March 25, 2011

MEMORANDUM TO: Thomas G. Hiltz, Chief
Advanced Fuel Cycle, Enrichment
and Uranium Conversion Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

FROM: Matthew A. Bartlett, Project Manager ***/RA/***
Advanced Fuel Cycle, Enrichment
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SUBJECT: MARCH 07, 2011, CALL WITH INTERNATIONAL ISOTOPES, INC. TO DISCUSS DRAFT RESPONSES TO THE ENVIRONMENTAL REPORT REQUESTS FOR ADDITIONAL INFORMATION (TAC NO. L32740)

The U.S. Nuclear Regulatory Commission (NRC or staff) held a conference call with International Isotopes, Inc. (INIS) and their contractors on March 07, 2011. The purpose of the call was to discuss the applicant's draft responses to the NRC's requests for additional information (RAIs) regarding the INIS Environmental Report (ER) for the proposed Fluorine Extraction Process and Depleted Uranium De-conversion Plant. A list of the talking points was provided to INIS in advance of the meeting and is attached to this summary. Public versions of the RAIs and proposed responses are available via the Agencywide Documents Access and Management System (ADAMS), through the accession numbers: RAIs – ML103540538 and draft RAI responses – ML110680082.

One of the key NRC staff messages focused on the need to ensure that the ER separates activities and impacts between Phase 1, Phase 2, and cumulative (total) effects. The NRC staff noted that several places in the ER, including some tables, need to differentiate whether "Phase 2" data in the ER actually represent Phase 2 incremental impacts or the aggregate of Phase 1 and Phase 2. The formal RAI responses should resolve these issues.

The projected timeframe to provide formal RAI responses was discussed. The NRC staff's projected completion of the Environmental Impact Statement (EIS) by early 2012 requires receipt of the formal RAI responses within 30 days of the RAI letter. Consequently, INIS responses were due by January 21, 2011. The applicant indicated that a quality, comprehensive response would be provided to the NRC staff by the end of March 2011.

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The two-month extension to submit formal RAI responses from the end of January to the end of March will impact the environmental review schedule. The impact is anticipated to be a day-for-day extension on the completion date for the EIS.

INIS reviewed this summary for factual correctness.

Docket No. 40-9086

Enclosures:
1. List of Participants
2. EIS Discussion Items Regarding Draft RAI Responses

cc: Mr. John J. Miller, CHP
4137 Commerce Circle
Idaho Falls, ID 83401

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LIST OF PARTICIPANTS

CALL WITH INTERNATIONAL ISOTOPES, INC.
TO DISCUSS THE DRAFT REQUEST FOR ADDITIONAL INFORMATION
RESPONSES FOR THE ENVIRONMENTAL IMPACT STATEMENT

MARCH 08, 2011

NAME	**AFFILIATION**
Asimios Malliakos	FSME
Matthew Bartlett	NMSS
Tim Harvey	FSME/Contractor
Steven Connor	FSME/Contractor
Richard Heimbach	FSME/Contractor
Ellen Mussman	FSME/Contractor
Alverna Durham	FSME/Contractor
John Miller	International Isotopes, Inc. (INIS)
Donny Chumbler	INIS Contractor
Tommy Thompson	INIS Contractor
Karen Bomar	INIS Contractor

Environmental Impact Statement Discussion Items Regarding
Draft Requests for Additional Information Responses

1. General comments on the responses to the Requests for Additional Information (RAIs):

Some RAI responses appear to contradict other RAI responses. Examples of inconsistencies include the following (this is not an exhaustive list):

- The response to RAI 2 includes the statement in revised Section 4.13.2 (RAI response pg. 39 of 186) that, "No radioactive waste is expected to be generated during the preconstruction and Phase 1 construction phases." The response further states that, "Radiological materials will not be used in the construction of Phase 2 Facility itself," which seems to mean that Phase 2 construction will not generate radioactive wastes. These statements appear to contradict the information provided in revised Table 3-59 in the response to RAI 20 (RAI response pg. 167 of 189), which indicates that 5,100-7,600 lbs of low-level waste will be generated during Phase 1 construction; and 5,100-7,600 lbs of low-level waste will be generated during construction of Phase 2.

- Table RAI 8-a-1 (RAI response pg. 74 of 186) lists the vehicles to be used and their associated emissions for criteria pollutants. Thirteen (13) construction vehicles and twelve (12) support vehicles are listed. But text in paragraph six in Section 4.6.1 of the Environmental Report (ER) states, *"thirteen miscellaneous gasoline trucks and four smaller utility vehicles…thirteen pieces of miscellaneous construction equipment."* Table RAI 8-a-1 appears to be missing one support vehicle and four utility vehicles and their potential emissions.

