

**CHAPTER 15**  
**FINANCIAL QUALIFICATIONS**

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**Acronyms and Abbreviations**

<u>Acronym/Abbreviation</u>	<u>Definition</u>
CP	Construction Permit
FOCD	Foreign Ownership, Control, or Domination
NRC	U.S. Nuclear Regulatory Commission
OL	Operating License
SHINE	SHINE Medical Technologies, Inc.
SRP	Standard Review Plan

## CHAPTER 15

### FINANCIAL QUALIFICATIONS

The purpose of this chapter is to present the financial information for the SHINE Medical Technologies, Inc. (SHINE) medical isotope facility, which establishes that SHINE is financially qualified to own, construct, operate, and decommission the facility. The following information regarding financial qualifications is described in this chapter:

- a. The financial ability to construct the facility, as authorized by the Construction Permit (CP).
- b. The financial ability to safely operate the facility.
- c. The financial ability to safely decommission the facility at the end of the facility's operating license.
- d. Information regarding Foreign Ownership, Control, or Domination (FOCD).
- e. Information regarding Nuclear Insurance and Indemnity.

The SHINE financial information is provided in accordance with 10 CFR 50.33(d)(3)(iii), 10 CFR 50.33(f) and (k), and the implementing regulations regarding the Price-Anderson Act contained in 10 CFR 140.

#### 15.1 FINANCIAL ABILITY TO CONSTRUCT THE SHINE FACILITY

The Nuclear Regulatory Commission (NRC) has set forth requirements for applicants for a CP pursuant to 10 CFR 50.33(f) to submit sufficient information to demonstrate that the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated construction costs and related fuel cycle costs. Additionally, the applicant should indicate the source(s) of funds to cover these costs.

The NRC provides financial guidelines in Appendix C to 10 CFR Part 50 and distinguishes between applicants that are established organizations and those that are newly-formed entities organized primarily for the purpose of engaging in the activity for which the permit is sought. Appendix C provides a guide for the financial data and related information required to establish financial qualifications for CPs. SHINE is considered a newly-formed entity. As stated in Appendix C, the information required by the NRC that will normally be required of applicants which are newly-formed entities will not differ in scope from that required of established organizations.

SHINE is submitting information that demonstrates that the company possesses or has reasonable assurance of obtaining the necessary funds to cover estimated construction costs and related fuel cycle costs. Pursuant to 10 CFR 50.33(f)(1) and in accordance to Appendix C guidelines, SHINE is providing estimates associated with the total construction of the facility and related fuel cycle costs and is indicating the sources of funds to cover these costs. The following represent the budgetary estimate based on the preliminary design of the SHINE facility:

Total production plant costs: [ Proprietary Information ]

Support facility costs: [ Proprietary Information ]

Plant equipment: [ Proprietary Information ]

Uranium inventory cost for approximate one year supply: [ Proprietary Information ]

Total estimated cost: [ Proprietary Information ]

SHINE has obtained financing for its development and construction project using various sources of financing, including equity, debt and government grants. To date, SHINE has received the following commitments:

- a. Cost sharing agreement with the DOE/NNSA: \$25 million
- b. Equity financing raised to-date: \$11.4 million
- c. Alliant Energy shared savings program loan: \$4.8 million
- d. State of Wisconsin Enterprise Zone Tax Credits: \$11.2 million
- e. City of Janesville loan packages/guarantees: \$4.6 million
- f. 90 acres of land for the building site provided by Janesville: \$1.0 million

SHINE is in the process of obtaining an additional equity capital investment from outside investors. It is likely that such capital will come from current investors, new venture capital firms, and high net worth individuals.

SHINE expects to finance the construction of the facility. This will be under either a short-term lease or a debt agreement, or both. SHINE expects to fully own the facility within five years of start-up. At present, SHINE has not yet entered into any financing agreements with financial institutions or other potential sources for such lease or debt financing.

[ Proprietary Information ]

## 15.2 FINANCIAL ABILITY TO OPERATE THE SHINE FACILITY

The class of license SHINE is applying for will be a Class 103 license per 10 CFR 50.22 (for commercial and industrial facilities). Additional future applications will be for the production facility operating license under 10 CFR 50, receipt, possession and use of source material under 10 CFR 40, byproduct material under 10 CFR 30, and special nuclear material under 10 CFR 70. SHINE expects to request an Operating License (OL) for a term of 30 years.

SHINE is providing information that demonstrates that the company possesses or has reasonable assurance of obtaining the funds necessary to cover estimated facility operation costs for the period of the license. These are the estimates provided for total annual operating costs for each of the first 5 years of operation of the facility. Pursuant to 10 CFR 50.33(f)(2), the sources of funds to cover these costs will be funded from the expected revenues associated with the sale of molybdenum-99 (Mo-99) and other radioisotopes produced by the facility. SHINE expects that such revenue will be significantly more than the operating costs incurred. The latest financial statements of the company will be provided as part of the evidence of financial solvency and the ability to fund the facility.

