states that: "Strict administrative controls will prevent an unacceptable assembly, as determined by the acceptance criteria stated in Section 4.2, from being transferred to Harris Pools

14 Harris FSAR, Table 9.1.1-1, Amendment No. 14.

15 License Amendment Application, Enclosure 5 at 5-7.

16 License Amendment Application, Enclosure 7, Revision 3, at 4-6. Revision 3 of Enclosure 7 was served on Orange County by letter dated March 17, 1999.

C and D."¹⁸

The General Design Criteria in Appendix A to Part 50 constitute some of the most fundamental design requirements for maintaining safety in nuclear power plants. In order to protect against criticality accidents, GDC 62 is quite clear that any measures relied on must be physical rather than administrative. There is no room in the criterion for flexibility or exception. Thus, the administrative measures proposed by CP&L must be rejected as unlawful under GDC 62.

CP&L claims to rely on Draft Regulatory Guide 1.13, Proposed Revision 2 to Reg. Guide 1.13, Spent Fuel Storage Facility Design Basis (December 1981), for the acceptability of administrative measures to prevent criticality. However, a Regulatory Guide, "still less" a draft regulatory guide, does not constitute a regulation. *Louisiana Energy Services* (Claiborne Enrichment Center), LBP-91-41, 34 NRC 332, 354 (1991). Such documents "are useful as guides," but "insofar as the adjudicatory process is concerned, they represent the opinions of one of the parties to that process and as such cannot be viewed as necessarily controlling." *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), LBP-76-13, 3 NRC 425, 432 (1976). Therefore, a Reg. Guide cannot be relied on to modify or circumvent the requirements of duly promulgated regulations like the General Design Criteria.

In any event, Draft Reg. Guide 1.13 does not support the administrative measures proposed by CP&L. Although Appendix A contains some language implying that the design of spent fuel racks against criticality can take credit for burnup (pages 1.13-13, 14, 15), other parts of the Draft Reg. Guide clearly proscribe such activity. For instance, at page 1.13-9, the Draft

¹⁷ License Amendment Application, Enclosure 7, Revision 3, at 4-4.

¹⁸ *Id.* at 4-17.

Reg. Guide states that:

At all locations in the LWR spent fuel storage facility where spent fuel is handled or stored, the nuclear criticality safety analysis should demonstrate that criticality could not occur without at least two unlikely, independent, and concurring failures or operating limit violations.

(emphasis in original). CP&L's proposed administrative controls on criticality would not satisfy this requirement because only one failure or violation, namely placement in the racks of PWR fuel not within the "acceptable range" of burnup, could cause criticality. Note that "misplacement of a spent fuel assembly" is identified in the Draft Reg. Guide as one of nine "credible normal and abnormal operating occurrences."¹⁹

A Regulatory Guide is a guidance document, which cannot be interpreted in a manner that contradicts the plain language of the regulations. Because the language at page 1.13-9 is consistent with GDC 62, it overrides any implication in Appendix A that administrative measures for controlling criticality are acceptable. Thus, CP&L's proposed administrative measures for controlling criticality would not be permitted by the Draft Reg. Guide.

Contention 3: Inadequate Quality Assurance²⁰

CP&L's proposal to provide cooling of pools C and D by relying upon the use of previously completed portions of the Unit 2 Fuel Pool Cooling and Cleanup System ("FPCCS") and the Unit 2 Component Cooling Water System (CCWS) does not satisfy the quality assurance criteria of 10 C.F.R. Part 50 Appendix B. In particular, CP&L fails to satisfy Criterion XIII, regarding Handling, Storage and Shipping, because it has not demonstrated that the piping and equipment have been stored and preserved since the time of completion in a manner that prevents

¹⁹ *Id.* at 1.13-9.

²⁰ In addition to the Thompson Declaration, this contention is also supported by the Lochbaum Declaration (Exhibit 4).

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

Before Administrative Judges:

ASLBP BOARD 09-876-HLW-CAB01 William J. Froehlich, Chairman Thomas S. Moore Richard E. Wardwell	ASLBP BOARD 09-877-HLW-CAB02 Michael M. Gibson, Chairman Alan S. Rosenthal Nicholas G. Trikouros	ASLBP BOARD 09-878-HLW-CAB03 Paul S. Ryerson, Chairman Michael C. Farrar Mark O. Barnett
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In the Matter of:)	April 10, 2009
)	
U.S. Department of Energy)	
)	Docket No. 63-001
(High Level Waste Repository)	
Construction Authorization Application))	
)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the “**U.S. DEPARTMENT OF ENERGY RESPONSE TO REQUEST FROM THE MARCH 31, 2009 ORAL ARGUMENT,**” have been served on the following persons this 10th day of April 2009 through the Nuclear Regulatory Commission’s Electronic Information Exchange.

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