


~~PROPRIETARY INFORMATION~~

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
AEROTEST OPERATIONS, INC.)	Docket No. 50-228-LT
)	
(Aerotest Radiography and)	
Research Reactor))	

NRC STAFF INITIAL WRITTEN STATEMENT OF POSITION
REGARDING DENIAL OF THE INDIRECT LICENSE TRANSFER
OF THE AEROTEST RADIOGRAPHY AND RESEARCH REACTOR

United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of: AEROTEST OPERATIONS, INC. (Aerotest Radiography and Research Reactor)	
	ASLBP #: 14-931-01-LT-BD01
	Docket #: 05000228
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Anita Ghosh
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Counsel for NRC Staff

June 13, 2014

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.1322(a)(1) and the Presiding Officer's May 13, 2014 and May 22, 2014 orders in this proceeding,¹ the U.S. Nuclear Regulatory Commission (NRC) staff (Staff) hereby submits its initial written statement of position concerning the claim by Aerotest Operations, Inc. (Aerotest) and Nuclear Labyrinth, LLC (Nuclear Labyrinth) (collectively, the Companies) that the Staff improperly denied the Companies' application for the indirect transfer of the Aerotest Radiography and Research Reactor (ARRR) license to Nuclear Labyrinth on the grounds that the application did not satisfy the Commission's financial qualifications requirements. The Staff's statement of position is supported by the written testimony and affidavits of Ms. Jocelyn Lian and Ms. Anneliese Simmons (Exhibit NRC-002) and Mr. Alexander Adams Jr. (Exhibit NRC-003), and the exhibits cited therein. For the reasons set forth below and in the supporting testimony, the Staff respectfully submits that the Companies'

¹ Memorandum and Order (Initial Scheduling Order and Administrative Directives) (May 13, 2014) (unpublished) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14133A564); Memorandum and Order (Ruling on Admissibility of Areas of Controversy) (May 22, 2014) (unpublished) (ADAMS Accession No. ML14142A237).

claim is unsupported and lacks merit. Accordingly, the Staff's denial of the indirect license transfer should be upheld.

BACKGROUND

This matter arises from Aerotest and Nuclear Labyrinth's May 30, 2012 application for an indirect license transfer of Facility Operating License No. R-98 for the ARRR (Application).² The ARRR is a commercial non-power reactor located near San Ramon, California. Aerotest currently holds the operating license for the ARRR.³ Aerotest is a wholly-owned subsidiary of OEA Aerospace, Inc. (OEA Aerospace), which is a wholly-owned subsidiary of OEA, Inc. (OEA), which is a wholly-owned subsidiary of Autoliv ASP, Inc. (Autoliv ASP), which is a wholly-owned subsidiary of Autoliv, Inc. (Autoliv).⁴ The ownership of Aerotest changed when Autoliv ASP acquired all outstanding shares of OEA in 2000.⁵ Autoliv is a company headquartered in Sweden and incorporated in Delaware.⁶ This ownership change constituted an indirect license transfer of the ARRR to Autoliv but it was not the subject of an application for prior NRC approval as is required by 10 C.F.R. § 50.80; therefore, the transfer was neither reviewed nor approved by the NRC.⁷ Subsequently, in 2003, the NRC directed Aerotest and Autoliv to

² See Letter from Dario Brisighella, President, Aerotest Operations, Inc., and Dr. David M. Slaughter, Chief Executive Officer, Nuclear Labyrinth LLC, to NRC Document Control Desk, Application for Approval of Indirect Transfer of Control of License Pursuant to 10 C.F.R. § 50.80 (May 30, 2012) [Exhibit NRC-007]; Attachments 1-11 [Exhibits NRC-008 and NRC-008(P)] (Application). The "(P)" in an exhibit number denotes that the exhibit contains proprietary information.

³ See Aerotest Operations, Inc., Docket No. 50-228, Aerotest Radiography and Research Reactor (ARRR), Amendment to Facility Operating License, Amendment No. 1, License No. R-98 [Exhibit NRC-009] (ARRR License).

⁴ See Letter from Michael S. Anderson, Vice President for Legal Affairs and General Counsel, Autoliv, Inc., to David Mathews, Director, NRR, and Marvin Mendonca, Senior Project Manager, NRR, NRC, Divestiture Plan Regarding Indirect Transfer of the Aerotest Radiography and Research Reactor (ARRR) (Jan. 29, 2004) [Exhibit NRC-011].

⁵ See *id.*

⁶ See Letter from Sandra L. Warren, Manager, Aerotest Operations, Inc., to Director, NRR, NRC (Apr. 14, 2000) [Exhibit NRC-012].

⁷ See Letter from Ledyard B. Marsh, NRC, to Ray Tsukimura, President, Aerotest Operations, Inc., Transfer of Ownership, (Oct. 18, 2000) [Exhibit NRC-013].

develop a plan for full or partial divestiture to ensure that the ARRR is not wholly owned, directly or indirectly, by Autoliv.⁸ In response, Autoliv decided to pursue the sale of Aerotest.⁹

On May 30, 2012, the Companies submitted an application to the NRC seeking its consent to the indirect license transfer of the ARRR through the acquisition of Aerotest by Nuclear Labyrinth.¹⁰ On July 5, 2012, the Staff informed the Companies that it was unable to complete its acceptance review without additional information.¹¹ The Companies provided their response on July 19, 2012.¹² With this response, the Staff accepted the license transfer application for review.¹³ The Staff requested additional information on September 14, 2012.¹⁴ The Companies responded on October 15, 2012.¹⁵ The *Federal Register* notice of NRC

⁸ See Letter from David B. Matthews, NRC, to Michael Anderson, General Counsel, Autoliv, and Ray R. Tsukimura, President, Aerotest Operations, Inc., Divestiture Plan Regarding Indirect Transfer of the Aerotest Radiography and Research Reactor (ARRR) to Autoliv ASP, Inc., and Autoliv, Inc. (Oct. 7, 2003) [Exhibit NRC-014].

⁹ See Letter from Michael Anderson, Vice President for Legal Affairs and General Counsel, Autoliv, to David Mathews, NRC, RE: Divestiture Plan Regarding Indirect Transfer of the Aerotest Radiography and Research Reactor (ARRR) to Autoliv ASP, Inc., and Autoliv, Inc. (Dec. 4, 2003) [Exhibit NRC-015].

¹⁰ Exhibits NRC-008 (Application), at 1 and NRC-008(P) (Application), at 1.

¹¹ See Letter from Jessie Quichocho, NRC, to Dario Brisighella, President, Aerotest Operations, Inc., and David M. Slaughter, Chief Executive Officer, Nuclear Labyrinth, LLC, Request to Aerotest Operations, Inc. and Nuclear Labyrinth LLC to Supplement the License Transfer Application (July 5, 2012) [Exhibit NRC-016]; Enclosure, Required Supplemental Information For The NRC Acceptance Review of the License Transfer Applications Which Was Submitted by Aerotest and Nuclear Labyrinth (July 5, 2012) [Exhibit NRC-017] (RAI #1).

¹² See Letter from Jay Silberg, Counsel, Aerotest Operations, Inc., to NRC Document Control Desk, Response to Request to Aerotest Operations, Inc. and Nuclear Labyrinth LLC to Supplement the License Transfer Application (July 19, 2012) [Exhibits NRC-018, NRC-018(P)] (RAI Response #1).

