

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO INDIRECT LICENSE TRANSFER AND CONFORMING AMENDMENT  
TO FACILITY OPERATING LICENSE NO. R-98  
FOR AEROTEST RADIOGRAPHY AND RESEARCH REACTOR  
DUE TO PROPOSED ACQUISITION OF AEROTEST OPERATIONS, INC.  
BY NUCLEAR LABYRINTH, LLC  
DOCKET NO. 50-228

Enclosure 4 contains proprietary information which is in **BOLD**. Enclosure 3 is a public version in which proprietary information is redacted and denoted in [  ].

1.0 INTRODUCTION

On May 30, 2012, Aerotest Operations, Inc. (Aerotest) and Nuclear Labyrinth, LLC (Nuclear Labyrinth), hereafter jointly referred to as the applicants, submitted an application for U.S. Nuclear Regulatory Commission (NRC) consent to the indirect transfer of Facility Operating License No. R-98 for the 250-kilowatt thermal power (kWt) Aerotest Radiography and Research Reactor (ARRR) to Nuclear Labyrinth (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12180A384 and ML12152A233). On July 5, 2012, the NRC staff requested additional information from the applicants in order to complete its acceptance review of the application (ADAMS Accession Nos. ML121740317 and ML121740343). The applicants responded on July 19, 2012 (ADAMS Accession No. ML122021201). On September 14, 2012, the NRC staff issued a request for additional information (RAI) relating to financial qualifications (ADAMS Accession Nos. ML12242A460 and ML12242A479). The applicants responded on October 15, 2012 (ADAMS Accession No. ML12291A508); however, based on the NRC staff's review of the applicants' response, the NRC staff determined that questions remained regarding the applicants' compliance with the financial qualifications requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.80, "Transfer of licenses," and 10 CFR 50.33, "Contents of applications; general information," for license transfer approval. Therefore, on December 10, 2012, the NRC staff issued another RAI (ADAMS Accession Nos. ML12339A181 and ML12339A189), which was discussed with the applicants in a public meeting on December 19, 2012. A summary of this public meeting is available (ADAMS Accession No. ML13018A003). The purpose of the public meeting was to ensure that the applicants understood the financial qualifications requirements in 10 CFR 50.80 and 10 CFR 50.33. The applicants responded to the December 10, 2012, RAI on January 10, 2013 (ADAMS Accession No. ML13015A395). The documents submitted by the applicants listed above constitute the original application.

After considering the original application, the NRC staff denied it on July 24, 2013 (ADAMS Accession Nos. ML13120A598 and ML13129A001). The reason for the denial was that the applicants had failed to satisfy the Commission's license transfer requirements pursuant to Section 184 of the Atomic Energy Act of 1954, as amended (AEA), and 10 CFR 50.80. Specifically, the NRC staff concluded that neither Aerotest nor Nuclear Labyrinth had demonstrated possession or reasonable assurance of obtaining the funds necessary to cover estimated operations costs for the period of the license, and to cover the annual cost of fuel storage until the U.S. Department of Energy (DOE) accepts the fuel once the facility permanently ceases operations.

On August 13, 2013, the applicants jointly demanded a hearing on the denial of the application (ADAMS Accession No. ML13226A407). The Commission granted the hearing request on April 10, 2014 (ADAMS Accession No. ML14100A094), and assigned a presiding officer to the matter. The presiding officer held an evidentiary hearing on August 12, 2014, at which the applicants presented new and relevant information which had not previously been provided to the NRC staff. On September 5, 2014, the presiding officer certified a record of the proceeding to the Commission, which included a listing of all of the information considered at the hearing, including new information provided by the applicants (ADAMS Accession No. ML14248A614). After reviewing the record, in Memorandum and Order CLI-15-26 dated December 23, 2015, the Commission remanded the license transfer application to the NRC staff, without prejudice, for further consideration of all of the evidence submitted by the applicants at the evidentiary hearing (ADAMS Accession No. ML15357A201). The Commission also directed the NRC staff to provide the applicants with an opportunity to submit any additional relevant information, should they wish to do so.

Pursuant to CLI-15-26, the NRC staff sent a letter to the applicants, dated January 21, 2016 (ADAMS Accession No. ML16020A546), giving them an opportunity to supplement their license transfer application and submit any additional relevant information. The applicants submitted supplements to their application on April 21, 2016, and June 16, 2016 (ADAMS Accession Nos. ML16117A259 and ML16176A221, respectively). On July 20, 2016, the NRC staff issued an RAI related to Nuclear Labyrinth's technical qualifications and the conforming technical specification changes requested in conjunction with the proposed indirect license transfer (ADAMS Accession No. ML16182A397). The applicants responded to this RAI on August 22, 2016 (ADAMS Accession No. ML16245A230). The applicants provided additional supplemental information regarding conforming technical specification changes and financial protection on October 10, 2016 (ADAMS Accession No. ML16294A250). By electronic mail dated October 19, 2016 (ADAMS Accession No. ML16294A549), the applicants provided clarification regarding the proposed technical specification changes. By electronic mail dated November 2, 2016 (ADAMS Accession No. ML16312A345), the applicants provided further clarification regarding the proposed technical specification changes, and also provided clarification regarding the need for continued withholding from public disclosure, in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding," of certain financial information previously provided to the NRC and withheld from public disclosure. The applicants contend that this supplemental information, combined with the original application and the hearing record, is sufficient for the NRC staff to find that the proposed indirect transfer of control of the ARRR to Nuclear Labyrinth is acceptable.

