

## **17 FINANCIAL QUALIFICATIONS AND DECOMMISSIONING FUNDING ASSURANCE**

### **17.1 Conduct of Review**

#### **17.1.1 Background**

The adequacy of PFS's financial qualifications was discussed in the staff's SER concerning site-related aspects of the PFS application (Nuclear Regulatory Commission, 2000). That discussion is restated below, as modified in light of subsequent developments in the adjudicatory proceeding concerning the PFS license application.

Private Fuel Storage L.L.C. is a United States limited liability company owned by eight member companies (members or owners), which is organized under the laws of the State of Delaware and headquartered in La Crosse, Wisconsin. PFS is registered and authorized to transact business in the State of Utah, where it plans to construct, operate, and decommission an ISFSI to store spent fuel from U.S. nuclear power plants, including fuel from its members. The eight current members are: Consolidated Edison Company; Genoa Fuel Tech, Inc., an affiliate of Dairyland Power Cooperative; GPU Nuclear Corporation; Florida Power and Light Company; Indiana Michigan Power Company; Northern States Power Company; Southern California Edison Company; and Southern Nuclear Operating Company, Inc. This list is subject to change in view of the ongoing trends involving industry integration and acquisitions.

In various proprietary documents sent to the NRC supplementing the PFS License Application prior to issuance of the staff's SER concerning site-related aspects of the PFS application (Nuclear Regulatory Commission, 2000), PFS provided details pertaining to the legal, financial, and organizational relationships among its members, as well as financial estimates of various components of expected costs by year. These documents include the PFS Amended and Restated Limited Liability Company Agreement (PFS Agreement) and the 1997 PFS Business Plan; in addition, PFS provided a 1998 Business Plan and more recent construction cost estimates, which contained additional details concerning its expected costs. These documents and cost estimates were also evaluated by the staff during the adjudicatory proceeding on the PFS license application.

The Facility is designed for a maximum capacity of 40,000 MTU, which will require about 4,000 storage casks and about 500 pads, each pad being capable of supporting eight casks. Each cask will house one sealed metal canister containing multiple spent fuel assemblies. The Facility is designed to store spent fuel for up to 40 years, by which time it is anticipated that the spent fuel will have been transferred offsite so that the Facility can be decommissioned. The initial license request is for a term of 20 years, with plans to renew the license for another 20 years.

With respect to the NRC's financial qualifications requirements, under 10 CFR 72.22(e), an applicant for an ISFSI license must submit sufficient information to demonstrate its financial qualifications to carry out the activities for which the license is sought, in accordance with 10 CFR Part 72 regulations. 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 prior to licensing that decommissioning will be carried out after the removal of spent fuel and/or high level radioactive waste from storage.”

Regarding decommissioning and decommissioning funding assurance, under 10 CFR 72.30(a), an applicant must provide a proposed decommissioning plan that describes its proposed practices and procedures for decontamination and decommissioning of the site. Further, under 10 CFR 72.30(b), an applicant must submit a “decommissioning funding plan containing information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI.” Furthermore, this information “must include a cost estimate for decommissioning and a description of the method of assuring funds for decommissioning from [10 CFR 72.30(c)] including means of adjusting cost estimates and associated funding levels periodically over the life of the ISFSI.”

In applying the financial assurance requirements in 10 CFR Part 72 to the PFS Facility, the staff took into consideration the Commission’s ruling in Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294 (1997), which pertains to an application by Louisiana Energy Services (LES) to construct and operate a uranium enrichment facility pursuant to 10 CFR Part 70. Among other things, the ruling held that “the NRC is not required as a matter of law to apply the strict financial qualification provisions of Part 50 to all Part 70 license applications.” *Id.*, 46 NRC at 298. Rather, “Part 70 calls for a case-by-case inquiry into whether the applicant ‘appears to be financially qualified’ to take safety measures necessary to assure that activities under the license will not create undue risk to public health and safety.” *Id.* at 299. The Commission further observed that the shorter, more flexible language in Part 70 allows “a less rigid, more individualized approach” to determine whether an applicant has demonstrated its financial qualifications, and stated that if the Commission “had intended the Part 50 standards and criteria to apply to all Part 70 applicants . . . the regulations would have either restated the Part 50 criteria or incorporated them by reference.” *Id.* at 300. In sum, the Commission concluded that “the general language of Part 70 leaves the Commission free to review the reasonableness of an applicant’s financial plan in light of all relevant circumstances,” which might or might not lead to application of any or all of the criteria stated in Part 50. *Id.* at 302.