¹³ See Letter from Alexander Adams, NRC, to Dario Brisighella, President, Aerotest Operations, Inc., and David M. Slaughter, Chief Executive Officer, Nuclear Labyrinth, LLC, Acceptance of Requested License Transfer Application (Aug. 14, 2012) [Exhibit NRC-019].

¹⁴ See Letter from Alexander Adams, NRC, to Dario Brisighella, President, Aerotest Operations, Inc., and David M. Slaughter, Chief Executive Officer, Nuclear Labyrinth, LLC, Request for Additional Information Re: Application for Approval of Indirect Transfer of Control of License of Aerotest Radiography and Research Reactor Pursuant to 10 CFR 50.80 (Sept. 14, 2012) [Exhibit NRC-020]; Enclosure, Request for Additional Information Regarding the Indirect License Transfer Aerotest Radiography and Research Reactor Facility Operating License No. R-98 Docket No. 50-228 (Sept. 14, 2012) [Exhibits NRC-021 and NRC-021(P)] (RAI #2).

¹⁵ See Letter from Jay Silberg, Counsel, Aerotest Operations, Inc., to NRC Document Control Desk, Response to Request for Additional Information Re: Application for Approval of Indirect Transfer of

consideration of the indirect license transfer application was published on December 6, 2012.¹⁶

The Staff requested additional information on December 10, 2012.¹⁷ A public meeting was held on December 19, 2012 to discuss this request with the Companies.¹⁸ The Companies responded to the Staff's December 10 request for additional information on January 10, 2013.¹⁹

The Staff evaluated the information provided in the Application as well as the information provided in response to the Staff's requests for additional information (RAIs). After considering the reasonableness of the provided estimated operating costs, the reasonableness of the provided financial projections and their underlying assumptions, and the sensitivity of the provided revenue projections, among other things, the Staff concluded that "neither Aerotest nor Nuclear Labyrinth meets the financial qualification requirements under 10 CFR 50.33(f) because they have not demonstrated that they possess or have reasonable assurance of obtaining the funds necessary to cover estimated operating costs for the period of the license."²⁰ Accordingly, on July 24, 2013, the Staff denied the Companies' indirect license transfer application because "the NRC does not have reasonable assurance, as required by 10 CFR 50.33, that Nuclear

Control of License of Aerotest Radiography and Research Reactor Pursuant to 10 CFR 50.80 (Oct. 15, 2012) [Exhibits NRC-022 and NRC-022(P)] (RAI Response #2).

¹⁶ See Aerotest Operations, Inc., Consideration of Indirect Transfer and Conforming Amendment, 77 Fed. Reg. 72,889 (Dec. 6, 2012) [Exhibit NRC-044].

¹⁷ See Letter from Alexander Adams, NRC, to Dario Brisighella, President, Aerotest Operations, Inc., and David M. Slaughter, Chief Executive Officer, Nuclear Labyrinth, LLC, Request for Additional Information Re: Application for Approval of Indirect Transfer of Control of License of Aerotest Radiography and Research Reactor Pursuant to 10 CFR 50.80 (Dec. 10, 2012) [Exhibit NRC-023]; Enclosure, Office of Nuclear Reactor Regulation Request for Additional Information Re: Application for Indirect License Transfer of Aerotest Radiography and Research Reactor Facility Operating License No. R-98 Docket No. 50-228 (Dec. 10, 2012) [Exhibits NRC-024 and NRC-024(P)] (RAI #3).

¹⁸ See Summary of December 19, 2012, Meeting with Aerotest Operations, Inc., and Nuclear Labyrinth, LLC, On the Request for Additional Information on the Proposed Indirect License Transfer Application of the Aerotest Radiography and Research Reactor (Jan. 18, 2013) [Exhibit NRC-025].

¹⁹ See Letter from Jay Silberg, Counsel, Aerotest Operations, Inc., to the NRC Document Control Desk, Response to Request for Additional Information Re: Application for Approval of Indirect Transfer of Control of License of Aerotest Radiography and Research Reactor Pursuant to CFR 50.80 (Jan. 10, 2013) [Exhibits NRC-026 and NRC-026(P)] (RAI Response #3).

²⁰ Safety Evaluation by the Office of Nuclear Reactor Regulation, Indirect License Transfer of Aerotest Radiography and Research Reactor Due to the Proposed Acquisition of Aerotest Operations, Inc. by Nuclear Labyrinth, LLC, Facility Operating License No. R-98, Docket No. 50-228 (Jul. 24, 2013) [Exhibits NRC-027, at 9 and NRC-027(P), at 9] (Safety Evaluation (SE)).

Labyrinth, LLC, would have sufficient funding to conduct the activities authorized by the ARRR license if the license were transferred.”²¹

On August 13, 2013, Aerotest and Nuclear Labyrinth filed with the Commission a joint demand for a hearing on, *inter alia*, the NRC’s denial of the indirect license transfer application.²² On April 10, 2014, the Commission granted the Companies’ request for a hearing on the Staff’s denial of their indirect license transfer application and directed the Companies to file a statement outlining their areas of controversy regarding the denial with the Presiding Officer.²³ On April 22, 2014, the Companies submitted their proposed areas of controversy.²⁴ The Staff filed its response on May 9, 2014.²⁵

On May 22, 2014, the Presiding Officer issued an order responding to the Companies’ and the Staff’s filings regarding the areas of controversy.²⁶ This order held that the areas of litigable controversy in this proceeding are limited to the following two issues: (1) whether the

²¹ Letter from Eric J. Leeds, NRC, to Michael Anderson, President, Aerotest Operations, Inc., Denial of License Renewal, Denial of License Transfer, and Issuance of Order to Modify License No. R-98 to Prohibit Operation of the Aerotest Radiography and Research Reactor, Facility Operating License No. R-98 (July 24, 2013) [Exhibit NRC-028].

²² Joint Demand for Hearing on Denial of License Renewal and Indirect License Transfer Regarding Aerotest Radiography and Research Reactor Facility Operating License No. R-98 (Aug. 13, 2013) (ADAMS Accession No. ML13226A407) (Joint Demand).

The Joint Demand also demanded a hearing on the NRC’s denial of a license renewal request for the ARRR and, in a separate filing on August 12, 2013, the Companies jointly demanded a hearing in response to an NRC order prohibiting operation of the ARRR. See Joint Answer to and Demand for Hearing on Order Prohibiting Operation of Aerotest Radiography and Research Reactor Facility Operating License No. R-98 (Aug. 12, 2013) (ADAMS Accession No. ML13226A412).

The Commission denied the Companies’ request to consolidate these two demands with their indirect license transfer demand and deferred consideration of these two demands pending completion of the indirect license transfer demand. *Aerotest Operations, Inc.* (Aerotest Radiography and Research Reactor), CLI-14-05, 79 NRC __, __ (Apr. 10, 2014) (slip op. at 1-2).

²³ *Aerotest*, CLI-14-05, 79 NRC at __ (slip op. at 14-15).

²⁴ Aerotest Operations, Inc. and Nuclear Labyrinth, LLC’s Statement of Areas of Controversy Regarding Denial of Indirect License Transfer of Aerotest Radiography and Research Reactor (Apr. 22, 2014) (ADAMS Accession No. ML14112A162).