Table 15.2-1 represents the budgetary estimate of operating costs for the first 5 years of the SHINE facility and the expected revenues from the production and sale of Mo-99 and other radioisotopes.

**Table 15.2-1 SHINE Medical Technologies, Inc.  
Operating Costs for the First 5 Years of Operation**

	(in \$ thousands)				
	2017	2018	2019	2020	2021
<b>Total Revenue</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Total COGS</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Gross profit</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Total operating expenses</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Income from operations</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Non-Operating expense</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Income Taxes</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]
<b>Net income</b>	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]	[ Proprietary Information ]



### 15.3 FINANCIAL ABILITY TO DECOMMISSION THE SHINE FACILITY

As part of the OL application, SHINE will provide information containing reasonable assurance that funds will be available to decommission the facility in accordance with 10 CFR 50.33(k). This information is to be submitted to the NRC for decommissioning in accordance with 10 CFR 50.75(d) (Reporting and recordkeeping for decommissioning planning).

The NRC has set forth requirements that the decommissioning report must contain a cost estimate for decommissioning the facility; an indication of which method or methods, as described in 10 CFR 50.75(e), are to be used to provide funds for decommissioning; and a description of the means of adjusting the cost estimate and associated funding level periodically over the life of the facility to account for changes in the costs of such items as labor, energy, and waste disposal.

Based on discussions with experienced experts in the nuclear industry, SHINE management has developed a preliminary cost estimate of \$60 million for decommissioning the facility. The SHINE business plan anticipates that it will finance the decommissioning by establishing an external escrow account in which deposits will be made annually, coupled with a surety method, insurance, or some other form of guaranty. The financial projections assume that the annual escrow deposit will start at \$2 million per year and will be adjusted up for inflation. This escrow account is intended to provide reasonable assurance that funds will be available to decommission the facility. SHINE will provide a site-specific decommissioning plan with estimated costs and financial assurances to support those costs in its application for an OL.

#### 15.4 FOREIGN OWNERSHIP, CONTROL, OR DOMINATION

SHINE expects the NRC to evaluate the SHINE application in a manner that is consistent with the guidance provided in the Standard Review Plan (SRP), “Foreign Ownership, Control, or Domination of applicants for Reactor Licenses,” dated June 1999, to determine whether SHINE is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC’s position outlined in the SRP on FOCD states that “the foreign control prohibition should be given an orientation toward safeguarding the national defense and security.” Furthermore, the SRP on FOCD outlines how the effects of foreign ownership may be mitigated through implementation of a “negation action plan” to ensure that any foreign interest is effectively denied control or domination over the applicant.

SHINE fully understands that a financial analyst will review all of the information submitted by the company to determine whether there is FOCD, and if it is determined that there is FOCD, additional action would be necessary to negate FOCD, and the applicant would be advised and requested to submit a negation action plan.

SHINE is a private corporation. It currently has approximately twenty-five shareholders. In addition, current employees of SHINE participate in a stock option plan and hold options to purchase shares in the future. To the best of our knowledge, all of our current shareholders holding 1 percent or more of SHINE’s stock are U.S. citizens or entities owned or controlled by U.S. citizens. All of our current employees holding stock options are U.S. citizens.

One of the seven directors on SHINE’s Board is a Canadian citizen with U.S. permanent resident status. The appointment of one citizen of Canada as a director of SHINE has no material impact on SHINE’s current compliance with FOCD regulations.

Additionally, SHINE is not acting as an agent or representative of another person in filing the CP application.

## 15.5 NUCLEAR INSURANCE AND INDEMNITY

The Price-Anderson Act, Section 170 of the Atomic Energy Act (AEA) of 1954, as amended, provides a system to pay funds for claims by members of the public for personal injury and property damage resulting from any nuclear incident. The Price-Anderson Act provides coverage in varying degrees. The implementing regulations regarding the Price-Anderson Act are provided in 10 CFR 140.

SHINE is covered by the insurance and financial protection requirements of the Price-Anderson Act, pursuant to Section 170 of The Atomic Energy Act (AEA) of 1954, as amended. The SHINE facility is planned to contain up to eight irradiation units, each with a licensed target solution vessel with a fission power of [ Proprietary Information ]. Consequently, prior to operation, SHINE plans to obtain and maintain financial protection of \$1.5 million to cover all eight irradiation units, and will also execute and maintain an indemnification agreement with the NRC that extends for the life of the license.

SHINE understands that the NRC may, from time to time, request the applicant, whether an established organization or newly-formed entity, to submit additional or more detailed information respecting its financial arrangements and status of funds if such information is deemed necessary to enable the NRC to determine an applicant's financial qualifications for the license.

Additionally, pursuant to 10 CFR 140.13, SHINE will maintain financial protection of \$1,000,000 in insurance prior to uranium being brought on site, and the full financial protection before operation of the facility.

## 15.6 REFERENCES

None