The following safety evaluation (SE) provides the NRC staff's determination regarding the applicants' license transfer application, as supplemented, giving full consideration to the additional information submitted by the applicants at and after the evidentiary hearing.

The application, as supplemented, and this SE contain proprietary information, which is withheld from public disclosure in accordance with 10 CFR 2.390. Publicly-available (i.e., non-proprietary) portions of the application may be accessed in the ADAMS public document collection.

## 2.0 BACKGROUND

Aerotest is the holder of the Facility Operating License No. R-98 for the ARRR under the provisions of 10 CFR 50.21(c) for a production or utilization facility, which is useful in the conduct of research and development activities. Aerotest is wholly owned by OEA Aerospace, Inc., which is wholly owned by OEA, Inc. OEA, Inc. was purchased by Autoliv ASP, Inc. (Autoliv) on May 9, 2000. Autoliv is wholly owned by Autoliv, Inc. Autoliv, Inc. is incorporated in Delaware, with headquarters in Stockholm, Sweden. The majority of the Board of Directors and the Executive Officers of Autoliv, Inc. are non-U.S. citizens. The majority of Autoliv's outstanding stock is owned by non-U.S. citizens. As a result of the May 9, 2000, purchase, Autoliv, Inc. became the ultimate indirect owner of Aerotest.

Autoliv and Nuclear Labyrinth have agreed to consummate a transaction whereby Nuclear Labyrinth will acquire ownership of the stock and business of Aerotest from Autoliv. Stock in the parent holding companies OEA Aerospace, Inc. and OEA, Inc. will not be transferred.

Nuclear Labyrinth, with corporate offices located in Sandy, Utah, is a privately held limited liability company incorporated in the State of Utah. Nuclear Labyrinth is a newly-formed entity organized for the primary purpose of purchasing the shares of Aerotest. The Chief Executive Officer (CEO) and sole owner of Nuclear Labyrinth is Dr. David M. Slaughter. As a result of the proposed transaction, Aerotest will become a wholly-owned subsidiary of Nuclear Labyrinth. Aerotest will continue in its current legal form and will remain as the owner and licensed operator of the ARRR. No physical changes to the ARRR facility or operational changes are proposed in the application. Except for the installation of Dr. Slaughter as President of Aerotest, no management or organizational changes are being proposed, and employment within the company will be offered to the 5 current employees of Aerotest.

The ARRR has been shut down since October 2010. Of the 116 fuel elements owned and possessed by Aerotest, there are approximately 23 aluminum-clad fuel elements with cracked cladding, which were placed in canisters (except for 2 that were kept uncanistered to allow for continued monitoring and observation) and stored at the bottom of the reactor pool. There are an additional approximately 9 aluminum-clad fuel elements that are swollen and unusable. The remaining approximately 84 fuel elements include 39 stainless-steel-clad fuel elements (12 of which are new and unused). During the evidentiary hearing, Dr. Slaughter testified and provided supporting evidence that the ARRR can be operated at licensed power with a core design consisting of 36 stainless-steel-clad elements and 28 aluminum-clad elements, with approximately 20 elements in reserve.

The application provides that at the closing of the transaction (the acquisition by Nuclear Labyrinth of all of the issued and outstanding shares of stock of Aerotest), Autoliv or its subsidiaries will make the following transfers of funds:

- A. The sum of \$943,225 to an account designated in writing by Nuclear Labyrinth for the benefit of Aerotest intended to fund the operations and maintenance costs of the ARRR for approximately 12 months;
- B. The sum of \$3,376,030 to a decommissioning trust fund for the ARRR;
- C. The sum of \$742,410 (plus the interest on this sum to be calculated from October 1, 2010, to the date of acquisition based on the 13-week Treasury bill rate) and the sum of \$625,000 to a segregated account in the ARRR decommissioning trust fund for the disposal of the ARRR's nuclear fuel elements pursuant to DOE Contract DE-CR01-83NE44484, as amended, and to fund the acquisition of fuel element storage casks, respectively;
- D. The sum of \$1,500,000 to a financial protection standby trust for the ARRR; and
- E. The sum of \$1,125,000 to a segregated account in the ARRR decommissioning trust fund to fund the management of the ARRR's nuclear fuel elements prior to their disposal by DOE.