²⁵ NRC Staff Response to Aerotest Operations, Inc. and Nuclear Labyrinth, LLC’s Statement of Areas of Controversy Regarding Denial of Indirect License Transfer of Aerotest Radiography and Research Reactor (May 9, 2014) (ADAMS Accession No. ML14129A479).

²⁶ Memorandum and Order (Ruling on Admissibility of Areas of Controversy) (May 22, 2014) (unpublished) (ADAMS Accession No. ML14142A237).

Staff correctly determined that the Companies failed to demonstrate that they possess, or have reasonable assurance of obtaining the funds necessary to cover, estimated operating costs for the period of the license; and (2) whether the Staff correctly determined that the Companies failed to provide reasonable assurance that they had sufficient funds to cover the annual costs for storing spent fuel until the Department of Energy (DOE) accepts the fuel.²⁷

DISCUSSION

I. Legal Standards

Pursuant to Section 104c. of the Atomic Energy Act of 1954, as amended (AEA), Aerotest is authorized to possess, use, and operate the ARRR as a utilization facility that is “useful in the conduct of research and development activities.”²⁸ This authorization may not be “transferred, assigned or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person, unless the Commission shall, after securing full information, find that the transfer is in accordance with the provisions of [the AEA], and shall give its consent in writing.” AEA § 184.

The Commission regulation governing license transfers is 10 C.F.R. § 50.80, which states that an application for license transfer shall include, “as much of the information described in §§ 50.33 and 50.34 of this part with respect to the identity and technical and financial qualifications of the proposed transferee as would be required by those sections if the application were for an initial license.” 10 C.F.R. § 50.80(b)(1)(i). Upon reviewing this information, the Commission will approve an application for the transfer of a license if the Commission determines that “the proposed transferee is qualified to be the holder of the license” and “the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.” 10 C.F.R. § 50.80(c).

²⁷ *Id.* at 4. These two issues track the two conclusions that the Staff relied upon for denying the indirect license transfer application. See Exhibits NRC-027 (SE), at 9, 11 and NRC-027(P) (SE), at 9, 11.

²⁸ See also 10 C.F.R. § 50.21(c).

One of the requirements for both an initial AEA § 104c. license and a transfer of such a license is the financial qualifications requirement of AEA § 182a., which is codified by the Commission's regulations at 10 C.F.R. § 50.33(f). This regulation requires the submission of, "information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with regulations in this chapter, the activities for which the permit or license is sought." 10 C.F.R. § 50.33(f). Specifically, the applicant must submit information "that demonstrates the applicant possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license." 10 C.F.R. § 50.33(f)(2).

The Commission has stated that the "fundamental purpose" of its financial qualifications requirement is "the protection of public health and safety and the common defense and security."²⁹ Indeed, the Commission's regulations codifying the financial qualifications requirement "recognize that underfunding can affect plant safety" 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."³⁰

Consequently, 10 C.F.R. § 50.33(f) "prescribes in detail precisely what a reactor license applicant must demonstrate."³¹ This includes "estimates for total annual operating costs for each of the first five years of operation of the facility" and "the source(s) of funds to cover these costs." 10 C.F.R. § 50.33(f)(2). Using "projections of future revenue is a typical method for license applicants to demonstrate that they can meet costs."³² However, just the submission of 5-year costs-and-revenue projections is not sufficient; whether these projections are reasonable

²⁹ *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, 303 (1997) (quoting Financial Qualifications, 33 Fed. Reg. 9,704 (July 4, 1968)).

³⁰ *Gulf States Utilities Co.* (River Bend Station, Unit 1), CLI-94-10, 40 NRC 43, 48 (1994) (internal quotations and citations omitted).

³¹ *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-00-13, 52 NRC 23, 30 (2000) (citing 10 C.F.R. § 50.33(f) and 10 C.F.R. Part 50, Appendix C).

³² *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-04-27, 61 NRC 145, 150 (2004).

is “[a]lways in question under section 50.33(f)(2).”³³ Thus, the kinds of issues the NRC typically considers in license transfer cases are whether cost estimates are unrealistic or revenues are insufficient.³⁴ A realistic cost estimate is one that “indicates that the licensee ‘understands its funding commitment and has seriously considered the factors that will contribute to the expense of the project it is undertaking.’”³⁵

Moreover, a “newly-formed entity” is also subject to the “stricter” financial requirements of 10 C.F.R. § 50.33(f)(4),³⁶ which requires a newly-formed entity to submit additional information showing: (1) “[t]he legal and financial relationships it has or proposes to have with its stockholders or owners”; (2) “[t]he stockholders' or owners' financial ability to meet any contractual obligation to the entity which they have incurred or proposed to incur”; and (3) “[a]ny other information considered necessary by the Commission to enable it to determine the applicant's financial qualification.” Finally, if the Commission considers it appropriate, the Commission may request additional financial information including “information regarding a licensee’s ability to continue the conduct of the activities authorized by the license and to decommission the facility.” 10 C.F.R. § 50.33(f)(5).

Chapter 15, “Financial Qualifications,” of NUREG-1537, “Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors,” Part 2,³⁷ provides guidelines for the Staff determination of whether a licensee or applicant is financially qualified to own,

³³ *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 220-21 (1999).

³⁴ *Pacific Gas and Electric Co.* (Diablo Canyon Power Plant, Units 1 and 2), CLI-02-16, 55 NRC 317, 339 (2002).

³⁵ *PFS*, CLI-04-27, 61 NRC at 155 (quoting *Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), CLI-97-15, 46 NRC 294, 307 (1997)).

³⁶ *Power Authority of the State of New York and Entergy Nuclear FitzPatrick LLC, Entergy Nuclear Indian Point 3 LLC, and Entergy Nuclear Operations, Inc.* (James A. FitzPatrick Nuclear Power Plant and Indian Point Nuclear Generating Unit No. 3), CLI-00-22, 52 NRC 266, 298 (2000).

³⁷ See NUREG-1537, Part 2, Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors Standard Review Plan and Acceptance Criteria (Feb. 1996) [Exhibit NRC-029, at 15-1 – 15-6] (NUREG-1537, Part 2).

operate, and decommission a non-power reactor.³⁸ The Staff's review process includes confirming that the licensee or applicant provided an estimate of the first 5 years of operating cost and has given a reliable basis for the estimate, such as past operating costs or costs of operating similar facilities.³⁹ The 5-year estimates should be sufficiently detailed to show categories of spending, such as salaries, benefits and overhead, equipment, and supplies.⁴⁰

The licensee or applicant should also discuss the sources of funding for operating costs, the amount of funding that is committed, and the amount that is potentially available.⁴¹ The applicant should also confirm committed sources and discuss conditions under which potential sources of funding would become committed and how the facility can be safely operated if some potential sources of funding are not realized.⁴² If the source of funding is not committed, the licensee or applicant should discuss the probability of acquiring the funds and the potential source of the funds.⁴³ The licensee or applicant should also discuss the possibility of operating the facility without this funding.⁴⁴ The licensee or applicant should provide supporting documentation for funding that is committed.⁴⁵

³⁸ The Companies have suggested that NUREG-1577, Rev. 1, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance" (Dec. 13, 2001) (ADAMS Accession No. ML013330264) is applicable to the Staff's review for the ARRR. Aerotest Operations, Inc. and Nuclear Labyrinth, LLC's Statement of Areas of Controversy Regarding Denial of Indirect License Transfer of Aerotest Radiography and Research Reactor (Apr. 22, 2014) (ADAMS Accession No. ML14112A162), at 5. This assertion is incorrect. NUREG-1577 is applicable to power reactors, whereas the ARRR is a non-power reactor. Therefore, the Staff's review related to the ARRR was properly guided by NUREG-1537 and not NUREG-1577. See Exhibit NRC-002 (Lian & Simmons Testimony), at 9.

