

December 21, 2010

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR ENVIRONMENTAL REPORT
FOR THE INTERNATIONAL ISOTOPES FLUORINE PRODUCTS LICENSE
APPLICATION (TAC L32740)

Dear Mr. Miller:

The Office of Federal and State Materials and Environmental Management Programs and their contractor have completed the initial review of the Environmental Report for the International Isotopes Fluorine Products (IIFP) facility, proposed to be constructed and operated in Lea County, New Mexico. Your environmental report was submitted via letter dated December 30, 2009 (Accession Number ML100120758). Our review of the Environmental Report has identified that additional information is needed to complete the environmental review.

The draft Requests for Additional Information (RAI) were provided via email on December 13, 2010 (Accession Number ML103481281), prior to a conference call to ensure that the RAIs were understood clearly. The formal RAIs are enclosed and address the Environmental Report only. Questions and comments on our review of the license application will be provided separately.

Please provide the additional information requested in the enclosure within 30 days of the date of this letter.

In accordance with 10 CFR 2.390 of the U.S. Nuclear Regulatory Commission's (NRC's) "Rules of Practice," a copy of this letter and Enclosure 1 will be available electronically for public inspection in 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> (the Public Electronic Reading Room).

J. Miller

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If you have any questions regarding this letter, please contact me at (301) 492-3119 or via e-mail to matthew.bartlett@nrc.gov.

Sincerely,

/RA/

Matthew Bartlett, Project Manager
Advanced Fuel Cycle, Enrichment, and
Uranium Conversion Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-9086

Enclosure:
Environmental Report RAIs for IIFP

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Request for Additional Information Regarding Environmental Report

RAI 1

Provide a description of preconstruction and construction activities and their associated impacts.

- a. Provide definite preconstruction activities within each pertinent section of the Environmental Report (ER). The ER mentions only potential preconstruction activities (e.g., Section 2.1.2, "Site Construction" provides a list of potential preconstruction activities).
- b. Separate preconstruction from construction activities in the ER. For example, in Section 4.10.1, "Facility Construction," separate the preconstruction from the construction workforce. Another example, in Section 4.6.1, "Air Quality Impacts from Construction," including Tables 4-11 and 4-12, separate respectively the "air quality impacts and emission rates" and "predicted property-boundary air concentrations" into preconstruction and construction. Topics that need revision include, but may not be limited to: waste streams, employment information, activity durations, air emissions, economic information, transportation information, and water/usage/discharge information.
- c. Provide estimated milestones (including durations) of all preconstruction and construction activities relative to the anticipated issuance of the license.

This information is needed to assess the effects of construction and to develop the cumulative effects analysis within the Environmental Impact Statement (EIS). Cumulative effects include past, present, and reasonably foreseeable future actions. Impacts from preconstruction activities will be evaluated in the cumulative effects analysis along with those of the proposed action and any other past, present, and reasonably foreseeable future actions. Therefore, it is necessary that these preconstruction activities and their impacts be clearly distinguished throughout the ER from the construction activities that are considered part of the proposed action.

RAI 2

Provide Phase 1 and Phase 2 activities and impacts separately.

- a. Clarify and confirm that the proposed action consists only of Phase 1.
- b. Provide separate quantitative Phase 1, Phase 2 (incremental), and cumulative (Phase 1 plus Phase 2) values for the following information described in Chapters 2 and 4 of the ER (IIFP, 2009a):

- all materials that serve as inputs and outputs to the deconversion process (a mass balance), including emissions and waste streams;
- workforce; and
- impacts.

For example, separate the air quality impacts described in Section 4.6.2, “Air Quality Impacts from Operations” into impacts that will result from Phase 1 operations and impacts that will result from Phase 2 operations. Also, state that the cumulative impacts will be Phase 1 plus Phase 2, or describe the cumulative impacts, if they are not additive.

- c. Describe Phase 2 construction activities. For example, describe additional land disturbing activities and construction of buildings.

This information is needed to describe the proposed action and to develop cumulative effects analyses within the EIS. Cumulative effects include past, present, and reasonably foreseeable future actions. Phase 2 construction and operation will be considered reasonably foreseeable future actions relative to the proposed action, and their impacts will be evaluated in the cumulative effects analysis along with those of the proposed action and any other past, present, and reasonably foreseeable future actions. Therefore, it is necessary that these Phase 2 activities and their impacts be clearly distinguished throughout the ER from activities that are part of the proposed action.