In considering the “relevant circumstances” present in the LES application, the Commission observed that LES lacked contractual commitments by its partners to fund any portion of the project, and also lacked agreements by lending institutions to fund any portion of the project. Nonetheless, the Commission took notice of commitments made by LES in the proceeding not to proceed with the project until certain funding commitments were in hand. Specifically, the Commission found that LES made a financial commitment of not constructing the proposed project in the absence of sufficient advance funding commitments (30% equity and 70% debt) to cover the project’s cost, and sufficient advance purchase contracts for the plant’s output to cover the construction and operating costs incurred during the term of the contract, including a return on investment. *Id.* at 304-05. The Commission relied on these commitments in

developing and imposing two financial assurance conditions in its Order approving the LES application.

The PFS application for an ISFSI under Part 72 has some significant similarities to the LES Part 70 application, such as the fact that it is for a new, joint venture-type entity, made up of significant, financially secure corporations; it requests approval of a non-Part 50 facility application that has less health and safety risks than is associated with the operation of nuclear reactors; the application is not strictly subject to the Part 50 financial assurance requirements; and the applicant has made financial commitments that it will not proceed with construction of the Facility in the absence of sufficient advance funding commitments. In its SER concerning site-related aspects of the PFS application (Nuclear Regulatory Commission, 2000), the staff considered such similarities in its review of the PFS application and in recommending certain financial assurance license conditions that the staff believed should be part of any determination to approve it. The staff noted that while Part 72 contains language that differs from Part 70, it is also less prescriptive than Part 50. *Compare* 10 CFR 72.22(e) *with* 10 CFR 50.33(f). Accordingly, as in the LES decision, the staff did not find it necessary or appropriate to rely on Part 50 standards and criteria for its review of the PFS application.

#### **17.1.2 Financial Assurance for Construction Funding**

PFS estimated costs of about \$10 million for design and licensing and about \$92 million for Facility construction; these cost estimates were updated in the evidentiary hearings held on the PFS license application. Key construction phase components include: site preparation; access road construction; building and storage pad construction; procurement of canister transfer and transport equipment; and transportation corridor (rail line) construction from the main rail line to the Facility site. PFS provided cost estimates of key components of each of the major phases of construction, which the staff has reviewed and found to be adequate. These estimates are not shown in this SER, however, since they are proprietary.

Construction is to be funded through several mechanisms, with a total of \$6 million expected from equity contributions from PFS members pursuant to Subscription Agreements and the remainder from revenue commitments from Service Agreements with member and nonmember Customers. If the combination of equity and revenue are insufficient to complete construction, PFS plans to finance the remainder through committed sources of debt financing. The License Application states that no construction will proceed unless and until Service Agreements for a significant commitment of fuel storage have been signed.

PFS plans to execute the Service Agreements referred to above with member and nonmember Customers after the granting of a license by the NRC and will not have these agreements in place before a license is issued. In addition, PFS has not presented assurance that each member will provide its share of the planned \$6 million aggregate equity contribution or that, if a member fails to provide its share, other members will make up the deficiency.