### 3.0 REGULATORY EVALUATION

The applicants' request for approval of the indirect transfer of the license for the ARRR as discussed in this SE is made under 10 CFR 50.80, which states, in part, that:

No license for a production or utilization facility ... or any right thereunder, shall be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license to any person, unless the Commission gives its consent in writing.

Pursuant to 10 CFR 50.80(b), an application for the transfer of a license shall include as much of the information described in 10 CFR 50.33, and 10 CFR 50.34, "Contents of applications; technical information," 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. The regulation in 10 CFR 50.80(c) states, in part, that:

... [T]he Commission will approve an application for the transfer of a license, if the Commission determines: (1) That the proposed transferee is qualified to be the holder of the license; and (2) That transfer of the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

With respect to the financial qualifications of the proposed transferee, 10 CFR 50.33(f) provides, in part, that each application shall state:

Except for an electric utility applicant for a license to operate a utilization facility of the type described in § 50.21(b) or § 50.22, information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the permit or license is sought.

The required information includes information that demonstrates that the proposed transferee possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license through the submission of estimates for total annual operating costs for each of the first 5 years of operation and the sources of funds to cover these costs. A newly-formed entity organized for the primary purpose of operating a facility, such as Nuclear Labyrinth, must include additional information considered necessary by the Commission. The Commission may also request additional information regarding the proposed transferee's ability to continue the conduct of the activities authorized by the license and to decommission the facility. Finally, pursuant to 10 CFR 50.33(k)(1), and 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," the proposed transferee must indicate how reasonable assurance will be provided that funds will be available to decommission the facility.

NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors," provides guidelines for the NRC staff determination of whether the proposed transferee is qualified to own, operate, and decommission a non-power reactor. The NRC staff's review process includes confirming that the applicant provided an estimate of the first 5 years of operating costs and has given a reliable basis for the estimate, such as past operating costs or costs of operating similar facilities. The 5-year estimate should be sufficiently detailed to show categories of spending, such as salaries, benefits and overhead, equipment, and supplies. The 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. The applicant should 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. If the source of funding is not committed, the applicant should discuss the probability of acquiring the funds and the potential source of the funds. The applicant should also discuss the possibility of operating the facility without this funding.

As for the level of assurance that the Commission requires for an applicant's ability to meet its financial obligations, the Commission has stated in CLI-99-06 (ADAMS Accession No. ML16195A533) that its standard is

... [L]ess 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.

It is not within the NRC's purview to manage the finances of its licensees; thus the Commission does not require absolute certainty in the financial area and recognizes that speculation of some sort is unavoidable when the issue at stake concerns predictive judgments about an applicant's future financial capabilities. However, the applicant still bears the burden to show, by a preponderance of the evidence, that it meets the Commission's financial qualifications rule. This means that the applicant's cost-and-revenue projections must not rely on assumptions seriously at odds with governing realities and must not involve uncertainties significantly greater than those that usually cloud business outlooks.

With respect to the issue of foreign ownership, control, or domination, Sections 103d and 104d of the AEA provide, in relevant part, that no license may be issued to the following:

[A]ny corporation or other entity if the Commission knows or has reason to believe it is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The NRC's regulation in 10 CFR 50.38, "Ineligibility of certain applicants," is the regulatory provision that implements this statute. The NRC staff evaluates license transfer applications in a manner that is consistent with the guidance provided in the NRC Standard Review Plan (SRP) on Foreign Ownership, Control, or Domination, published in the *Federal Register* on September 28, 1999 (hereafter referred to as the "SRP on FOCD"), to determine whether the proposed transferee is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government (64 FR 52355).

The NRC staff also reviews information that pertains to Price-Anderson indemnity agreement requirements, the nuclear property damage insurance requirements under 10 CFR 50.54(w), and nuclear energy liability insurance required under Section 170 of the AEA and 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," as part of its evaluation of a license transfer request.

The proposed transaction described in the application constitutes an indirect transfer of the ARRR license from Autoliv, Inc. to Nuclear Labyrinth requiring prior NRC approval. For indirect transfers of a license, the NRC must find that the transaction will not affect the qualifications of the holder of the license, in this case Aerotest. The purpose of the evaluation is to ensure that the proposed corporate management is involved with, informed of, and dedicated to the safe maintenance and operation of the facility and that adequate technical and financial resources will be provided to support these activities.

#### 4.0 FINANCIAL QUALIFICATIONS

Consistent with 10 CFR 50.33(f) and the Commission's interpretation of this regulation, the NRC staff reviewed the applicants' financial projections for the reasonableness of the estimated operating costs and sources of funds to cover these costs, as well as the sensitivity of plant revenue projections, to determine whether Aerotest, as owned by Nuclear Labyrinth, possesses or has reasonable assurance of obtaining the funds necessary to cover estimated operation costs for the period of the license.