RAI 3

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

- a. Provide a description of any agreements, abatements, fees-in-lieu-of taxes, or any other arrangements (routine or special) that IIFP may have with property taxing entities for the facility.
- b. Sections 2.2, “Alternatives for Site Selection,” 7.1.2, “Basis of Construction and Operating Costs-Benefit Estimates for the Proposed Action,” and 7.1.5.7, “Insurance and Taxes” of the ER (IIFP, 2009a) state that the State of New Mexico and Lea County both have an incentive package that would exempt this facility from property and local taxes. Provide more details about this package, including whether it is final and what, if any, taxes are owed to the State and County.
- c. Provide estimated property tax payments, including those paid on land and everything attached to the land and property taxes on company equipment and material during preconstruction and construction.
- 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 including State, County, municipality, local schools/colleges, and independent irrigation districts.)

- e. Provide estimated property tax payments including those paid on land and everything attached to the land and property taxes on company equipment and material during operations.

The above tax payment information will be needed to quantitatively evaluate the impacts of construction and operations property tax payments for the EIS socioeconomics analysis. This is important to clarify because payments made to local taxing entities can be considered large in comparison to other local municipality tax revenues, and can therefore be a significant factor in the socioeconomic impact analysis.

RAI 4

Provide clarifications and additional data for the cost-benefit analysis.

- a. Clarify whether replacement capital costs are construction or operations costs. Although replacement capital covers activities that are similar to construction, these activities occur after 2017, and thus would occur during the operations phase of the project. Chapter 7, "Cost-Benefit Analysis" of the ER (IIFP, 2009a) presents replacement capital as construction.
- b. Provide an estimate of the distribution of replacement expenditures over/between Phase 1 and the Phase 2 increment.
- c. Provide the cost of raw materials. Section 7.1.5.1, "Raw Materials", of the ER (IIFP, 2009a) does not present the cost of raw materials, other than they are "low."
- d. Provide the utilities cost for Phase 1 and an incremental amount for Phase 2. Section 7.1.5.2, "Utilities," of the ER (IIFP, 2009a) presents costs for operations utilities. The text states that Phase 2 operations add significantly to Phase 1 utilities cost. The value of 2.5 to 3.5 million dollars per year is provided, but it is not clear for which phase this value applies.
- e. Provide sufficient data to quantify the sales and distribution annual costs for Phase 1 and Phase 2 increment. Section 7.1.5.3, "Selling and Distribution," of the ER (IIFP, 2009a) states, "The sales and distribution annual costs ... are estimated at 8% of the projected product cost." It is not clear what the value of the "projected product cost" is.
- f. Provide a breakdown of operations and maintenance materials costs for Phase 1 and Phase 2 increment. Section 7.1.5.4, "Operational and Maintenance Materials," of the ER (IIFP, 2009a) states that the average cost of maintenance materials and operating supplies are 3 to 4 million dollars annually, but the distinction between Phase 1 and Phase 2 is not clear.
- g. Clarify Phase 1 and Phase 2 incremental costs for waste disposal. Table 7-10, "Estimated Range of Annual Waste Disposal Costs," of the ER (IIFP, 2009a) presents the annual waste disposal costs for Phase 1 and Phase 2; but from the values, it seems that the Phase 2 column is the cumulative Phase 1 and 2 waste disposal costs. If the Phase 2 costs are cumulative of Phase 1 and 2, then so state.
- h. Provide 2010 market value per pound of each Fluorine Extraction Process product.

The information in Chapter 7, “Cost-Benefit Analysis,” of the ER (IIFP, 2009a) either needs clarification or additional data, as described above, to perform a quantitative assessment of costs and benefits in the EIS.

RAI 5

Provide clarifications and additional information regarding UO₂ shipments.

- a. Clarify the packaging and number of packages per shipment for UO₂ byproduct material. Section 3.2.2.2, “Facility Operation Phase,” of the ER (IIFP, 2009a) states that low-level radioactive waste (LLW) will be shipped in 55-gallon drums, with 20-25 drums per shipment. State whether these drums will contain the UO₂ byproduct from the deconversion process, and whether the LLW discussed in Section 3.2.2.2 “Facility Operation Phase” is the UO₂ byproducts from the deconversion process. If not, describe the packaging and truck loading for UO₂; and describe the material that is considered LLW referred to in Section 3.2.2.2, “Facility Operation Phase.”
- b. Provide the radionuclide inventory (in curies) of each package of UO₂ and the expected dose rate at contact, 1 meter, and 2 meters.
- c. Clarify the number of shipments of UO₂. The ER, Table 4-4, “Annual Incident-Free Transportation Radiological Dose to the Public and Worker,” states that there will be 450 shipments of uranium oxide and miscellaneous LLW.
- d. Clarify if each of the 450 shipments contains 20-25 drums of UO₂ per shipment.
- e. Describe the shipment of “miscellaneous LLW” in terms of types of packages, number of packages, and curie content.