On the other hand, PFS has supplied information in proprietary documents to the NRC that demonstrate to the staff's satisfaction that PFS has reasonable assurance that it will have adequate funding as required in 10 CFR 72.22(e) before commencing the construction or operation of the Facility. This information, coupled with the financial information that has been provided in non-proprietary documents, the nature of the Facility, and the nature and size of the

project's members, provide reasonable assurance of PFS's financial qualifications to construct and operate the Facility without undue risk to public health and safety. The specified initial capacity figure is a proprietary number, which is specified in the PFS's September 15, 1998, and December 3, 1999, submittals (Parkyn, 1998; Gaukler, 1999), and, therefore, is not stated herein. The staff considers this initial capacity figure to be acceptable. Accordingly, in its SER of December 1999 (revised and reissued January 2000), the staff recommended that PFS be required to meet the following financial assurance conditions before constructing or operating the Facility and that these conditions should be part of any order approving the PFS application, in order to demonstrate compliance with 10 CFR 72.22(e):

- Construction of the Facility shall not commence before funding (equity, revenue, and debt) is fully committed that is adequate to construct a Facility with the initial capacity as specified by PFS to the NRC. Construction of any additional capacity beyond this initial capacity amount shall commence only after funding is fully committed that is adequate to construct such additional capacity.
- PFS shall not proceed with the Facility's operation unless it has in place long-term Service Agreements with prices sufficient to cover the operating, maintenance, and decommissioning costs of the Facility for the entire term of the Service Agreements.

As discussed in Section 17.1.6 of this SER, the language of these proposed license conditions has now been modified as a result of developments in the adjudicatory proceeding concerning the PFS license application. The acceptability of PFS's approach in satisfying the financial qualifications requirements set forth in 10 CFR Part 72, and the scope of the license conditions to be imposed in this regard, are discussed in Section 17.1.6 of this SER.

### **17.1.3 Financial Assurance for Operating Costs**

PFS plans to fund Facility operations through agreements with Customers obligated under the Service Agreements to pay PFS an annual fee sufficient to fund operational expenses that are not funded by the capital contributions of PFS members. The PFS 1997 Business Plan states this annual fee and shows the forecast of annual and total operating costs and revenues based on a "reference case" scenario extending over a 40-year period from 2002-2042. The Business Plan forecasts positive cumulative cash flows and a positive return on equity over the 40-year period. PFS provided updated estimates of its expected operating costs in the evidentiary proceeding concerning its license application. Specific financial forecasts and other data from the Business Plan and the evidentiary proceeding cannot be cited herein because of their proprietary nature.

The PFS forecast that its own members will store fuel at a significant level over the life of the Facility, approximating the reference case level of usage, provides a considerable degree of assurance that a base level of revenue to meet operating and maintenance (O&M) costs is likely to be available from the members themselves. Collectively, these members have substantial assets and financial resources so that, in the aggregate, they could provide adequate funding for a project of the size and scope proposed by PFS. The License Application states that the Service Agreements will provide assurance for the continued payment of O&M costs by requiring Customers to meet creditworthiness requirements and, if

necessary, provide additional financial assurances (such as irrevocable letters of credit or a third-party guarantee).

In sum, the staff finds that the foregoing factors cited in Section 17.1.3, in combination with the license conditions recited in Section 17.2, provide reasonable assurance that PFS will have adequate funding to operate the Facility.

#### **17.1.4 Financial Assurance for Decommissioning Funding**

As noted earlier, decommissioning funding assurance requires a decommissioning cost estimate and a funding plan providing reasonable assurance that adequate funding will be available for decommissioning costs, pursuant to 10 CFR 72.30(b). Furthermore, the Commission's regulations require that financial assurance for decommissioning must be provided by one or more of the following methods, pursuant to 10 CFR 72.30(c):

- Prepayment prior to the start of operations in the form of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities.
- A surety method, insurance, or other guarantee method. These methods guarantee that decommissioning costs will be paid. For example, a surety method may be in the form of a surety bond, letter of credit, or line of credit.
- An external sinking fund in which deposits are made at least annually, coupled with a surety method or insurance, the value of which may decrease by the amount being accumulated in the sinking fund.

PFS states on page 1-1 of Appendix B of the License Application that before the end of Facility life, the sealed canisters containing spent fuel will be transferred from their storage casks into shipping casks and then transported offsite. Since these canisters will be designed to meet DOE guidance for multipurpose canisters for spent fuel storage, transport, and disposal, the fuel assemblies will remain sealed in the canisters such that decontamination of the canisters will not be required. After shipment of the canisters offsite, the Facility will be decommissioned by identification and removal of any residual materials above NRC limits. The site will be released for unrestricted use followed by termination of the NRC license.

