



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD – SUITE 102  
KING OF PRUSSIA, PA 19406-1415

December 28, 2023

George Mitchell, Vice President  
Mult Func Manufacturing  
M/S 101A  
Sikorsky Aircraft Corporation  
6900 Main Street  
Stratford, CT 06615

**SUBJECT: SIKORSKY AIRCRAFT CORPORATION, REQUEST FOR ADDITIONAL INFORMATION, MAIL CONTROL NOS. 06-02269-03 AND 06-02269-04G**

Dear Mr. Mitchell:

This is in reference to your applications dated July 27, 2023, requesting to renew NRC License No. 06-02269-03 for manufacturing and possession of devices, and License No. 06-02269-04G for distribution to persons who will use the devices under the general license listed in 10 CFR 31.5 and 31.7. In order to continue our review, we need the following additional information:

1. Guidance for renewal of License No. 06-02269-03 is found in NUREG-1556, Volume 12, Revision 1, "Program-Specific Guidance About Possession Licenses for Manufacturing and Distribution" (NUREG 1556, Vol. 12., Rev. 1). Here is a link to that document: <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v12/index.html> Based on our review of the application, you used Revision 0.
  - a. In accordance with NUREG-1556, Vol. 12, Rev. 1, Section 8.9, submit a diagram to scale depicting areas where radioactive materials are possessed, used and/or stored at each location. The diagram will need to be labeled "Security-Related Information—Withhold under 10 CFR 2.390." Additional guidance may be found in NUREG-1556, Vol. 12, Rev. 1, Appendix F.
  - b. In accordance with NUREG 1556, Vol. 12, Rev. 1, Section 8.10.2, provide one of the following statements:
    - i. Instruments will be calibrated before first use, at least annually thereafter, and after any repair, by a vendor that the NRC or an Agreement State has licensed to perform instrument calibration. **OR**
    - ii. Sikorsky Aircraft Corporation will implement the model radiation survey instrument calibration program published in Appendix H in NUREG-1556, Volume 12, Rev. 1, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Possession Licenses for Manufacturing and Distribution." Please note that this is Appendix H in Rev. 1, not Appendix K as in Rev. 0. **OR**

- iii. Submit equivalent procedures for instrument calibrations.
  - c. In accordance with NUREG 1556, Vol. 12, Rev.1, Section 8.10.7, for leak testing performed other than as described in the General Nucleonics, Inc. technical manual Section 5.2.1 using the IBIS detector, confirm that analysis of leak tests will be performed by you following the model procedures in Appendix N, or by an organization authorized by a license from the NRC or an Agreement State to perform analysis of leak tests. Also, please note that this is Appendix N in Rev. 1, not Appendix P as in Rev. 0
2. Please note the following items identified in the 2013 General Nucleonics technical manual that are either incorrect or out of date.
    - a. Section 2.0, "General Information," states that the IBIS indicator contains 500 millicuries of strontium-90, rather than the 500 microcuries authorized.
    - b. The transportation requirements in Section 7.0 "Packaging and Indicators for Shipment," for the IBIS devices may have changed since 2013 revision of that technical manual.
    - c. Appendix A, Section 3.0, "Radiation Protection Standards," lists occupational dose limits that are not in accordance with NRC current radiation protection standards. The NRC limits annual dose to 5 rem for the whole body, and 50 rem to the extremities or skin of the whole body. The quarterly limits discussed in the General Nucleonics document were revised in the 1990's by the NRC, although these limits are still current under OSHA regulations. The activities with the IBIS units under either the specific license or the general license fall under the NRC radiation protection standards.
    - d. Appendix B, "Radiation Control Regulations" pertaining to general licensees are those of the State of California. As an NRC specific licensee, you should be providing NRC requirements to customers pursuant to 10 CFR 31.5 for the IBIS devices; if your customers are military, those customers will fall under the NRC general license.
    - e. The Agreement State list in Appendix C is out of date. See Item 4 below.
  3. Guidance for renewal of License No. 06-02269-04G is found in NUREG-1556, Volume 16, Revision 1, "Program-Specific Guidance About Possession Licenses Authorizing Distribution to General Licensees" (NUREG 1556, Vol. 16., Rev. 1). Here is a link to that document: <https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v16/index.html>

In accordance with NUREG1556, Vol.16, Rev.1, Section 9.1 "10 CFR 32.51: Requirements for Distribution of Devices for Use Under 10 CFR 31.5 (certain Measuring, Gauging, or Controlling Devices," and Section 9.2 "10 CFR 32.53 Requirements for Distribution of Luminous Safety Devices for Use in Aircraft,"

- a. Submit a copy of the written safety instructions to be provided to recipients who will use the IBIS devices, and to recipients who will use the luminous devices.

