



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 2, 2017

Chemring Sensors & Electronic Systems
ATTN: Camille Gagnon
HSE Manager / Assistant Radiation
Safety Officer
4205 Westinghouse Commons Drive
Charlotte, NC 28273

SUBJECT: THIRD REQUEST FOR ADDITIONAL INFORMATION

Dear Ms. Gagnon:

This letter refers to your license renewal application request dated May 22, 2017, for U.S. Nuclear Regulatory Commission (NRC) Exempt Distribution License No. 32-23947-01E, and your response to our second Request for Additional Information dated September 13, 2017.

We do not have sufficient information to complete the review of your application. The enclosure indicates those areas for which you should provide additional clarification.

We will continue our review upon receipt of this information. If we do not receive your reply within 30 calendar days from the date of this letter, we will consider your application as having been abandoned by you. This action would be without prejudice to the resubmission of another application with the required information.

Please be aware that upon your request, proprietary information submitted to the NRC may be withheld from public disclosure. To do this, you must follow the procedures in Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390(b) including requesting withholding at the time the information is submitted and complying with the document marking and affidavit requirements set forth in 10 CFR 2.390(b)(1).

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 Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Any correspondence regarding this renewal application should reference control number 599819.

C. Gagnon

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If you have any questions, please feel free to contact me at (301) 415-5477, or by e-mail:
Richard.Struckmeyer@nrc.gov.

Sincerely,

/RA/

Richard K. Struckmeyer
Materials Safety Licensing Branch
Division of Material Safety, State, Tribal,
and Rulemaking Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: 030-37431
License No. 32-23947-01E

Enclosure:
Request for Additional Information

CHEMRING SENSORS & ELECTRONIC SYSTEMS, THIRD REQUEST FOR ADDITIONAL INFORMATION

Date: November 2, 2017

ML17165A210 (pkg.)		ML17306A683 (Letter)	
OFC	NMSS/MSTR/MSLB	NMSS/MSTR/MSLB	NMSS/MSTR/MSLB
NAME	Richard Struckmeyer	Deborah Weaver	Richard Struckmeyer
DATE	11/2/2017	11/2/2017	11/2/2017

OFFICIAL RECORD COPY

Chemring Sensors & Electronic Systems Inc.
Application dated September 5, 2017
Request for Additional Information

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the Chemring Sensors & Electronic Systems Inc., application dated September 13, 2017, and determined that additional information is needed. In order to continue with our review, please address the issues listed below.

1. Please indicate the location of the detector interface body (DIB) in an engineering drawing you have supplied (such as those in Attachment D) or in a supplementary drawing.
2. The engineering drawings, the Prototype Test procedure, and Prototype Test results all are dated 2007. Please confirm that these drawings, procedure, and results remain valid notwithstanding their age and the change of control from General Dynamics Armament and Technical Products, Inc., to Chemring Group PLC (now Chemring Sensors & Electronic Systems, Inc.).
3. In Attachment K, Sections 4.2.1.2 and 4.3.1.2 refer to units that will end up in landfills. This appears to be an error. Please clarify whether these sections should refer to units that will end up in landfills or in incinerators.
4. In Attachment K, on page K13 (Section 5.1.1.6), you provided NUREG 1717, Table A.2.5 as a reference for the "Individual Dose-to-Source Ratio for Inhalation Exposure" (5.0×10^{-13} rem/ μ Ci); and on page K14 (Section 5.2.1.5), you provided NUREG 1717, Table A.2.5 as a reference for the "Individual Dose-to-Source Ratio for Resuspension Exposure" (3.3×10^{-12} rem/ μ Ci). It appears that these values actually were obtained from Table A.1.5. Please determine the correct references and provide them in your response.
5. The number of units manufactured per year is given as 20,000. Is this number expected to remain constant? If not, please provide an estimate of the expected maximum and minimum quantities that might be manufactured over the next 15 years.
6. In Attachment K, the following sections each provide an estimate of the percentage and number of units affected in various scenarios. Please indicate the basis for your estimates. It is not necessary to address each section separately, unless the basis differs for each.
 - a. Page K7, Section 3.1.1.3 – A conservative estimate of 20 percent of the units could be damaged by waste collection activities, so 4,000 units estimated at releasing Ni-63.
 - b. Page K8, Section 3.2.1.2 – The number of JUNO™ units that will end up in landfills is approximately 96 percent (19,200 units).
 - c. Page K8, Section 3.2.1.3 – A conservative estimate of 20 percent of the units could be damaged by waste collection or landfill activities, so 3,840 units estimated at releasing Ni-63.

Enclosure

- d. Page K9, Section 3.3.1.2 – The number of JUNO™ units that will end up in landfills is approximately 96 percent (19,200 units).
 - e. Page K10, Section 3.5.1.2 – The number of JUNO™ units that will end up in landfills is approximately 96 percent (19,200 units).
 - f. Page K10, Section 3.5.1.4 – A conservative estimate that 15 percent of the undamaged units placed into the landfill will degrade as a result of decomposition activities from surrounding landfill conditions over time (landfills are generally closed after decades of existence), so 600 units estimated at releasing Ni-63 from this situation.
 - g. Page K11, Section 4.2.1.2 – The number of JUNO™ units that will end up in landfills is approximately 4 percent (800 units).
 - h. Page K11, Section 4.2.1.3 – A conservative estimate of 20 percent of the units could be damaged by waste collection/tipping floor activities, so 160 units estimated at releasing Ni-63.
 - i. Page K13, Section 4.3.1.2 – The number of JUNO™ units that will end up in landfills is approximately 4 percent (800 units).
7. In Attachment K, the following sections each assume that the number of units affected will be those that can be manufactured in 1 month. Please indicate the basis for this assumption. It is not necessary to address each section separately, unless the basis differs for each.
- a. Page K13, Section 5.1.1.2 – The number of units involved in a single transportation event (or warehousing associated with transportation) is the quantity that can be manufactured in one month (20,000 units/year ÷ 12 months/year), so 1,667 units estimated at releasing Ni-63.
 - b. Page K14, Section 5.2.1.2 – The number of units involved in a single transportation event (or warehousing associated with transportation) is the quantity that can be manufactured in one month (20,000 units/ year ÷ 12 months/year), so 1,667 units estimated at releasing Ni-63.