- The text and response to RAI 8b (pg. 77 of 186) state that gasoline vehicles will be used. In the response to RAI 8c (pp. 78-81 of 186), however, only impacts of diesel fuel are discussed.

- The assumptions for the operation of the diesel generator and fire water pump are different in Table 4-14 (RAI response pg. 85 of 186) and Table 4-16 (RAI response pg. 86 of 186).

- The RAI 9 corrected Table 4-13 (pg. 83 of 186) has no units for Emission Factor, while the Table 4-14 (pg. 85 of 186) has units of lb/hp-hr. Also, on Table 4-14, Footnote "C" indicated in the title—is missing.

- The sentence describing Table 4-12 (RAI response pg. 84 of 186) states that, "Operation emission types, source locations, and emission quantities are presented in Table 4-12." However, no source locations are included in Table 4-12 (RAI response pg. 81 of 186).

2. International Isotopes, Inc. (INIS) Proposed Action

INIS, in the responses to RAIs, appears to be requesting an EIS for a combined Phases 1 and 2. The license application was submitted only for Phase 1.

3. **RAI 2 – Provide Phase 1 and Phase 2 activities and impacts separately.** (RAI response pp. 15-44 of 186)

There are some areas where Phases 1 and 2 impacts might not have been separated.

Examples of areas where Phases 1 and 2 activities/impacts were not broken out separately include the following:

- Table 7-4 (Estimated Construction Labor Costs) from the original ER was not revised to separate construction labor costs for Phase 1 from those for Phase 2 (not reflected in the RAI response).

- The ER states in Section 3.4.6 and Section 4.4.5) that operational water use is anticipated to be 3,000-4,500 gal/day, with peak usage less than 10,000 gal/day. This has not been revised in the RAI responses, and it is unclear if the operational water use quantities are for Phase 1 or both Phases 1 and 2.

- In addition, neither the ER nor the RAI responses identify the amount of groundwater that would be used for Phases 1 and 2 constructions. Data regarding annual groundwater use (requested in RAI 11c) should be broken down between construction and operational usage, and between Phases 1 and 2.

- The ER states in Section 4.2.4.2 that, "the maximum potential daily increase to traffic due to construction deliveries and waste removal will be about 20 roundtrips per day over the site preparation and major building construction period." This has not been revised in the RAI responses, and it is unclear whether the number of round trips is associated with Phase 1 or Phase 2 construction.

- Section 4.12 of the ER provides data related to public and occupational health. These data were not revised in the RAI responses, and it is unclear whether the data pertain to Phase 1 alone or Phases 1 and 2 combined.

- Table 4-11, Emission Rates during Construction (RAI response pg. 75 of 186). It appears that these data are for Phase 1 only. If so, there are no Phase 2 data.

- Table 4-4, Annual Incident-Free Transportation Radiological Dose to the Public and Worker (RAI response pg. 67 of 186) shows only the cumulative number for total shipments of DUF6 (789 shipments). This should be broken down into the number of shipments expected during Phases 1 and 2.

- Table RAI 8-a-1, Emission Rates during Construction (this is a supporting data table for Table 4-11) (RAI response pg. 74 of 186). It appears to be for Phase 1 only. If so, there are no Phase 2 data.

- Table RAI 8-c-1, Calculation of Average Annual Loaded Power (RAI response pg. 78 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 8-c-2, Other IIFP Construction Parameters (RAI response pg. 79 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 8-c-3, Calculate Onsite Fuel Consumption for Construction Equipment (RAI response pg. 79 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 8-c-4, Calculate annual volatile organic compound (VOC) emissions attributable to onsite fuel station operations (RAI response pg. 79 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 8-c-6, Compare IIFP fugitive VOC emissions with Lea County VOC emissions (RAI response pg. 80 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 8-c-1, Calculation of Average Annual Loaded Power (RAI response pg. 78 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-12, Predicted Property-Boundary Air Concentrations and Applicable National Ambient Air Quality Standards (RAI response pg. 81 of 186), was updated to show the impact of total emissions during the construction of the IIFP Facility. It appears these data are for Phase 1 only. If so, there are no Phase 2 data.