The ER (IIFP, 2009a) provides scaled information from other analyses, but it does not present sufficiently detailed information for a project-specific analysis. The requested data above are necessary to perform a radiological consequence analysis with the computer code, RADTRAN, for the IIFP project in order to assess the associated transportation impacts in the EIS.

RAI 6

Provide the radionuclide inventory of an “empty” DUF₆ cylinder.

Table 4-4, “Annual Incident-Free Transportation Radiological Dose to the Public and Worker,” of the ER (IIFP, 2009a) refers to 789 shipments of empty DUF₆ cylinders. It is expected that these empty cylinders would contain a heel comprised of nonvolatile uranium progeny and possibly some non-sublimated DUF₆. The curie content of these progeny would be considerably less than the heel described in Table D-1 of the Louisiana Energy Services’s EIS (NRC, 2005), which represents an enriched heel. The ER does not provide the radionuclide inventory of an empty cylinder and, thus, does not present sufficiently detailed information for a project-specific analysis. The requested data are necessary to perform a radiological consequence analysis with the computer code RADTRAN for the IIFP project in order to assess the associated transportation impacts in the EIS.

RAI 7

Provide information regarding hydrogen generation to support the description of the proposed action.

- a. Describe how hydrogen would be generated for use in the deconversion processes.
- b. Provide the production capacity of the hydrogen plant and the demand for hydrogen.
- c. State the hydrogen storage capacity.
- d. State whether the provided natural gas demand includes the demand for generation of hydrogen. If not, provide the amount of natural gas required for hydrogen generation.

The ER (IIFP, 2009a) contains limited information on the source of a major reactant. This information is needed in order to completely describe the proposed action within the EIS.

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.
- b. Describe how the onsite fueling of gasoline and diesel vehicles will take place.
- c. Provide air impact analysis for the fuel storage and dispensing activities.

The requested air emissions and refueling information is needed to properly assess the impacts to air quality during construction.

RAI 9

Provide additional information regarding air emissions during the operation of the IIFP facility.

- a. Describe representative capacity (make and models if available) of the gas-fired boilers to be used at the facility and the source of the data used to estimate the boiler emissions.
- b. Describe representative make and models of the diesel generators to be used at the facility, estimate the hours per year that the generators will be in use, and provide the source of the data used to estimate the generator emissions.

- 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.
- d. Provide the stack parameter assumptions such as stack height(s), stack diameter, gas exit velocity, and stack gas exit temperature.
- e. Provide the five years (1987 to 1991) of hourly meteorological data from the Midland-Odessa, Texas, National Weather Service (NWS) station that were used in the ER.

The requested information is needed to properly assess the impacts to air quality during operation. Section 4.6, "Air Quality Impacts," of the ER (IIFP, 2009a) contains much information on air dispersion coefficients and current annual emissions for the 50 mile radius. However, the ER does not include information on the plant boilers or diesel generators, or on the annual emissions expected from plant operations. In addition, the ER does not contain information on modeling input assumptions or stack parameter assumptions, and the meteorological data used for the ER (Midland-Odessa) or another NWS weather station have not been provided.

RAI 10

Provide additional information regarding accident analyses.

Describe how the release rates required to exceed consequence levels at the IIFP facility boundary are determined from the Goode (1995) paper referenced in Section 4.1.2, "Consequence Analysis" of the IIFP Integrated Safety Analysis (ISA) Summary, (IIFP, 2009b).

This information is needed to evaluate the IIFP analysis so that accidents can be presented in the NRC's EIS. Neither the ER nor the ISA provide this information.

RAI 11

Provide additional information regarding groundwater.

- a. Provide information about the existing site groundwater monitoring well network and indicate whether a baseline groundwater quality assessment will be established. Clarify what role, if any, the Cunningham Plant monitoring wells, mentioned in the ER, Section 3.1.2, "Description of Off-site Areas," will play in the groundwater assessment. Specify whether the following information is available for review onsite or can be submitted for reference:
 - location of existing groundwater monitoring wells,
 - New Mexico well registry numbers,
 - well capacity (gpm),
 - well depths,
 - groundwater quality data, and

- any other relevant available information.
- b. Describe the proposed site groundwater monitoring well network to include information on well locations, total depths, and well capacity (gpm).
 - c. Describe the proposed site groundwater production wells to include well locations, total depths, and peak and average pumping rates (gpm), and annual maximum groundwater use.

This information is needed in order to analyze local and regional groundwater resources to provide sufficient detail for inclusion in the EIS.

RAI 12

Provide copies of the IIFP site land surveys.

Information from surveys is necessary to accurately depict the site in figures and to provide a centroid for demography, environmental justice, air impacts, accident impacts, and monitoring.