³⁹ See Exhibit NRC-029 (NUREG-1537, Part 2), at 15-4.

⁴⁰ See NUREG-1537, Part 1, Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors Format and Content (Feb. 1996) [Exhibit NRC-042, at 15-2 – 15-3] (NUREG-1537, Part 1).

⁴¹ See Exhibit NRC-029 (NUREG-1537, Part 2), at 15-4.

⁴² See Exhibit NRC-029 (NUREG-1537, Part 2), at 15-4.

⁴³ See Exhibit NRC-042 (NUREG-1537, Part 1), at 15-3.

⁴⁴ *Id.*

⁴⁵ *Id.*

As for the level of assurance that the Commission requires for the applicant's ability to meet its financial obligations, the Commission has stated that its standard is

less than the extremely high assurance the Commission requires regarding the safety of reactor design, construction, and operation. The Commission will accept financial assurances based on *plausible assumptions and forecasts*, even though the possibility is not insignificant that things will turn out less favorably than expected. Thus, the mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance.

At the same time, though, funding plans that rely on *assumptions seriously at odds with governing realities* will not be deemed acceptable simply because their form matches plans described in the regulations. . . . [Therefore,] we cannot brush aside . . . economically based safety concerns [such as that the applicant's cost-and-revenue estimates fail to provide the required assurance because they do not reflect a realistic outlook for the applicant or for the nuclear power industry in the region.] [However, such arguments] ultimately will prevail only if [they] can demonstrate *relevant uncertainties significantly greater than those that usually cloud business outlooks*.⁴⁶

In conclusion, it is not the NRC's "duty or desire to micromanage the finances of its licensees."⁴⁷ Thus the Commission does not require "absolute certainty in the financial area,"⁴⁸ and recognizes that "[s]peculation' of some sort is unavoidable when the issue at stake concerns predictive judgments about an applicant's future financial capabilities."⁴⁹ However, the applicant still bears the burden to show, by a preponderance of the evidence, that it meets the Commission's financial qualifications rule.⁵⁰ This means that the applicant's cost-and-revenue projections must not rely on assumptions seriously at odds with governing realities and must not

⁴⁶ *Seabrook*, CLI-99-6, 49 NRC at 221-22 (emphasis added).

⁴⁷ *PFS*, CLI-04-27, 61 NRC at 149.

⁴⁸ *Power Authority of the State of New York and Entergy Nuclear Fitzpatrick LLC, Entergy Nuclear Indian Point 3, LLC, and Entergy Nuclear Operations, Inc.* (James A. FitzPatrick Nuclear Power Plant; Indian Point, Unit 3), CLI-01-14, 53 NRC 488, 517 (2001) (internal quotations omitted).

⁴⁹ *Seabrook*, CLI-99-6, 49 NRC at 219-20.

⁵⁰ *Fitzpatrick*, CLI-01-14, 53 NRC at 517 (citing *Hydro Resources, Inc.* (P.O. Box 15910 Rio Rancho, NM 87174), CLI-01-04, 53 NRC 31, 47, 63 (2001); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 421 (1980)).

involve uncertainties significantly greater than those that usually cloud business outlooks.⁵¹

Additionally, the applicant must demonstrate that it is extremely unlikely that there will be underfunding that will lead to a health, safety, or a common defense or security risk.⁵²

II. The Staff's Denial of the Indirect License Transfer Application Should Be Upheld Because the Companies Do Not Satisfy the Commission's Financial Qualifications Requirements

The Companies argue that they have provided an adequate showing of financial qualifications in their Application and three responses to Staff RAIs.⁵³ However, the Companies have not submitted information sufficient to demonstrate their financial qualifications to carry out, in accordance with the Commission's regulations, the activities for which the ARRR is licensed because they have not demonstrated that they possess or have reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license. Instead, the Companies base their financial qualifications on: (1) a funding commitment that covers only the first 12 months of operating costs; (2) speculative and unreasonable revenue projections for years two through five; (3) cost-and-revenue projections that do not take into consideration the possibility of additional costs related to replacement of damaged fuel elements; and (4) the assumption that the Companies will accumulate enough funds from a fuel storage fee assessed against ARRR operations in order to cover fuel storage costs until 2055. Thus, the Companies' showing of financial qualifications is insufficient because, as discussed below, they "rely on assumptions [that are] seriously at odds with governing realities" and do not resolve uncertainties surrounding the transfer that remain "significantly greater than those that usually cloud business outlooks."⁵⁴

⁵¹ *Seabrook*, CLI-99-6, 49 NRC at 222.

⁵² *LES*, CLI-97-15, 46 NRC at 306.

⁵³ Aerotest Operations, Inc. and Nuclear Labyrinth, LLC's Statement of Areas of Controversy Regarding Denial of Indirect License Transfer of Aerotest Radiography and Research Reactor, at 2-4 (Apr. 22, 2014) (ADAMS Accession No. ML14112A162).

⁵⁴ *Seabrook*, CLI-99-6, 49 NRC at 221-22.

Taken together, the information provided by the Companies is insufficient to demonstrate that the proposed indirect license transfer will not pose a risk to the public health and safety, or the common defense or security.⁵⁵ Therefore, the Staff properly concluded that the Companies did not demonstrate that they have reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license as required by 10 C.F.R. § 50.33(f)(2).⁵⁶ Accordingly, the Staff's denial of the Companies' indirect license transfer application should be upheld as being consistent with the AEA, the Commission's regulations, and the Commission's case law.

A. The Companies Do Not Demonstrate that They Possess the Funds Necessary to Cover Estimated Operation Costs for the Period of the License Through Funding Commitments

The Companies provided the following information in order to attempt to satisfy the Commission's financial qualifications requirement. They stated that "[a]ll liabilities regarding the management, storage, removal and disposal of the nuclear fuel located at the facility, as well as liabilities associated with the decommissioning of the site, would be transferred to Nuclear Labyrinth."⁵⁷ In order to ensure that Nuclear Labyrinth could satisfy these obligations, Autoliv, at the time of the proposed indirect license transfer, committed to contribute funds for a decommissioning trust as well as funds "sufficient to fund approximately twelve months of operating expenses during the restart of the facility and its resumption of commercial operations."⁵⁸

Autoliv's decommissioning trust fund commitment totaled [REDACTED]⁵⁹ and was based on an estimate of the amount that decommissioning the ARRR would cost

⁵⁵ LES, CLI-97-15, 46 NRC at 306.

⁵⁶ Exhibits NRC-027 (SE), at 9, 14-15 and NRC-027(P) (SE), at 9, 14-15.

⁵⁷ Exhibits NRC-008 (Application), at 4 and NRC-008(P) (Application), at 4.

⁵⁸ *Id.* See also Exhibit NRC-022(P) (RAI Response #2), at 1 ("The \$943,225 provides Aerotest with 12 months of operating expenses to return the facility to operational status, capable of providing customer services. These expenses include salaries and benefits for five people, taxes, utilities, phone, office supplies, maintenance, and insurance.").