#### 4.1 Aerotest

The ARRR is licensed under AEA Section 104c and 10 CFR 50.21(c) as a utilization facility useful in the conduct of research and development activities. As such, it is not an electric utility as defined in 10 CFR 50.2, "Definitions," and therefore, Aerotest must meet the financial qualification requirements of 10 CFR 50.33(f).

In order to satisfy these requirements, the applicants provided projected income information for Aerotest in their January 10, 2013, RAI response (ADAMS Accession No. ML13015A395), and further explained the bases for this information during the hearing. The information is derived from historical information that is sufficiently detailed to show categories of spending, such as salaries, benefits and overhead, equipment, and supplies as well as the costs of the individual services planned to be provided by Aerotest. The following is a summary of this projected income information.

AEROTEST OPERATIONS, INC.  
Summary of  
PROJECTED INCOME STATEMENT  
(Whole Dollars)

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
TOTAL REVENUE	\$943,225	[ ]	[ ]	[ ]	[ ]
Total Operating Expense	[ ]	[ ]	[ ]	[ ]	[ ]
Operating Income	[ ]	[ ]	[ ]	[ ]	[ ]
Other Income & Taxes	[ ]	[ ]	[ ]	[ ]	[ ]
NET INCOME	[ ]	[ ]	[ ]	[ ]	[ ]

Taking into consideration the new information provided by the applicants at the hearing, the NRC staff finds that the applicants have given a reliable basis for this income estimate, as explained below.

According to the applicants, the first year income projection is based on the assumption that the ARRR will not be used to provide commercial services during that year. The applicants' estimated costs are based on the actual historical operating costs for the ARRR [

], during the entirety of which time the ARRR was in a shutdown condition. This is a reasonable assumption because the first year is projected to involve only the restart of the ARRR and the restart will not require any additional material or personnel resources than those used at the ARRR in a shutdown condition. The source of funding for these costs (\$943,225) will be monies transferred from Autoliv to Nuclear Labyrinth at the close of the proposed transaction.

For years two through five, the income projection is based on Aerotest providing four services: (1) neutron interrogation and radiography; (2) nuclear science and engineering research; (3) training; and (4) neutron science/engineering research without the use of the ARRR.

Regarding neutron radiography, the applicants estimated the cost-per-radiograph at the ARRR based on a detailed evaluation of the Aerotest processes and the relative associated costs. The applicants estimated the cost to include [

]. The applicants [ ] fees to cover fuel replacement and interim spent fuel storage as well as a cost increase of 3 percent per year. The applicants also included a built-in profit of [

]. The projected income was calculated based on an annual production of [ ] neutron radiographs starting in year two, which is significantly less than the average annual neutron radiograph production of [ ] at the ARRR over the 5-year period from 2005 to 2009.

Regarding nuclear science and engineering research, the applicants projected income based on [

]. The applicants projected selling [ ] of research time starting in year two with a growth rate of [ ] until the completion of year five. The applicants estimated the costs associated with this research time as [ ]

fees to cover fuel replacement and interim spent fuel storage as well as a built-in [ ]. The costs for salaries, materials, and services was projected to increase by [ ] per year.

Regarding training, the applicants projected income based on [

]. The cost for this training includes [ ] as well as a built-in [ ]. The costs for salaries, materials, and services was projected to increase by about 3 percent per year. The costs [ ] fees to cover fuel replacement and interim spent fuel storage.

Regarding research without the use of the ARRR, the applicants projected income based on Dr. Slaughter's actual work load. The applicants projected [ ] of research time starting in year two, with a growth rate of [ ] until the completion of year five. The costs include a built-in [ ], and a [

] increase per year reflecting increases in salaries, materials, and services. The costs [ ] fees to cover fuel replacement and interim spent fuel storage.

With respect to Aerotest and its ability to obtain these projected funds, the applicants projected that Aerotest would attract its prior customers as well as new customers for various reasons.

First, according to an analysis by Dr. Slaughter, Aerotest's price per radiograph would be approximately [ ] than the current market price and [ ]

]. Second, Aerotest would provide neutron interrogation of [ ]

]. Third, Dr. Slaughter, in

his expert opinion, predicts that the market for Aerotest's neutron interrogation services is increasing. Additionally, the research income projections were based on Dr. Slaughter's current research activities and his expert knowledge of the field. Based on these circumstances, the applicants conclude that the probability of obtaining the identified sources of funds is high (i.e., that the income projection is conservative). However, since these identified sources of funds are not committed, the applicants also discussed the possibility of operating the facility without these funds. Specifically, the applicants stated that the operations of the ARRR are fully funded for a year and that the restart of the ARRR will likely take less than a year. Therefore, the applicants stated that Aerotest will likely commence providing services and generating income before using all of these funds. The remaining funds will then be available as excess to cover operation costs should the projected income not be fully realized. Additionally, the applicants point to the fact that at the closing of the transaction, the ARRR will have a fully funded decommissioning trust fund, full funding for the costs related to the DOE's transportation and disposal of the ARRR's fuel elements, and \$1,125,000 for spent fuel management prior to the fuel's disposal by the DOE, which will allow Aerotest to satisfy its financial obligations should the projected income not be realized.