- Table 4-13, Air Emissions during Operation of Onsite Boilers (Natural Gas) (RAI response pg. 83 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table RAI 9-a, Air Emissions during Operation of Onsite Boilers (Natural Gas) (RAI response pg. 82 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-14, Air Emissions during Operation of Onsite Generators and Fire Water Pump (RAI response pg. 85 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-15, Air Emissions during Operation of Onsite Hydrogen Generation at the Hydrogen Generator Stack (RAI response pg. 85 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-16, Air Emissions During IIFP Facility Operations (RAI response pg. 86 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-25, Estimated Annual Non-Radiological Gaseous Effluent (RAI response pg. 91 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-26, Estimated and Bounding Radiological Releases from the Stacks (RAI response pp. 91-92 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-27, Annual and Committed Dose Equivalents for Exposures to the maximally exposed individual (MEI) from Gaseous Effluents (RAI response pg. 93 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-28, Annual and Committed Dose Equivalents for Exposures to the Nearest Resident from Gaseous Effluents (RAI response pg. 94 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-29, Estimated Dose Rates for Site Boundary Locations, MEI, and Nearest Resident (RAI response pp. 94-95 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-30, Collective Dose Equivalents to All Ages Population (Person-Sv) (gas release pathways) (RAI response pg. 99 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Table 4-31, Collective Dose Equivalents to All Ages Population (Person-rem) (gas release pathway) (RAI response pg. 101 of 186). It is unclear whether the data are for Phase 1 only or for Phases 1 and 2.

- Text that is associated with or that references the above tables should also be revised consistent with the tables.

In addition, where data are provided for Phase 2 activities/impacts, it is not always clear whether the data pertain to the incremental Phase 2 activities/impacts, or to the combined Phases 1 and 2 activities/impacts.

As an example, the response to RAI 5 (pp. 61 of 186; and similar statements on pp. 63, 65, and 67 of 186) states that, "Phase 1 DUO_2 shipments will be approximately 145 to 155 annually. In Phase 2, DUO_2 total shipments are approximately 450 to 500 annually." It appears that the "Phase 2" figure reflects the total shipments from both the Phase 1 and the Phase 2 facilities, but this is not explicitly stated.

4. **RAI 3 – Provide additional information regarding taxes during construction and operation of the International Isotopes Fluorine Products, Inc. (IIFP) facility.**

   d. **Identify the taxing entities including the two educational entities, as stated in Section 7.1.5.7, "Insurance and Taxes," of the ER (IIFP, 2009a), that would tax the plant and what percentage of the payments would be sent to each entity. (Examples of taxing entities include state, county, municipality, local schools/ colleges, and independent irrigation districts.)** (RAI response pp. 45-50 of 186)

      The numbers reported in revised Table 7-11 (page 49 of 186) and in the fourth paragraph of response to RAI 3e (page 50 of 186) appear to be inconsistent. Please clarify.

5. **RAI 8 – Provide additional information regarding air emissions during construction of the IIFP facility.**

   a. **Provide the site-specific assumptions that went into the estimates of the air emissions resulting from operation of off-road construction equipment in Table 4-11 of the ER (IIFP, 2009a). Include vehicle types and assumptions regarding quantity totals that make up the thirteen support vehicles and the thirteen construction vehicles.** (RAI response pp. 74-76 of 186)

Table RAI 8-a-1 (RAI response pg. 74 of186) Emission Rates during Construction is missing CO values; therefore, we cannot ascertain where the CO values on Table 4-11 (RAI response pg. 75 of 186) came from. Please provide CO values in Table RAI 8-a-1.

c. Provide air impact analysis for the fuel storage and dispensing activities.

The source or bases for assumption 3 ("*Cumulative daily onsite fuel consumption of light duty, medium duty, and delivery trucks is equal to the fuel consumption of a single backhoe*.") is not evident (RAI response pg. 78 of 186)

6. RAI 9 – Provide additional information regarding air emissions during the operation of the IIFP facility. (RAI responses pp. 82-109 of 186)

c. Describe the methods/analyses used to estimate the annual emissions from the facility, by pollutant, including the model (name and source of the model) used for estimating annual gaseous effluent concentrations, and modeling inputs and assumptions.

The text at the bottom of page 87 and Table 4-17 (RAI response pg. 88 of 186) appears to be inconsistent on the following:

- It is unclear whether BF3 is 77 lbs/yr or 107.9 lbs/yr, and whether HF is 220 lbs/yr or 260.6 lbs/yr for Phase 1?

- Also, it is not clear whether the totals in the text on page 87 are for Phase 1 only or both Phases 1 and 2.

The HF entry in Table 4-25 is inconsistent with both the text on page 87 and Table 4-17. The Phase 2 values match, but the Phase 1 values (although not so labeled) of 220 lbs/yr in text on the bottom of page 87 do not match either Table (i.e., 248 lbs/yr in Table 4-25 or the 260.6 lbs/yr in Table 4-17 (Phase 1 only).

The description of methods/analyses used to estimate annual emissions, as requested in RAI 9c, is incomplete with respect to the following:

- For Table 4-15 (pg. 85 of 186), noted vendor information and assumptions (such as hours of operation) for the Hydrogen Generator are not provided.