⁵⁹ Exhibit NRC-022(P) (RAI Response #2), at 5.

excluding spent fuel management and removal and transport of the spent fuel by the DOE.⁶⁰

Autoliv's commitment to fund the first year of operating expenses totaled [REDACTED]
[REDACTED]⁶¹ In

addition, the pro forma balance sheet for Nuclear Labyrinth showed current assets of [REDACTED]
[REDACTED]
[REDACTED].⁶²

Additionally, Aerotest has a contract with the DOE specifying the fee for cask use, transportation, and disposal of fuel at [REDACTED]
[REDACTED].⁶³ DOE representatives also provided a cost estimate of [REDACTED] for canisters approved for transport of damaged fuel elements within the casks.⁶⁴ In order to address this obligation, Autoliv also committed to transfer [REDACTED] to a trust fund, similar to the fund used for decommissioning, at closing.⁶⁵ Finally, the Companies stated that Nuclear Labyrinth would maintain a [REDACTED] line of credit to be used in the event that future updates to the decommissioning cost estimate or decommissioning fund performance results in a shortfall of the decommissioning fund's balance.⁶⁶

The Commission's financial qualifications regulation at 10 C.F.R. § 50.33(f)(2) requires an applicant to provide sources of funds to cover the total annual operating costs for each of the first five years of operation. As noted above, besides the [REDACTED]
[REDACTED] all of which the Companies have claimed are being maintained for the purpose of decommissioning, the Companies have only identified one source of

⁶⁰ See Exhibits NRC-008 (Application), at 58 and NRC-008(P) (Application), at 58.

⁶¹ See Exhibit NRC-026(P) (RAI Response #3), at 38-39, 115.

⁶² Exhibit NRC-022(P) (RAI Response #2), at 11.

⁶³ Exhibits NRC-022 (RAI Response #2), at 8 and NRC-022(P) (RAI Response #2), at 4.

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ Exhibits NRC-022 (RAI Response #2), at 10 and NRC-022(P) (RAI Response #2), at 6.

committed funds to cover operating expenses, that is, the [REDACTED] for the ARRR's year one staffing costs. Based on this showing, the Companies cannot satisfy 10 C.F.R. § 50.33(f)(2) by means of committed sources of funds.

B. The Companies Do Not Demonstrate that They Have Reasonable Assurance of Obtaining the Funds Necessary to Cover Estimated Operation Costs for the Period of the License Because their Revenue Projections Are Speculative and Unreasonable

Instead of identifying committed sources of funds, the Companies identify the revenue to be generated by the ARRR as the source of funds for operation costs beyond year one. To support this claim, the Companies provided cost-and-revenue projections for years two through five.⁶⁷ The Companies stated that they would generate revenue from three areas: (1) commercial services; (2) research; and (3) training activities.⁶⁸ However, as explained below, using the information provided by the Companies, the Staff could not determine that the Companies' revenue projections were reasonable and based on plausible assumptions and forecasts. Thus the Staff concluded that the Companies did not demonstrate that they have reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license.⁶⁹

1. Revenue from Commercial Services

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁶⁷ See Exhibit NRC-026(P) (RAI Response #3), at 39.

⁶⁸ Exhibit NRC-018(P) (RAI Response #1), at 2-4.

⁶⁹ Exhibits NRC-027 (SE), at 9, 14-15 and NRC-027(P) (SE), at 9, 14-15.

⁷⁰ Exhibit NRC-018(P) (RAI Response #1), at 2.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] However, the Staff did not consider this information because, according to the guidance in NUREG-1537, applicants should confirm committed funding sources and discuss conditions under which potential funding sources would become committed and how the facility can be safely operated if some potential funding sources are not realized.⁷³

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Therefore, based on this minimal information, the Staff could not determine whether the Companies' revenue projections were reasonable and based on plausible assumptions and forecasts. On the contrary, the Staff determined that the uncertainties involved in the Companies' revenue projection were significantly greater than those usually involved in business outlooks.⁷⁶ Thus, this attempt by the Companies to

⁷¹ *Id.*

⁷² *Id.*

⁷³ Exhibit NRC-029 (NUREG-1537, Part 2), at 15-4; Exhibit NRC-002 (Lian & Simmons Testimony), at 17-18.

⁷⁴ Exhibit NRC-018(P) (RAI Response #1), at 2-3.

⁷⁵ See Exhibit NRC-018(P) (RAI Response #1), at 2-3.

⁷⁶ See Exhibit NRC-002 (Lian & Simmons Testimony), at 18.

demonstrate that they had reasonable assurance of obtaining the funds necessary to cover costs was insufficient to satisfy the Commission's financial qualifications regulations.

In order to address this insufficiency of the sources of funds for their projected revenue, the Companies subsequently provided the Staff with [REDACTED] documents in the form of letters and emails, which they described as "customer letters of intent."⁷⁷ NRC Staff practice is to assess letters of intent.⁷⁸ Specifically, NUREG-1537 directs the Staff to evaluate and comment on the activities considered to be commercial activities at a non-power reactor.⁷⁹ The Staff did not, however, consider these documents to actually be letters of intent because, based on their language and the non-operational status of the ARRR, they did not reflect an intent on the part of their authors to enter into a formal agreement, either on their own behalf or on behalf of the businesses with which they were associated with Aerotest. Nevertheless, the Staff evaluated these documents as a basis for potential future revenues.⁸⁰

As part of this evaluation, the Staff determined that [REDACTED] of the documents were dated prior to the shutdown of the ARRR on October 15, 2010. The Staff concluded that these documents did not necessarily demonstrate potential future revenues because they were predicated on a need for the ARRR's services and the Companies had not demonstrated that the authors of these letters still needed the ARRR's services and have not found replacement services since the shutdown of the ARRR. Using the remaining [REDACTED] documents and assumptions that were the most favorable to the Companies, the Staff developed revenue projections for the ARRR's potential commercial services and potential training services. With respect to projected ARRR revenue from commercial services, the Staff relied on historic data provided by the Companies for [REDACTED]

⁷⁷ See Exhibit NRC-026(P) (RAI Response #3), at 6-32.

⁷⁸ See Exhibit NRC-002 (Lian & Simmons Testimony), at 19.

⁷⁹ Exhibit NRC-029 (NUREG-1537, Part 2), at 15-4.

⁸⁰ See Exhibit NRC-002 (Lian & Simmons Testimony), at 19.

[REDACTED] This was the most projected revenue from commercial services that the Staff could estimate because this was the only relevant information that the Companies had submitted to the NRC.⁸¹

In order to calculate the potential revenue from [REDACTED] and because the Companies did not submit clear supporting documents to demonstrate their potential revenue from commercial services, the Staff had to make several assumptions. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The burden is on the applicant to justify its cost-and-revenue projections beyond simply listing those projections,⁸³ and these documents in no way explained the Companies' revenue projections.⁸⁴ [REDACTED]

[REDACTED]

[REDACTED] Given these assumptions, this revenue projection was highly speculative, but it allowed the Staff to generate a value for potential revenue for the ARRR's commercial services that could be compared the ARRR's estimated costs.⁸⁵

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁸¹ See Exhibit NRC-002 (Lian & Simmons Testimony), at 19-23.