Another consideration is that obtaining the identified sources of funds necessitates the operation of the ARRR, but the ARRR has experienced damage to some of its fuel elements and has been shut down since October 2010. The applicants stated that despite this history, the ARRR would be operable at the close of the proposed transaction. This was based on Dr. Slaughter's performance of a detailed fuel loading and condition evaluation to ensure that there was sufficient fuel inventory to operate the ARRR at its licensed power level of 250 kWt and to conduct sustained operation at a power level of 160 kWt for the license period. Dr. Slaughter evaluated the uranium loading, cladding, burn-up, age, and physical condition of each of the fuel elements at the ARRR to determine which elements would be available for future use. Using the available fuel elements, Dr. Slaughter developed a proposed core with approximately 20 fuel elements in reserve. Dr. Slaughter used the MCNP5 code with changes specific to the ARRR to model the proposed core and concluded that the proposed core was operable within the current safety limits in the ARRR license.

Based on the above, the NRC staff finds that the application stated information sufficient to demonstrate the financial qualification of Aerotest. Pursuant to 10 CFR 50.33(f), the application included estimates for total annual operating costs for each of the first 5 years and indicated the sources of funds to cover these costs. Specifically, the application estimated the costs to restart the ARRR and identified that the source of funds to cover these costs is the one-year's worth of operating and maintenance funds to be transferred from Autoliv to Aerotest at the close of the proposed transaction. Pursuant to NUREG-1537, the application provided as a reliable basis for this cost estimate the past costs of operating the ARRR in a shutdown condition. The application also estimated the costs of the services to be provided by the ARRR and the revenue that would be generated from these services. Pursuant to NUREG-1537, the

application provided as a reliable basis for this cost estimate the history of neutron radiograph production at the ARRR, the history of training at the ARRR, and the identification of ongoing research activities that are within the areas for which the ARRR has previously been used, as well as the expertise of Dr. Slaughter, and thus represent potential sources of funds for Aerotest. The application acknowledged that these sources of funds were not committed, but provided reasons for the applicants' position that the probability of obtaining these funds was high. The application also acknowledged that obtaining these funds was dependent on the operation of the ARRR, and therefore, provided information supporting the position that the ARRR is operable; however, the NRC staff notes that it did not independently confirm the applicants' statements about the operability of the reactor. Finally, the application discussed the possibility of operating the facility without the identified sources of funds by discussing the excess funds that may be available to Aerotest following the restart of the ARRR as well as the funds available to Aerotest to decommission the ARRR. The NRC staff finds that the application's cost-and-revenue projections are based on plausible assumptions and forecasts and do not rely on assumptions seriously at odds with the governing realities and do not involve uncertainties significantly greater than those that usually cloud business outlooks. Therefore, the NRC staff concludes that Aerotest satisfies 10 CFR 50.33(f).

#### 4.2 Nuclear Labyrinth

Nuclear Labyrinth is a newly formed entity organized for the primary purpose of purchasing the shares of Aerotest. According to the application, Nuclear Labyrinth, through its sole owner Dr. Slaughter, provides education, training, and research in nuclear science and engineering.

The Commission's regulation in 10 CFR 50.33(f)(4) states that applications involving newly formed entities must also include information showing:

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

Since Nuclear Labyrinth is a newly formed entity, it does not have historical financial statements to submit to the NRC to demonstrate its financial ability to meet any contractual obligation to Aerotest which it has incurred or proposes to incur. Nuclear Labyrinth submitted a balance sheet reflecting its assets, liabilities, and shareholders' equity. The balance sheet for Nuclear Labyrinth shows current assets of [ ], which consist of [ ] and \$300,000 based on a letter from a Federally insured bank stating that the bank is prepared to issue a cash secured irrevocable standby letter of credit in the amount of \$300,000.