PFS states on page 1-7 of the License Application that, while its intention is to maintain the Facility free of radiological contamination at all times, the decommissioning cost estimate conservatively assumes that certain areas and components will require decontamination. The method of funding the Facility decommissioning activities will consist of two components: storage cask decommissioning and decommissioning of the remainder of the Facility.

The estimated decommissioning cost for each storage cask is \$17,000 (1997 dollars), which will be prepaid into an externalized escrow account under the Service Agreement with each Customer prior to shipment of each spent fuel canister to the Facility. PFS plans to place the full amount estimated for decommissioning the casks in a segregated escrow account for this purpose. The staff notes that PFS's proposal to secure payment prior to shipment of the cask to the Facility constitutes a departure from the language in 10 CFR 72.30(c)(1), which indicates that if an applicant selects prepayment as the method of decommissioning funding, payment

should be made “prior to the start of operation.” Notwithstanding this difference, however, the PFS proposal assures that (a) reasonable assurance of adequate funding to decommission the Facility will be provided prior to the commencement of operations (see the following paragraph), as required in 10 CFR 72.30(c); and (b) funding to decommission the casks will be provided prior to construction of each cask (i.e., prior to commencement of any operations involving that cask), thus assuring that each cask that is constructed will be decommissioned. Accordingly, PFS’s decommissioning funding plan provides reasonable assurance that decontamination and decommissioning at the end of Facility operations will provide adequate protection of the public health and safety and satisfies 10 CFR 72.30(c). Although funding for decommissioning the casks will be provided prior to cask construction rather than prior to the commencement of Facility operations, since the decommissioning funding plan provides reasonable assurance of adequate funding, an exemption from strict compliance with the language in 72.30(c)(1) would be issued as part of the license, if necessary, to authorize implementation of the PFS plan.

PFS estimates the cost of decommissioning the remainder of the Facility and site to be \$1.631 million (1997 dollars), which is to be funded through a letter of credit coupled with an external sinking fund, pursuant to 10 CFR 72.30(c)(3). Customers will be required under the Service Agreements to pay the cost of decontaminating any portion of the Facility for which they may be responsible for contaminating. As the actual cost of decontamination and decommissioning is paid into the external sinking fund, PFS plans for the letter of credit to be reduced by an equivalent amount, pursuant to 10 CFR 72.30(c)(3). The per-canister fee and amounts of the escrow account, external sinking fund, and letter of credit are to be reviewed and adjusted annually to account for inflation and any changes in the scope of decommissioning.

PFS estimates the specific cost of components of decommissioning the remainder of the Facility and site as follows (these are non-proprietary figures cited in Appendix B of the LA):

Site Characterization Survey	\$250,000
Decommissioning Four Transfer Casks	\$200,000
Decommissioning Eight Shipping Casks	\$400,000
Decontaminating Canister Transfer Building	\$230,000
Storage Pad Decontamination	\$241,000
Final Release Survey	\$260,000
Independent Verification Survey	<u>\$ 50,000</u>
Total	\$1,631,000

The staff finds these estimates of decommissioning costs to be reasonable. Further, the staff finds this surety method of a letter of credit coupled with an external sinking fund, and per-cask prepayment, as proposed by PFS to be acceptable for meeting the requirements of 10 CFR 72.30(c).

### 17.1.5 PFS Liability Insurance

PFS has committed to pursue and to maintain nuclear liability insurance in the maximum commercially available amount of \$200 million. The NRC does not have specific insurance and indemnity requirements for Part 72 facilities. PFS's commitment to provide nuclear liability insurance, in addition to the funding required by NRC regulations, is acceptable to the staff.

### 17.1.6 Additional Financial Assurance Commitments

As stated above in SER Section 17.1.2, PFS made certain commitments which were incorporated into license conditions in the staff's SER concerning site-related aspects of the PFS application (Nuclear Regulatory Commission, 2000). The acceptability of PFS's approach in satisfying the financial qualifications requirements set forth in 10 CFR Part 72 was the subject of a contention (Contention Utah E/ Confederated Tribes F) filed by intervenors in the adjudicatory proceeding related to PFS's license application.