⁸² See Exhibit NRC-002 (Lian & Simmons Testimony), at 21-23.

⁸³ *Fitzpatrick*, CLI-01-14, 53 NRC at 517.

⁸⁴ See Exhibit NRC-002 (Lian & Simmons Testimony), at 21-23.

⁸⁵ See *id.*

⁸⁶ See Exhibit NRC-018(P) (RAI Response #1), at 4.

[REDACTED]

[REDACTED]

[REDACTED] Based on this information and the Staff's assumptions giving the benefit of the doubt to the Companies, the Staff estimated that the total revenue that could potentially be generated from the ARRR's commercial activities would not exceed

[REDACTED]

[REDACTED]⁸⁷.

2. Revenue from Research

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED] Following year two, the Companies estimated that research revenue would increase by 25 percent each year until the completion of year five at which point the growth rate would lower to three percent per year.⁹⁰

This information was not sufficient for the Staff to make a determination that the projected revenue from research was reasonable because the Companies provided no evidence or documentation of specific grants or research funds but merely asserted that [REDACTED]

[REDACTED]

[REDACTED]

⁸⁷ Exhibit NRC-002 (Lian & Simmons Testimony), at 21-23. See also Exhibit NRC-027(P) (SE), at 6.

⁸⁸ See Exhibit NRC-018(P) (RAI Response #1), at 3.

⁸⁹ See Exhibit NRC-018(P) (RAI Response #1), at 4.

⁹⁰ Exhibits NRC-026 (RAI Response #3), at 5 and NRC-026(P) (RAI Response #3), at 2.

⁹¹ *Id.*

[REDACTED] Therefore, the Companies' research revenue projection was uncertain and the Staff did not have sufficient information on which to base a finding that this research revenue projection was reasonable and based on plausible assumptions and forecasts.⁹²

3. Revenue From Training Activities

With respect to projected revenue from training, the Companies stated that the projected revenue for training was [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Because the projected revenue for training [REDACTED] was less than the actual revenue in 2011 [REDACTED], the Staff found the revenue projection to be reasonable.⁹⁵

4. Total Projected Revenue

Based on the Staff revenue projections developed from the information submitted by the Companies, the Staff determined that, in the event that the ARRR returns to full commercial operation, its total revenue for year two would be approximately [REDACTED]. This value is equal to projected commercial services revenue of approximately [REDACTED] and projected training revenue of approximately [REDACTED]. This value is significantly less than the lowest projected annual operation cost for the ARRR of [REDACTED]. This is not an estimate of what Aerotest *could* make in year two, but rather a summation of all of the sources of revenue supported by

⁹² Exhibit NRC-002 (Lian & Simmons Testimony), at 24; Exhibits NRC-027 (SE), at 6 and NRC-027(P) (SE), at 6.

⁹³ Exhibit NRC-018(P) (RAI Response #1), at 3.

⁹⁴ See Exhibit NRC-026(P) (RAI Response #3), at 40-42.

⁹⁵ See Exhibit NRC-002 (Lian & Simmons Testimony), at 25; Exhibits NRC-027 (SE), at 6 and NRC-027(P) (SE), at 6.

documentation provided by the Companies. Ultimately, the Companies bear the burden of demonstrating that projected revenue will cover estimated costs. However, based only on the information provided by the Companies, this was the most revenue that could be projected with reasonable assurance and it is insufficient to cover operation costs.⁹⁶

As explained in Section II.A above, the only committed source of funds for operating expenses were Autoliv's contribution of [REDACTED] to the first year of operating costs. The Companies also stated that Nuclear Labyrinth will maintain a [REDACTED] line of credit to be used in the event that future updates to the decommissioning cost estimate or decommissioning fund performance results in a shortfall of the decommissioning fund's balance.⁹⁷ However, the Companies did not specify [REDACTED]

[REDACTED]⁹⁸ Nevertheless, the Staff conservatively evaluated the [REDACTED] line of credit against the Companies' operating expenses. Additionally, as described above, the Staff determined that the potential revenue based on the ARRR's commercial services and training services, was determined to be approximately [REDACTED].⁹⁹

The Companies stated that the ARRR's total estimated operating costs for the first five years is [REDACTED]. Based on the Staff's evaluation, the total estimated revenue for these same five years is approximately [REDACTED]

[REDACTED] Thus, the total revenues based on the sources of funds provided by the Companies [REDACTED] would be significantly less and insufficient to cover the first five years of operating costs as determined by the Companies

[REDACTED] Therefore, the Staff properly determined that the Companies did not provide

⁹⁶ See Exhibit NRC-002 (Lian & Simmons Testimony), at 25.

⁹⁷ Exhibit NRC-022(P) (RAI Response #2), at 6.

⁹⁸ See Exhibit NRC-002 (Lian & Simmons Testimony), at 27; Exhibit NRC-022(P) (RAI Response #2), at 11.

⁹⁹ See Exhibit NRC-002 (Lian & Simmons Testimony), at 25-27.

sources of funds to cover the total annual operating costs for each of the first five years of operations as required by 10 C.F.R. § 50.33(f)(2).¹⁰⁰

C. The Companies Do Not Demonstrate that They Have Reasonable Assurance of Obtaining the Funds Necessary to Cover Estimated Operation Costs for the Period of the License Because Their Cost-and-Revenue Projections Do Not Account for the Discovery of Damaged Fuel Elements at the ARRR

The Companies' assertion that the ARRR's costs will be covered by revenue in years two through five is also insufficient to demonstrate financial qualifications for the life of the ARRR license because it does not account for the potential cost and revenue impacts of the discovery of fuel elements with significant defects on the future operations of the facility.¹⁰¹

During a 100 percent inspection of its fuel elements from December 5-12, 2011, Aerotest discovered that a total of 27 of its aluminum-clad fuel elements¹⁰² could not be removed from the reactor core because they were swollen in diameter.¹⁰³ Using an underwater video camera, Aerotest determined that four of these aluminum fuel elements had cracked cladding.¹⁰⁴ When a fuel element's cladding is cracked, radioactive fission products within the fuel can potentially escape the fuel.¹⁰⁵ Aerotest subsequently determined that a total of 22 of the ARRR's aluminum fuel elements had cracked cladding, including an aluminum fuel element that had been

¹⁰⁰ See Exhibit NRC-002 (Lian & Simmons Testimony), at 27.

¹⁰¹ See Exhibits NRC-027 (SE), at 14-15 and NRC-027(P) (SE), at 14-15.

¹⁰² Aerotest possesses 77 aluminum-clad fuel elements and 39 stainless-steel-clad fuel elements. Exhibit NRC-003 (Adams Testimony), at 9. The stainless-steel-clad fuel elements are newer, provide a significant increase in safety margins, and have largely replaced the aluminum-clad fuel elements, which are no longer manufactured. *Id.* at 5. Only aluminum-clad fuel elements at the ARRR have exhibited significant defects. See *id.* at 9.

¹⁰³ Letter from Sandra Warren, General Manager, Aerotest Operations, Inc., to Spyros Traiforos, NRC (Jan. 11, 2012) [Exhibit NRC-030], at 2.

¹⁰⁴ Letter from Gregory Bowman, NRC, to Sandra Warren, General Manager, Aerotest Operations, Inc., NRC Non-Routine Inspection Report No. 50-228/2012-204 (Aug. 14, 2012) [Exhibit NRC-032], at 6.

