



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION IV
1600 E LAMAR BLVD
ARLINGTON, TX 76011-4511

July 11, 2014

EA-14-063

Mr. John J. Miller, Radiation Safety Officer
International Isotopes, Inc.
4137 Commerce Circle
Idaho Falls, ID 83401

**SUBJECT: RESPONSE TO DISPUTED NOTICE OF VIOLATION - NRC INSPECTION
REPORT 040-09058/1301-02**

Dear Mr. Miller:

On April 11, 2014, International Isotopes, Inc. provided a response to a U.S. Nuclear Regulatory Commission (NRC) Inspection Report 040-09058/13-001 (ADAMS Accession No. ML14087A455) dated March 25, 2014. Specifically, your letter contested the Notice of Violation related to the failure to adequately survey building 1359 in May 2013. Building 1359 was subsequently released for unrestricted use.

By letter dated May 15, 2014 (ML14135A526), the NRC acknowledged your letter and informed International Isotopes, Inc., that the NRC would review your dispute of the violation using the guidance provided in NRC Enforcement Manual, Part 1, Section 2.3.7, "Licensee Response to a Non-Escalated NOV." Based on the NRC staff's review, the violation has been determined to remain valid, as described below. No additional information is required from you in response to this violation.

In your letter dated April 11, 2014, (ML14104B556), you disputed the statements, "the licensee did not make or cause to be made surveys that were necessary to comply with 10 CFR 20.1402" and "because the licensee incorrectly surveyed the building, it could have released the building for unrestricted use without meeting the radiological criteria for unrestricted use after decommissioning." The NRC cited this violation because we concluded that you had failed to make or cause to be made surveys as required by 10 CFR 20.1501(a), which were necessary to demonstrate compliance with 10 CFR 20.1402 requirements.

Title 10 CFR 20.1402 provides the radiological criteria for unrestricted use of a site. Although you conducted a radiological survey, you failed to correctly convert the field survey results (in counts per minute) to the correct units (disintegrations per minute per 100-square centimeters) for comparison to the derived concentration guideline level (DCGL). In particular, you failed to use the source efficiency in your calculations.

The NRC has adopted the guidance provided in NUREG-1575, Revision 1, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," for planning, implementing, and evaluating environmental and facility radiological surveys conducted to demonstrate compliance with a dose- or risk-based regulations. Commonly, licensees implement the guidance provided in MARSSIM to demonstrate compliance with 10 CFR 20.1402 requirements. The NRC recognizes that the information provided in MARSSIM is guidance, and licensees are free to use other methods acceptable to the NRC to demonstrate compliance with 10 CFR 20.1402 requirements. However, you committed to the use of MARSSIM in Section 2.6 of your Decommissioning Plan dated February 18, 2013.

By letter dated June 25, 2013, (ML13178A215), you submitted a license amendment request to the NRC. You requested that the NRC remove Building 1359 from the license. To support your request, you submitted a decommissioning plan and final status survey report for NRC review. You subsequently released Building 1359 at risk.

As part of the inspection, we reviewed the guidance provided in MARSSIM to determine whether you had conducted an adequate survey. Specifically, MARSSIM Section 6.6 discusses the data conversion process and specifies that the survey data be converted to the units of the DCGL. A source efficiency is included in the calculation used to convert instrument surface activity measurements in units of counts into disintegrations per unit time. These converted values are then compared to the DCGL. The original submittal dated June 25, 2013, contained survey data that could not be directly compared to the proposed DCGL, due to the absence of the source efficiency. Based on our review, we determined that your initial final status survey plan and survey data results did not demonstrate compliance with the requirements of 10 CFR 20.1402.

In your response letter, you disagreed with the NRC's basis for the violation, in part, by disagreeing with the NRC's interpretation of the term *survey*. As noted in the NRC inspection report and Notice of Violation, the term *survey* is defined in regulation 10 CFR 20.1003.

Surveys include measurements or calculations of the levels of radiation or radioactivity present. As you acknowledge in your April 11, 2014 letter, the basis for the NRC's citation was your failure to include the source efficiency in your survey calculation. You also state in your letter, that NUREG-1736, "Consolidated Guidance: 10 CFR Part 20-Standards for Protection Against Radiation," page 3-20, further expands on the definition of *survey*.

In your response letter, you objected to the NRC's conclusion, in part, because your decision to release the building was based on other available relevant information such as previously obtained operational surveys, pre-decommissioning surveys, occupational doses, and air sampling data. The NRC agrees that this additional information can be qualitatively used in your decision to release the building. However, the same quote from NUREG-1736 identifies that an adequate survey includes an assessment of the resulting field data. Further, the requirement under 10 CFR 40.42(j)(2)(ii), states, in part, that as the final step in decommissioning, the licensee shall conduct a radiation survey of the premises, in which the licensee shall, as appropriate, report levels of alpha and beta, in units of disintegrations per minute per 100-square centimeters removable and fixed. As stated above, the NRC concluded that your original field data was not properly assessed, resulting in an inadequate survey due to the absence of the source efficiency used to convert to the units of the DCGL.

In summary, the NRC has reviewed your response, and concluded that the violation is valid as cited. The NRC continues to conclude that International Isotopes, Inc. failed to properly assess the field data for Building 1359, resulting in an inadequate survey. This inadequate survey was used to justify the decision to release Building 1359 for unrestricted use. The NRC acknowledges that this incident did not result in actual safety consequences, which could possibly correspond to a Severity Level III violation as provided for in the Enforcement Policy. However, the possibility existed that your failure to conduct an adequate survey *could have* resulted in release of the building for unrestricted use without demonstrating compliance with 10 CFR 20.1402 requirements.

In response to NRC comments during the inspection concerning your submitted survey data, you recalculated your field measurements to include the source efficiency as recommended in MARSSIM. When you included the source efficiency in your calculations, many of the surface contamination measurements exceeded the originally proposed DCGL. Based on these results, you eventually proposed a different DCGL to the NRC, as allowed by NRC guidance documents. The revised final status survey report was submitted to the NRC by letter dated February 25, 2014 (ML14063A473).

You submitted updated final status survey reports to the NRC for review on February 25, 2014 (ML14063A473), and March 25, 2014 (ML14045A145). This submittal is still under NRC review. As part of the agency's process, any NRC decision, comments or requests for additional information regarding your February and March 2014 submittals will be provided to you under separate correspondence.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter and your letter dated April 11, 2014, will be made available electronically for public inspection in the NRC Public Document Room or from the 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>.

Should you have any questions concerning this matter, please contact Dr. Robert Evans, Senior Health Physicist, at 817-200-1234, or the undersigned at 817-200-1287.

Sincerely,

/RA/

Linda L. Howell, Acting Director
Division of Nuclear Materials Safety

Docket No. 040-09058

License No. SUB-1587

cc: Mark Dietrich, Administrator
Technical Services Division
Idaho Dept. of Environmental Quality
1410 North Hilton
Boise, ID 83706

Should you have any questions concerning this matter, please contact Dr. Robert Evans, Senior Health Physicist, at 817-200-1234, or the undersigned at 817-200-1287.

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Linda L. Howell, Acting Director
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