On March 10, 2000, the Atomic Safety and Licensing Board (ASLB) in that proceeding issued a decision concerning the applicant's financial qualifications. Specifically, the ASLB granted PFS's motion for partial summary disposition of a substantial portion of the intervenors' contention challenging its financial qualifications, based in large part on the ASLB's review of the applicant's financial commitments and the Commission's LES decision. Specifically, the ASLB found that PFS's financial commitments, in conjunction with the two license conditions proposed by the staff in its SER concerning site related aspects of the PFS Facility (LC 17-1 and 17-2), can provide an acceptable basis for finding reasonable assurance that PFS is financially qualified to conduct the activities authorized under 10 CFR Part 72. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-00-06, 51 NRC 101 (March 10, 2000). In addition, the ASLB referred its ruling to the Commission, for review of its application and interpretation of the reasonable assurance standard in 10 CFR Part 72 in light of the Commission's LES decision. *Id.* at 136.

On August 1, 2000, the Commission issued its decision on review of the ASLB's decision in LBP-00-06. Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC \_\_\_\_ (August 1, 2000). Therein, the Commission affirmed the ASLB's and staff's view that license conditions incorporating an applicant's financial commitments can be an acceptable method for providing reasonable assurance of financial qualifications under 10 CFR Part 72. *Id.*, slip opinion at 6-7, 10. The Commission ruled, however, that certain additional commitments made by PFS, beyond the commitments reflected in two license conditions proposed by the staff, which were relied upon by the ASLB in LBP-00-06, should be incorporated in the PFS license. *Id.* at 10-11. Further, the Commission modified the language of LC-17-2, *Id.* at 11; and it directed the ASLB to require PFS to submit a sample customer service agreement, that meets all of the financial assurance license conditions, to the parties and the ASLB for review. *Id.* at 15.

In CLI-00-13, *Id.* at 16 and n.2, the Commission observed that the ASLB had relied upon the following commitments by PFS, which it determined should be incorporated into license conditions:

- not to commence construction before funding, in the amount to be determined at hearing, is adequately committed;
- not to commence operations before service agreements for the life of the license, with prices adequate to fund operations, maintenance, and decommissioning, in the amount to be determined at hearing, are in place;
- to include provisions in service agreements requiring customers to retain title to the spent fuel stored and allocating liability among PFS and the customers;
- to include provisions in the Service Agreements requiring customers to provide periodically credit information, and, where necessary, additional financial assurances such as guarantees, prepayment, or payment bond;
- to include in the customer service agreements a provision requiring PFS not to terminate its license prior to furnishing the spent fuel storage services covered by the service agreement;
- to obtain insurance for offsite liability in the amount of \$200 million (the maximum amount commercially available); and
- to obtain insurance covering onsite liability in an amount to be determined at hearing.

In accordance with the Commission's decision in CLI-00-13, the staff has incorporated these commitments into License Condition LC-17-3, set forth below.

Evidentiary hearings on the PFS license application were held in June 2000, which included consideration of the remaining portions of Contention Utah E/Confederated Tribes F (Financial Assurance), concerning the adequacy of the applicant's construction and operating cost estimates, and its plans to obtain onsite property insurance. The Licensing Board's decision is expected to address the applicant's cost estimates, for use in connection with the license conditions set forth in Section 17.2 of this SER.

## **17.2 Evaluation Findings**

PFS has identified anticipated sources of equity capital and revenue to fund construction of the Facility, with much of the total revenue being required from Customers as prepayments before they actually ship spent fuel to the Facility. To fund ongoing operations, Customers will pay some additional prepaid fees, plus a relatively small annual storage fee in comparison to their prepaid fees. Also, the estimated \$17,000 cost for decommissioning each Customer storage cask is to be prepaid by Customers in accordance with terms of the Service Agreement. The estimated \$1.631 million cost of decommissioning the remainder of the Facility and the site is a small fraction of the construction cost and is guaranteed by a surety method acceptable to the NRC. The license conditions set forth below, incorporating PFS's financial commitments, as set forth in CLI-00-13, provide additional assurance of the applicant's financial qualifications under 10 CFR Part 72.