The NRC staff reviewed the information in the application regarding Aerotest's financial qualifications and determined that a support agreement between Nuclear Labyrinth and Aerotest was an essential factor in assessing Aerotest's financial qualifications following the proposed indirect license transfer. A public meeting was held with Nuclear Labyrinth and Aerotest on December 19, 2012, and the NRC staff requested an agreement between Aerotest and Nuclear Labyrinth to cover operations and maintenance costs for a period of 6 months. Thereafter, the applicants submitted a Funding Agreement between Nuclear Labyrinth and Autoliv (ADAMS Accession No. ML13015A395). This agreement states that Autoliv will transfer the sum of \$943,225 to an account designated in writing by Nuclear Labyrinth for the benefit of Aerotest, intended to fund the operating and maintenance cost of the ARRR for approximately 12 months. The applicants stated that the restart of the ARRR will likely take less than 12 months, and that the remainder of the \$943,225 will be available to meet any additional contractual obligation of Nuclear Labyrinth to Aerotest. Additionally, the Funding Agreement provides that, at the closing of the transaction, the ARRR will have a fully funded decommissioning trust fund, full funding for the costs related to the DOE's transportation and disposal of the ARRR's fuel elements, and \$1,125,000 for spent fuel management prior to the fuel's disposal by the DOE. Finally, the application stated that Nuclear Labyrinth will maintain a \$300,000 letter of credit from a Federally insured bank to be used in the event that future updates to the decommissioning cost estimate or decommissioning trust fund reveal a shortfall in the fund balance. Therefore, the NRC staff finds that the applicants have provided the information required by 10 CFR 50.33(f)(4).

#### 4.3 Conclusion on Financial Qualifications

Giving full consideration to the additional information submitted by the applicants at and after the evidentiary hearing, the NRC staff reviewed the applicants' projected financial statements (i.e., the projected net income statement for Aerotest and the projected balance sheet for Nuclear Labyrinth) and evaluated the financial condition of Nuclear Labyrinth, which will be the ultimate owner of Aerotest following the proposed indirect license transfer, as it relates to its obligations to Aerotest. As provided in CLI-99-06, the NRC will accept demonstrations of financial qualification that are based on plausible assumptions and forecasts, even though the possibility is not insignificant that things will turn out less favorably than expected. Based on the foregoing review, the NRC staff finds that Aerotest and Nuclear Labyrinth have provided information based on plausible assumptions and forecasts that meet the requirements under 10 CFR 50.33(f) and therefore concludes that the application satisfies the financial qualifications requirement.

#### 5.0 DECOMMISSIONING FUNDING

The regulation at 10 CFR 50.33(k) states that, for an applicant for an operating license for a production or utilization facility, the applicant must provide information in the form of a report, as described in 10 CFR 50.75, indicating how reasonable assurance will be provided that funds will be available to decommission the facility. The regulation in 10 CFR 50.75(d) states that, for non-power reactor applicants, the report must contain a cost estimate for decommissioning the facility, indicate which method will be used to provide funds for decommissioning, and provide a description of the means of adjusting the cost estimate and associated funding level periodically over the life of the facility. Additionally, according to 10 CFR 50.33(f)(5):

The Commission may request an established entity or newly-formed entity to submit additional or more detailed information respecting its financial arrangements and status of funds if the Commission considers this information appropriate. This may include information regarding a licensee's ability to continue the conduct of the activities authorized by the license and to decommission the facility.

The application included a decommissioning plan for the ARRR developed by EnergySolutions. The decommissioning alternative selected for the ARRR was a modified SAFSTOR, which involves the removal of the facility from service, establishment of a possession-only status, and entry into a safe storage period, followed by fuel removal and final decontamination that will reduce the residual radioactivity to levels that allow unrestricted use of all facility areas, permitting termination of the reactor license and beneficial reuse of the property. The plan included an estimated decommissioning cost of \$3,285,800 in 2011 dollars. The decommissioning cost estimate was determined by comparing the ARRR facility size and complexity against cost estimates for other non-power reactor facilities. The decommissioning cost estimate summarized costs by labor, waste disposal, and other costs (e.g., energy, equipment, and supplies, etc.), and included a 25 percent contingency factor. The NRC staff notes that the contingency factor is required to address unforeseeable elements of cost within the defined scope. Subsequently, EnergySolutions prepared a revised, updated estimate to decommission the ARRR facility totaling \$3,146,060 in 2015 dollars.

The application also identified as part of the cost estimate for decommissioning the facility, the costs for spent fuel management, transportation, and disposal, as summarized below:

Disposal of spent nuclear fuel by the DOE (cask use, transportation, and disposal)	\$742,410 (plus interest calculated from October 1, 2010)
Additional cost of storage casks approved for transportation of damaged nuclear fuel elements	\$625,000
Total annual cost for fuel storage prior to acceptance by the DOE:	\$100,000
FTE (Labor)	\$30,000
Maintenance and supply	\$15,000
Training	\$5,000
NRC fees	\$50,000

As stated in the Funding Agreement between Nuclear Labyrinth and Autoliv, at the closing of the transaction of Nuclear Labyrinth's purchase of all the issued and outstanding shares of the

stock of Aerotest, Autoliv will transfer the sum of \$3,376,030 to a decommissioning trust that conforms to the guidance provided in NRC Regulatory Guide 1.159. Also, at the closing of the transaction, Autoliv will transfer the sum of \$742,410 (plus the interest on this sum to be calculated from October 1, 2010 to the date of acquisition based on the 13-week Treasury bill rate) and the sum of \$625,000 to a segregated account in the ARRR decommissioning trust fund for the disposal and transportation of the ARRR's nuclear fuel elements. This is consistent with the prepayment method of 10 CFR 50.75(e)(1)(i), which states, in relevant part, that:

Prepayment is the deposit made preceding ... the transfer of a license under [10 CFR] 50.80 into an account segregated from licensee assets and outside the administrative control of the licensee and its subsidiaries or affiliates of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected.