¹⁰⁵ Exhibit NRC-003 (Adams Testimony), at 7.

previously taken out of service in 2007.¹⁰⁶ The discovery of such a large number of cracked research reactor fuel elements is unusual.¹⁰⁷

The ARRR Technical Specifications state that the ARRR “shall not be operated wherever there are significant defects in fuel elements”¹⁰⁸ The ARRR Technical Specifications do not define the term “significant defects.” Aerotest stated that the cladding cracks in its 22 aluminum fuel elements were “certainly significant defects”¹⁰⁹ and proceeded to segregate the cracked aluminum fuel elements in canisters at the bottom of the ARRR reactor pool.¹¹⁰ Historically, the Staff has considered fuel elements to be significantly defective if they are releasing fission products, do not meet the General Atomics stated limits on acceptable change in bow and length, or exhibit observable cladding defects.¹¹¹ This would include both fuel elements that are cracked and fuel elements that are swollen so that they cannot be removed from the core.¹¹²

Based on the recent discovery of cracked aluminum fuel elements and swollen aluminum fuel elements at the ARRR and the prohibition against operating the ARRR with fuel elements with significant defects, it is uncertain whether or for how long the ARRR may operate. The ARRR requires approximately 85 fuel elements to operate.¹¹³ Aerotest possesses 116 fuel elements, of which 77 are the older, aluminum-clad fuel elements and 39 are the newer,

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 8.

¹⁰⁸ Exhibit NRC-010 (ARRR TS), at 11.

¹⁰⁹ Exhibit NRC-030, at 1.

¹¹⁰ Letter from Gregory Bowman, NRC, to Sandra Warren, General Manager, Aerotest Operations, Inc., NRC Non-Routine Inspection Report No. 50-228/2012-206 (Jan. 7, 2013) [Exhibit NRC-037], at 8.

¹¹¹ Exhibit NRC-003 (Adams Testimony), at 6.

¹¹² *Id.*

¹¹³ *Id.* at 10.

stainless-steel-clad fuel elements (12 of which were new and unused).¹¹⁴ However, 22 of these aluminum fuel elements are cracked and an additional approximately 10 are swollen.¹¹⁵ This leaves the ARRR with a potentially usable fuel inventory of about 84 fuel elements.¹¹⁶ Although this is approximately enough fuel to operate the ARRR, it is uncertain whether any more of the ARRR's fuel elements have yet-to-be-discovered significant defects or whether, given their shared design and operational history, additional of the ARRR's remaining aluminum fuel elements will develop significant defects in the future.¹¹⁷

Referring to the NRC inspection report detailing the discovery of the 22 cracked aluminum fuel elements at the ARRR, the Staff asked the Companies whether this discovery affected the operating condition of the ARRR and the ARRR's cost-and-revenue projections.¹¹⁸ The Staff also asked the Companies to estimate the number of fuel elements that would need to be replaced in the future and the associated costs.¹¹⁹ The Companies responded that the license transfer transaction would not close until the ARRR is "fully operational" and, therefore, that the current licensee would pay costs associated with the fuel.¹²⁰ The Companies also stated that they were evaluating the fuel situation but that this evaluation would not be completed until the end of March 2013.¹²¹ Based on this explanation, the Companies did not

¹¹⁴ Letter from Sandra Warren, General Manager, Aerotest Operations, Inc., to Spyros Traiforos, NRC (Aug. 15, 2013) [Exhibit NRC-033], at 4.

¹¹⁵ Exhibit NRC-003 (Adams Testimony), at 9-10.

¹¹⁶ After the development of the Staff's safety evaluation, during the licensee's next routine fuel inspection from July 24-26, 2013, the licensee discovered two more aluminum fuel elements with cracks, for a total of 24 cracked aluminum fuel elements that have been discovered. See Exhibit NRC-033, at 1. These two elements have not yet been placed in canisters in order to allow for additional observation by the licensee. *Id.* at 4. This potentially decreases the ARRR's total usable fuel inventory to 82 fuel elements.

¹¹⁷ Exhibit NRC-003 (Adams Testimony), at 10.

¹¹⁸ Exhibits NRC-021 (RAI #2), at 2, 3 and NRC-021(P) (RAI #2), at 2, 3.

¹¹⁹ Exhibits NRC-024 (RAI #3), at 5 and NRC-024(P) (RAI #3), at 5.

¹²⁰ Exhibits NRC-022 (RAI Response #2), at 6, 8-9 and NRC-022(P) (RAI Response #2), at 2, 5.

¹²¹ Exhibits NRC-026 (RAI Response #3), at 7 and NRC-026(P) (RAI Response #3), at 4.

change their cost-and-revenue projections in light of the discovery of the damaged fuel elements. The Companies also never provided an evaluation of the fuel situation to the Staff.¹²²

The Commission has stated that a realistic cost estimate is one that “indicates that the licensee ‘understands its funding commitment and has seriously considered the factors that will contribute to the expense of the project it is undertaking.’”¹²³ In response to Staff questioning regarding the discoveries of a large number of significant defects in the ARRR’s fuel, specifically, cladding cracking in 22 aluminum fuel elements and swelling in approximately 10 aluminum fuel elements out of a total of only 77 aluminum fuel elements, the Companies only stated that will be fully operational before the license transfer. This statement does not clarify how the issue of cost associated with the ARRR’s aluminum fuel elements will be resolved. There still remains the possibility that the ARRR will incur future costs related to the replacement of aluminum fuel elements.¹²⁴ The Companies account for fuel replacement costs via a “fuel credit” fee assessed against ARRR operations, but this cost is based on historical data and the Companies have not indicated whether this cost has been reevaluated in light of the recent discoveries of fuel elements with significant defects.¹²⁵ Therefore, without more information regarding the Companies’ projections of fuel costs and its sources of funds to cover these costs, the Staff could not determine whether the Companies had seriously considered the factors that will contribute to the expense of the project it is undertaking.¹²⁶ Consequently, the

¹²² Exhibit NRC-003 (Adams Testimony), at 10.

¹²³ *PFS*, CLI-04-27, 61 NRC at 155 (quoting *LES*, CLI-97-15, 46 NRC at 307).

¹²⁴ See Exhibit NRC-003 (Adams Testimony), at 9-11 (explaining that it is uncertain whether and for how long the ARRR will be able to operate with its fuel on hand and that replacement fuel will not become available until approximately 2017 and at a cost of at least \$60,000 per fuel element).

¹²⁵ See Exhibits NRC-008 (Application), at 11 and NRC-008(P), at 11; Exhibits NRC-026 (RAI Response #3), at 5 and NRC-026(P) (RAI Response #3), at 2, 46.

¹²⁶ Exhibit NRC-002 (Lian & Simmons Testimony), at 28-29.

Staff denied the indirect license transfer application, in part, because the future operations of the ARRR is uncertain due to the status of the ARRR and its damaged fuel.¹²⁷

D. The Companies Do Not Demonstrate that They Have Reasonable Assurance of Obtaining the Funds Necessary to Cover Fuel Storage Costs Until the DOE's Acceptance of the Fuel in 2055

According to 10 C.F.R. § 50.33(f)(5), the Commission may request that the Companies submit additional or more detailed information respecting their financial arrangements and status of funds including information regarding their ability to continue the conduct of the activities authorized by the license and to decommission the facility. Pursuant to this authority, the Staff asked the Companies to provide information to demonstrate their ability to fund fuel storage until 2055.¹²⁸ However, as discussed below, based on the information provided by the Companies, the Staff was unable to determine that there will be sufficient funds to cover the annual cost of fuel storage until the DOE accepts the fuel in 2055.