Accordingly, the staff believes that PFS has provided reasonable assurance of its financial qualifications to construct, operate, and decommission the Facility as proposed, subject to the conditions stated herein, in accordance with the requirements of 10 CFR Part 72.

### **License Conditions**

LC17-1 Construction of the Facility shall not commence before funding (equity, revenue, and debt) is fully committed, that is adequate to construct a facility with the initial capacity as specified by PFS to the NRC. Construction of any additional capacity beyond this initial capacity amount shall commence only after funding is fully committed that is adequate to construct such additional capacity.

LC17-2 PFS shall not proceed with the Facility's operation unless it has in place Service Agreements covering the entire term of the license, with prices sufficient to cover the operating, maintenance, and decommissioning costs of the Facility for the entire term of the license.

LC-17-3 PFS shall:

- (1) not commence construction before funding, in the amount to be determined at hearing, is adequately committed (see LC-17-1);
- (2) not commence operations before service agreements for the life of the license, with prices adequate to fund operations, maintenance, and decommissioning, in the amount to be determined at hearing, are in place (see LC-17-2);
- (3) include provisions in its service agreements requiring customers to retain title to the spent fuel stored, and allocating legal and financial liability among PFS and the customers;
- (4) include provisions in the Service Agreements requiring customers to provide periodically credit information, and, where necessary, additional financial assurances such as guarantees, prepayment, or payment bond;
- (5) include in the customer service agreements a provision requiring PFS not to terminate its license prior to furnishing the spent fuel storage services covered by the service agreement;
- (6) obtain insurance for offsite liability in the amount of \$200 million (the maximum amount commercially available); and
- (7) obtain insurance covering onsite liability in an amount to be determined at hearing.

### 17.3 References

- Atomic Safety and Licensing Board, Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), LBP-00-06, 51 NRC 101. March 10, 2000. Docket No. 72-22-ISFSI.
- Donnell, J.L. Private Fuel Storage Limited Liability Company. *Supplemental Response to RAIs*. Letter to Director, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission. Docket No. 72-22. June 15, 1998.
- Donnell, J.L. Private Fuel Storage Limited Liability Company. *Response to RAI LA 1-6*. Letter to Director, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission. Docket No. 72-22. June 18, 1998.
- Gaukler, P.A. Shaw Pittman. *Private Fuel Storage – Docket No. 72-22 – ASLB No. 97-732-02*. Letter to the E. M. Julian, U. S. Nuclear Regulatory Commission. December 3, 1999.
- Nuclear Regulatory Commission, Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294. December 18, 1997. Docket No. 70-3070-ML.
- Nuclear Regulatory Commission, Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC \_\_\_\_\_. August 1, 2000. Docket No 72-22-ISFSI.
- Nuclear Regulatory Commission. 2000. *Safety Evaluation Report of the Site-Related Aspects of the Private Fuel Storage Facility Independent Spent Fuel Storage Installation*. December 15, 1999 (revised and reissued January 4, 2000). Docket No 72-22.
- Parkyn, J.D. Private Fuel Storage Limited Liability Company. *Response to Request for Additional Information*. Letter to Director, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission. Docket No. 72-22. May 19, 1998.
- Parkyn, J.D. Private Fuel Storage Limited Liability Company. *Supplemental Response to RAIs*. Letter to Director, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission. Docket No. 72-22. September 15, 1998.
- Private Fuel Storage Limited Liability Company. *License Application for the Private Fuel Storage Facility*. Docket Number 72-22. June 20, 1997, as amended May 22 and August 28, 1998; May 19, August 10, August 27, September 8, September 21, December 16, 1999; and February 2, March 17, April 14, May 8, June 23, July 18, July 27, August 11, August 31, September 14, and September 25, 2000.