- b. A review of the device registration certificates identified that the Shield Source Inc. Model 604 is authorized for distribution to persons who will possess them under the general license in 10 CFR 31.7. The Shield Source Inc. Model AC Series devices may be distributed to persons who will possess them under the general license of 10 CFR 31.5 or 31.7. The IBIS devices may be distributed only to persons who possess them under the general license in 10 CFR 31.5. Confirm that
- i. Sikorsky Aircraft Corporation will transfer only devices that are manufactured consistent with all of the statements in the application, as approved by the NRC and referenced in the device registration certificates and the license.
  - ii. Sikorsky Aircraft Corporation will transfer devices only to persons authorized to use such devices, either by the general license in 10 CFR 31.5 and/or 31.7(as applicable), or by an equivalent general license if the potential recipient is in an Agreement State.
  - iii. Sikorsky Aircraft Corporation will provide information to customers who will possess devices pursuant to 10 CFR 31.5, prior to purchase, in accordance with 10 CFR 32.51a(a) and (b).
  - iv. Sikorsky Aircraft Corporation will provide quarterly transfer reports in accordance with 10 CFR 32.52(a) and (b) and will maintain records in accordance with 10 CFR 32.52(c) for devices distributed to persons who will possess them under the general license in 10 CFR 31.5;
  - v. Sikorsky Aircraft Corporation will provide annual transfer reports in accordance with 10 CFR 32.56 for luminous devices distributed to persons who will possess them under the general license in 10 CFR 31.7.
4. The list of Agreement States in the applications is outdated. Please see the following link for an updated list of Agreement States: <https://www.nrc.gov/agreement-states.html> . Confirm that you will update your list of Agreement States.
5. The following items refer to the slides used for training. You should consider if training slides should be revised.
- a. Slide 13 refers to monitoring requirements for workers. There are different criteria in OSHA and under the NRC. The following refer only to NRC requirements:
    - i. 2 millirem per hour is not a limit specified by the NRC for monitoring workers. The NRC prohibits members of the public from receiving doses greater than 2 millirem in one hour [which is different than 2millirem per hour) and 100 millirem in one year.
    - ii. NRC requires monitoring of workers if workers are likely to receive more than 10% of the annual limit; that is, more than 500 millirem in a year.

That monitoring may be by use of a dosimeter, such as a film badge. Please note that film badges have been replaced by thermoluminescent dosimeters (TLD) and optically stimulated luminescence (OSL) dosimeters.

- b. Slide 28 refers to transportation. This slide states that the IBIS device is an “exempt quantity”. This does not appear to be correct. The current “exempt consignment value” for strontium-90 is 0.27 microcuries. It is possible that this slide should refer to “excepted quantities” or “excepted packages” which result in the packages being exempted from certain requirements. Slide 29 appears to indicate the required statement is for excepted packages.
- c. Slide 38 states that exposure from tritium occurs only if a tube is broken and the tritium gas is inhaled. Please note that some of the gas will include tritiated water vapor and tritium-contaminated phosphor. Handling of broken tritium tubes and signs without adequate gloves can result in intake either through the skin, or through ingestion if contaminated fingers are used when handling food items.

We will continue our review upon receipt of this information. The response may be provided as a pdf copy of a letter signed by management, attached to an email sent to [Elizabeth.Ullrich@nrc.gov](mailto:Elizabeth.Ullrich@nrc.gov) . Alternately, a hard copy of a letter may be sent by regular mail to:

Mail Control Nos.636687 and 636700  
USNRC, Region I  
Division of Radiological Safety and Security  
475 Allendale Road – Suite 102  
King of Prussia, PA 19406

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

An electronic version of the NRC’s regulations is available on the NRC Web Site at: [www.nrc.gov](http://www.nrc.gov). Additional information regarding use of radioactive materials may be obtained on the NRC Web Site at: <http://www.nrc.gov/materials/miau/mat-toolkits.html>. This site also provides the link to the toolbox for updated information on the revised regulations for naturally-occurring and accelerator-produced radioactive materials (NARM).

In accordance with 10 CFR 2.390 of the NRC’s “Agency Rules of Practice and Procedure,” a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the NRC’s document system (ADAMS). ADAMS is accessible from the NRC Web Site at: <http://www.nrc.gov/reading-rm/adams.html>. Please be aware that you may request that certain portions of your submittal to NRC be withheld from public disclosure as proprietary information. To do this, you must execute an affidavit as specified in 10 CFR 2.390. You must list all portions that you wish to be held proprietary, along with your reasoning as to why that is appropriate. While it is allowable, please refrain from submitting proprietary information in support of a license unless necessary. Keep in mind that all NRC licenses are considered to be in the public domain, and therefore may be viewed by any member of the public who requests to see them.

If you have any questions regarding this request for additional information, please contact me at 610-337-5040 (or by cell phone to 240-704-4575) or by electronic mail to Elizabeth.Ullrich@nrc.gov.

Thank you for your cooperation.

Sincerely,

Betsy Ullrich, Senior Health Physicist  
Commercial, Industrial, R&D  
and Academic Branch  
Division of Radiological Safety and Security  
Region I

License Nos. 06-02269-03 and 06-02269-04G  
Docket Nos. 030-03779 and 030-17749  
Mail Control Nos. 636687 and 636700

cc: Julius Vaughn, Radiation Safety Officer

SIKORSKY AIRCRAFT CORPORATION, REQUEST FOR ADDITIONAL INFORMATION, MAIL CONTROL NOS. 06-02269-03 AND 06-02269-04G DATED DECEMBER 28, 2023

DOCUMENT NAME: [G:\WBL Documents\L06-02269-03.-04G.636687.636700.docx

**SUNSI Review Complete:** Betsy Ullrich

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	RI:DRSS	N					
NAME	Betsy Ullrich						
DATE	12/28/23						

OFFICIAL RECORD COPY