- Table 4-12 (RAI response pg. 81 of 186) includes data on "Emissions (tons)," but it is unclear whether these data represent the total quantity in a year or something else.

- In reference to how the values for Annual Average Dilution Factors (AADF) were obtained (RAI response pg. 88 of 186), identify the values used for inputs into the Guassian Plume Model (GPM):

    1. Relevant information for "y," "z," and "h" on their initial values and basic assumptions has been deleted from page 89. Discuss for these parameters the initial values and basic assumptions.

2. Clarify what is the value of receptor height in relation to the height of emission release, z? Is the z value used in all directions, and for all distances along each direction?

3. Clarify what is the value of emission transport, h? Is this assumed to be the height of emission release? Is there a plume rise factor associated with the value? Is each pollutant treated separately or averaged to one h value? Documentation of the modeling methods is not provided.

- Discuss the methodology and documentation which describes how the AADF are used to predict downwind concentrations and Estimated Dose Equivalents.

- Discuss the downwind concentrations of uranium and other pollutants, and how the concentrations relate to threshold levels.

- Please clarify how the predicted concentration of uranium is related to EDE and the conversion factors that are used. Clarify why the conversion factors are different for each class (adult, teen, child, and infant). Discuss the results that are documented, and the methodology used.

- Regarding Table 4-30, 31 (RAI response pp. 98 and 100 of 186). Collective Dose Equivalents to all ages's population (person-Sv) or (person-rem): It is unclear as to why values are zero closer to the plant and then increase farther away. From the documentation, it appears this may be related to the population density in each direction. It is unclear which equation was used for the calculation of this value.

7. RAI 11 – Provide additional information regarding groundwater.

c. Describe the proposed site groundwater production wells to include well locations, total depths, and peak and average pumping rates (gallons per minute), and annual maximum groundwater use. (RAI response pg. 122 of 186)

The draft response to RAI 11 provides information about monitoring wells. The information requested is for the **production** wells. Discuss the information that is available for each production well—including location, depth, peak and average pumping rates and maximum groundwater that will be withdrawn from the aquifer (or from each aquifer if wells are screened in different aquifers).

8. RAI 14 – Provide reports of ecological field studies. (RAI response pp. 134-138 of 186)

The RAI response states that the following surveys are attached, but they were not:

- (GLEI, 2010a) GL Environmental, Inc., "2010 Vegetation Survey Report," Las Vegas, NM, November 29, 2010.

- (GLEI, 2010b) GL Environmental, Inc., "Status and Habitat of the Dunes Sagebrush Lizard at the Proposed Site for the International Isotopes Fluorine Products Facility in Lea County, New Mexico," Las Vegas, NM, November 29, 2010.

- RAI response 1, Table 2-1 (RAI response pg. 13 of 186) shows that a Wildlife Baseline Study started in the third Quarter 2010 and will be completed third Quarter 2011. The reports generated by these surveys have not been provided, as requested in RAI 14.

- Table 1-3, included as part of RAI 17 (RAI response pg. 147 of 186), indicates that a survey for the lesser prairie-chicken, which is often associated with the dune sagebrush lizard, is to be completed second Quarter 2011. The report has not been provided, as requested in RAI 14.

9. **RAI 15 – Provide the rationale, including appropriate documentation, that jurisdictional wetlands are, or are not, present within the proposed 40-acre facility (plant compound) construction area.** (RAI response pp. 139-144 of 186)

While the U.S. Army Corps of Engineers determined they have no jurisdiction over any waters on the site, it is possible that some areas on the site may be under the regulatory jurisdiction of the State of New Mexico. The RAI response provides no mention of coordination with or jurisdictional determinations by the New Mexico Environmental Department. Without information from the State of New Mexico, it is unclear whether the State may consider the depressions located onsite as jurisdictional. Please ensure that the RAI response addresses this aspect of RAI 15 by providing information about the State jurisdictional status of the depressions/wet areas located on the site.

10. **RAI 17 – Clarify the status and/or schedule of the various state permits mentioned in the ER, including a list of those determined to not be necessary.**

The RAI response (RAI response pg. 147 of 186) indicates that the groundwater discharge permit application originally was to be submitted in third Quarter 2010, and will now be delayed to third Quarter 2011. Since the permit application will, therefore, be unavailable for reference in the EIS, please provide information regarding the disposition method(s) (e.g., pond, injection, irrigation, or other) and expected discharge quantities that will be requested in the permit application.

Please also reconcile the stated need for a groundwater discharge permit with the seemingly contradictory statement in the RAI 20 (RAI response pp. 164-167 of 186) response that, “Liquid wastes are not discharged from the process.” (pg. 164 of 186)