Since the amount to be transferred upon the consummation of the transaction for decommissioning (\$3,376,030) is greater than the decommissioning cost estimate (\$3,146,060) and since the amount to be transferred upon the consummation of the transaction for fuel disposal and transportation is equal to the cost estimates, the NRC staff finds that the amount of funds would be sufficient to pay these costs at the time of permanent termination of operations. Therefore, based on the above discussion, the NRC staff finds that the prepayment option of 10 CFR 50.75(e)(1)(i) is satisfied.

The application also stated that the sum of \$1,125,000 will be transferred to a segregated account in the ARRR decommissioning trust fund to fund the management of the ARRR's nuclear fuel elements prior to their disposal by the DOE. This account will be supplemented by the collection of an interim spent fuel storage fee [ ] services provided by the ARRR. The NRC staff finds that this also meets the prepayment and external sinking fund requirements of 10 CFR 50.75(e)(1)(i) and (ii).

The application stated that the means of adjusting the decommissioning cost estimates and associated funding levels periodically over the life of the facility would be by periodic updates of decommissioning cost estimates and by maintaining a \$300,000 letter of credit from a Federally insured bank to be used in the event that future updates to the cost estimates or funding levels reveal a shortfall in the fund balance, consistent with 10 CFR 50.75(e)(1)(iii)(A). Nuclear Labyrinth has obtained commitment from Centennial Bank indicating that it will provide Nuclear Labyrinth with such a letter of credit. The applicants provided a plan to review and adjust, as necessary, the decommissioning funding levels on a biannual basis, based on updated decommissioning cost estimates by outside experts.

The application stated that the letter of credit would be executed within 30 days of the license transfer. However, as a condition to the transfer, the NRC requires the letter of credit to be executed at the time of, or before, the transfer.

## 5.1 Conclusion on Decommissioning Funding

With the inclusion of the condition discussed above, the NRC staff concludes that the application satisfies 10 CFR 50.33(k) and 10 CFR 50.75 because it provided a reasonable cost estimate for decommissioning the ARRR, indicated the method to provide the funds for the decommissioning, and provided a description of adjusting the decommissioning cost estimate and funding level periodically, and thus has provided reasonable assurance that funds will be available to decommission the ARRR.

## 6.0 TECHNICAL QUALIFICATIONS

According to the application, as supplemented, the management team of the ARRR would be expected to remain the same following the completion of the indirect license transfer, except for the installation of Dr. David Slaughter as president of Aerotest. No changes in ARRR organization would be expected, and Nuclear Labyrinth would offer employment to the 5 current employees of Aerotest. Therefore, since the proposed indirect transfer would not result in any significant change to the management and technical personnel responsible for licensed activities involving reactor operation and safety at the ARRR, the NRC staff concludes that Aerotest would be technically qualified to hold the subject license following the indirect transfer to Nuclear Labyrinth.

## 7.0 FOREIGN OWNERSHIP, CONTROL, OR DOMINATION

Sections 103d and 104d of the AEA, as implemented by 10 CFR 50.38, prohibit the issuance of a license to any entity which the Commission knows or has reason to believe is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

As cited above, the NRC staff evaluates license transfer applications in a manner that is consistent with the guidance provided in the SRP on FOCD to determine whether the proposed transferee is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government.

The application states that following the proposed indirect license transfer, Aerotest, the licensee, will be wholly owned by a new parent company, Nuclear Labyrinth. Nuclear Labyrinth is incorporated in the State of Utah, headquartered in Sandy, Utah, and managed by its CEO and sole owner, Dr. Slaughter, who is a U.S. citizen. Since its sole owner is a U.S. citizen, Nuclear Labyrinth is not foreign owned. The application provided the names and addresses of the members of Aerotest's board of directors and its principal officers and all are U.S. citizens; therefore, Aerotest is not foreign owned, controlled, or dominated. Additionally, although Autoliv, Inc., which is a foreign entity, or its subsidiaries, will be contributing a significant amount of funds to Nuclear Labyrinth and Aerotest as part of the Funding Agreement, the NRC has no reason to believe that Nuclear Labyrinth or Aerotest will be controlled or dominated by Autoliv, Inc. as a result of the Funding Agreement. This is because, according to the Funding Agreement, the transfer of the funds will occur at the closing of the proposed transaction and Autoliv, Inc. does not retain any control over the funds after their transfer. Further, in order to ensure that Autoliv, Inc. will not exercise control or domination over Nuclear Labyrinth or Aerotest, the transfer is conditioned such that written notice must be given to the NRC of any changes to the Funding Agreement.