The Application does not discuss the costs or the source of funding for managing the storage of the spent fuel at the ARRR from the end of its commercial operations, projected by the Companies to be 2035,¹²⁹ to 2055, when it is projected that the DOE will take possession of the fuel.¹³⁰ The Application only states that decommissioning will be accomplished by "Modified SAFSTOR" whereby the decommissioning contractor will perform the preliminary portion of the decommissioning to put the ARRR in a safe condition and then, eighteen months *after removal of the fuel*, will complete the decommissioning.¹³¹ Thus, the Application neither accounts for the costs nor the funds to cover the costs to maintain the ARRR in safe storage between the

¹²⁷ *Id.*; Exhibits NRC-027 (SE), at 14-15 and NRC-027(P) (SE), at 14-15.

¹²⁸ See Exhibits NRC-024 (RAI #3), at 4 and NRC-024(P) (RAI #3), at 4.

¹²⁹ Exhibits NRC-026 (RAI Response #3), at 6 and NRC-026(P) (RAI Response #3), at 3.

¹³⁰ See Exhibits NRC-008 (Application), at 10 and NRC-008(P) (Application), at 60.

¹³¹ See Exhibits NRC-008 (Application), at 81, 93, 102 and NRC-008(P) (Application), at 81, 93, 102.

contractor's conduct of the preliminary decommissioning tasks and its conduct of the remaining decommissioning tasks once the spent fuel is removed.

Recognizing this gap in funding, the Staff requested that the Companies provide a schedule of annual expenses including safe storage costs.¹³² In response, the Companies only stated that the decommissioning cost estimate did not include safe storage.¹³³ Subsequently, the Staff requested that the Companies provide "itemized estimated annual fuel storage costs, including but not limited to: health physicists, security, overhead cost, insurance, etc, until 2055 and information to demonstrate Nuclear Labyrinth's financial ability to provide funding for fuel storage."¹³⁴ The Companies responded that the annual costs associated with fuel storage are \$100,000 and that these funds will be collected through a fuel storage fee assessed against revenue from ARRR services such that funds for 20 years of storage costs will be available to cover the time period between reactor closure in 2035 and fuel acceptance by the DOE in 2055.¹³⁵

The Companies' identification of a percentage of revenue generated between restarting commercial operations at the ARRR and operating until 2035 is insufficient because it is based on the assumption that the ARRR will operate until 2035 and the uncertainties surrounding this assumption are significantly greater than those that usually cloud business outlooks. Specifically, since the Companies cannot demonstrate that they will have sufficient funds to cover the operation costs of the ARRR for even the first five years of operation, they *a fortiori* cannot demonstrate the ability to cover the operation costs until 2035. Given that the Companies have only provided committed sources of funds to cover the ARRR's year one operation costs, have not provided enough information to demonstrate that projected revenue

¹³² Exhibits NRC-021 (RAI #2), at 5 and NRC-021(P) (RAI #2), at 5.

¹³³ Exhibits NRC-022 (RAI Response #2), at 11 and NRC-022(P) (RAI Response #2), at 7.

¹³⁴ Exhibits NRC-024 (RAI #3), at 4 and NRC-024(P) (RAI #3), at 4.

¹³⁵ Exhibits NRC-026 (RAI Response #3), at 6 and NRC-026(P) (RAI Response #3), at 3.

will be greater than estimated costs for years two through five, and have not demonstrated that they have seriously considered the fuel costs that may contribute to the expense of operating the ARRR, the Companies' mere assertion that the ARRR will operate until 2035 in order to accumulate a sufficient spent fuel management fund is not a sufficient showing of financial qualifications.

Even the Companies recognize the uncertainty of their financial projections and seek to allay this uncertainty by stating that, "[i]f Aerotest is unable to obtain customers sufficient to offset operational costs and it exhausts its committed operational funds, then Aerotest would commence decommissioning unless it is able to obtain further funds to maintain its operational status."¹³⁶ However, this position that the implausibility of their revenue projections is of no practical consequence is contrary to the obligations that Nuclear Labyrinth and its subsidiary, Aerotest, would assume if the indirect license transfer were to be granted. Specifically, in their Application, the Companies recognize that, once the license is transferred, Aerotest and Nuclear Labyrinth will assume all liabilities including those regarding the management and storage of the ARRR's nuclear fuel.¹³⁷ They further recognize that the only way that their business plan can account for their spent fuel storage liability is if the ARRR operates until 2035 and collects a fuel storage fee as part of these operations.¹³⁸

These two positions taken by the Companies, namely: (1) that they could shut down the ARRR at any time; and (2) that they must operate the ARRR until 2035, are irreconcilably contradictory. For instance, if the Companies were unable to obtain sufficient revenue and exhausted their committed operational funds at the end of year one, then simply decommissioning would not address all of their liabilities because the Companies would still be liable for spent fuel storage from the date of shutdown to 2035, in addition to the period of time

¹³⁶ Exhibits NRC-022 (RAI Response #2), at 7-8 and NRC-022(P) (RAI Response #2), at 4.

¹³⁷ Exhibits NRC-008 (Application), at 6 and NRC-008(P) (Application), at 6.

¹³⁸ Exhibits NRC-026 (RAI Response #3), at 6 and NRC-026(P) (RAI Response #3), at 3.

from 2035 to 2055, for a total of approximately 40 years at a cost of approximately \$100,000 per year. As a result of such a premature shutdown, the Companies would not have had the opportunity accumulate sufficient funds to cover these costs. Therefore, the Companies could potentially experience a large liability and no funds with which to pay it. Based on these considerations, the Staff reasonably concluded that it could not determine from the documentation provided by the Companies that there will be sufficient funds to cover the annual cost of fuel storage until the DOE accepts the fuel.¹³⁹

CONCLUSION

For the foregoing reasons, the Staff's denial of the proposed indirect license transfer should be upheld.

Respectfully submitted,

/Signed (electronically) by/

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Executed in Accord with 10 CFR 2.304(d)

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¹³⁹ See Exhibits NRC-027 (SE), at 11 and NRC-027(P) (SE), at 11.

~~PROPRIETARY INFORMATION~~

- 29 -

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Dated at Rockville, Maryland
this 13th day of June, 2014

~~PROPRIETARY INFORMATION~~

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
AEROTEST OPERATIONS, INC.)	Docket No. 50-228-LT
)	
(Aerotest Radiography and Research)	
Reactor))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "NRC STAFF INITIAL WRITTEN STATEMENT OF POSITION REGARDING DENIAL OF THE INDIRECT LICENSE TRANSFER OF THE AEROTEST RADIOGRAPHY AND RESEARCH REACTOR" (Exhibit NRC-001), NRC Staff Exhibits NRC-002 through NRC-044, and the NRC Staff exhibit list have been served upon the Electronic Information Exchange, in the above-captioned proceedings, this 13th day of June, 2014.

/Signed (electronically) by/

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Dated at Rockville, Maryland
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