## 8.0 NUCLEAR INSURANCE AND INDEMNITY

Pursuant to the requirements of the Price-Anderson Act (Section 170 of the AEA) and the NRC's implementing regulations at 10 CFR Part 140, the current indemnity agreement will not need to be modified to reflect Aerotest's ownership status because no direct transfer or change in licensee results from the proposed indirect license transfer. Consistent with NRC practice, however, the NRC staff will continue to require Aerotest to provide evidence that it has obtained the appropriate amount of insurance in accordance with 10 CFR 140.11(a)(2). As a condition of the indirect license transfer, as part of the Funding Agreement between Autoliv, Inc., and Nuclear Labyrinth, Autoliv, Inc. will transfer the sum of \$1,500,000 to a financial protection standby trust for the ARRR.

## 9.0 CONFORMING AMENDMENT

The applicants requested approval of proposed conforming amendments to the license and the technical specifications. The changes to be made to the license and technical specifications are indicated in the conforming amendment in an enclosure to the letter transmitting this SE. The changes reflect the approved transfer action. No physical or operating changes to the facility or its adjacent lands are requested. The amendment involves no safety questions and is administrative in nature. Supplemental information received following the *Federal Register* notice of the application did not affect the applicability of the Commission's generic no significant hazards consideration determination for license amendments to reflect transfers, set forth in 10 CFR 2.1315. The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities at the licensed facility will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Accordingly, the amendment is acceptable. The amendment will be issued and made effective at the time the transfer is consummated.

## 10.0 ENVIRONMENTAL CONSIDERATION

The subject application is for approval of a transfer of the license issued by the NRC and approval of conforming amendments. Accordingly, the actions involved meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(21). Pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement needs to be prepared in connection with the approval of the application.

## 11.0 CONCLUSION

In view of the foregoing, the NRC staff finds that subject to the license transfer conditions discussed herein and listed below, Nuclear Labyrinth is qualified to be the indirect holder of the license for the ARRR, to the extent proposed in the application, and that the indirect transfer of the license is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission pursuant thereto.

License Transfer Conditions

1. A cash secured irrevocable standby letter of credit from a Federally insured bank in the amount of \$300,000 that conforms to the guidance provided in NRC Regulatory Guide 1.159 must be executed at the time of, or before, the transfer.
2. A decommissioning trust fund for the Aerotest Radiography and Research Reactor (ARRR) that conforms to the guidance provided in NRC Regulatory Guide 1.159 must be established at the time of, or before, the transfer.
3. Autoliv, Inc. shall enter into a Funding Agreement with Nuclear Labyrinth, LLC (Nuclear Labyrinth) at the time of, or before, the transfer. Written notice must be given to the NRC of any changes to the Funding Agreement.
4. The Funding Agreement between Autoliv, Inc. and Nuclear Labyrinth shall provide that upon the closing of the transaction of the acquisition by Nuclear Labyrinth of all of the issued and outstanding shares of stock of Aerotest Operations, Inc. (Aerotest) from the previous ultimate owner of this stock, Autoliv, Inc., or its subsidiaries, will make the following transfers of funds:
  - A. The sum of \$943,225 to an account designated in writing by Nuclear Labyrinth for the benefit of Aerotest intended to fund the operations and maintenance costs of the ARRR for approximately 12 months (Operating Funds). The Operating Funds may only be used as needed to fund the operations and maintenance costs of the ARRR and may not be used by Nuclear Labyrinth for any other purpose. Upon the written request of Aerotest, Nuclear Labyrinth shall distribute such funds from the Operating Funds as Aerotest determines to be necessary to operate and maintain the ARRR.
  - B. The sum of \$3,376,030 to the decommissioning trust fund for the ARRR.
  - C. The sum of \$742,410 (plus the interest on this sum to be calculated from October 1, 2010, to the date of acquisition based on the 13-week Treasury bill rate) and the sum of \$625,000 to a segregated account in the decommissioning trust fund for the ARRR (Nuclear Fuel Disposal Funds). The Nuclear Fuel Disposal Funds may only be used to fund the disposal of the ARRR's nuclear fuel elements pursuant to U.S. Department of Energy Contract DE-CR01-83NE44484, as amended, and to fund the acquisition of fuel element storage casks, respectively, and may not be used for any other purpose.
  - D. The sum of \$1,500,000 to the financial protection standby trust for the ARRR.
  - E. The sum of \$1,125,000 to a segregated account in the decommissioning trust fund for the ARRR (Spent Fuel Management Funds). The Spent Fuel Management Funds may only be used to fund the management of the ARRR's nuclear fuel elements after the permanent cessation of operations of the ARRR and before the acceptance of the fuel by the U.S. Department of Energy.

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