RAI 13

Provide additional information regarding employment.

- a. Provide preconstruction/construction and operations employment curves so the peak number of employees and the date that peak is anticipated can be determined.
- b. Provide anticipated annualized wage (gross payments to employee, not total payroll costs, which would include benefits or overhead) for the average Phase 1 construction workforce employee (not by job category).
- c. Identify when Phase 1 operations workers will arrive onsite (by month and year), total operations workforce (preferably a specific estimated number, not a range), and number of workers that will overlap with the construction workforce for Phase 1. Include an employment curve so the peak number of operations employees and the date that peak is anticipated can be determined.
- d. Provide an estimate of the peak workforce (i.e., an estimated number, rather than a range is needed to assess resources impacts in the ER) for Phase 2 construction only, the anticipated Phase 2 construction start date (month and year), and the duration of this construction phase workforce onsite (from month and year to month and year). Include an employment curve so the peak number of employees and the date that peak is anticipated can be determined.
- e. Provide anticipated annualized wage (without benefits or overhead) for the average Phase 2 construction workforce employee (not by job category).
- f. Identify when Phase 2 operations workers will arrive onsite (by month and year), total operations Phase 2 workforce (specific number, not a range), and number that will

overlap with the construction workforce of Phase 2 and the operations workforce of Phase 1. Provide an employment curve so the peak number of employees and the date that peak is anticipated can be determined.

The information is needed to determine the maximum impact, as driven by an increase in the region-of-interest population, to specific socioeconomic resources. Determining the approximate out-migration/work assignment completion dates influences the impacts of reduced dependency on some socioeconomic resources (housing and public education for example).

RAI 14

Provide reports of ecological field studies.

It is our understanding that IIFP is conducting seasonal ecological surveys of the site over a one-year period. Provide any reports generated by these surveys. Information from trip reports or quarterly summaries is necessary to ensure complete and accurate ecology descriptions within the EIS. Given that the studies would continue to be conducted after the Draft EIS is completed, interim reports are important.

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.

It is our understanding that IIFP may submit a jurisdictional wetlands determination application for the depressional areas that appeared to support some hydrophytic vegetation. During the NRC site visit on July 27, 2010, the NRC staff noted one depression had standing water.

RAI 16

Provide additional information regarding ambient noise level monitoring results mentioned in the ER.

It is our understanding that IIFP is conducting noise level readings at the corners of the site to document existing conditions. The results of those measurements and survey report are needed in order to document the existing baseline noise at the site for the Affected Environment section of the EIS.

RAI 17

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

IIFP is preparing applications and requesting permits as described in the schedule presented in Table 1-4, "Required Federal and State Permits", of the ER (IIFP, 2009a). An update of the permit status since submittal of the ER in December 2009 is necessary to ensure accurate information in the EIS. Because the ER describes some permits as potentially unnecessary,

this updated information is needed to ensure that extraneous information is not included in the EIS. Also provide a copy of the New Mexico Office of State Engineer Water Rights Permit for inclusion in the EIS. If the permit has not yet been received, provide a copy of the Water Rights Permit Application.

RAI 18

Provide status of the radiological monitoring plan described in the “Radiological Monitoring,” Section 6.1 of the ER.

Provide any updates which have been implemented to the facilities radiological monitoring requirements as a result of discussions with State and local officials. This information is necessary to address public comments in the EIS.

RAI 19

Provide full citations of references listed in the “Ecological Resources,” Section 3.5 of the ER but not identified in the “List of References” Chapter 9 of the ER.

The following references are cited in Section 3.5, “Ecological Resources”, but not cited in Section 9, “List of References,” of the ER (IIFP, 2009a): Painter (2004), CBD (2002), CBD (2009), and USFWS (2008). Therefore, provide either the reference itself or the complete citation for these references. If any references in Section 3.5 are extraneous and not needed, then please indicate this fact.

RAI 20

Provide additional information on construction wastes and operations wastes.

- a. Provide estimated quantities for construction wastes separately for Phase 1 and Phase 2. Section 3.12.2.1, “Construction Wastes,” of the ER (IIFP, 2009a) provides a non-quantitative description of construction wastes. Include in the estimates the annual waste generation for each waste type and the total amount of construction waste by type for each phase. Section 4.2.4.2, “Construction,” of the ER (IIFP, 2009a) provides an estimate for the number of roundtrips due to construction materials deliveries and waste shipments. This implies that detailed estimates for waste generation are available.
- b. Clarify the total Phase 1 and Phase 2 column entry for Resource Conservation and Recovery Act (RCRA) operation waste in Table 3-55, “Estimated Annual Quantities of Waste Generated at the IIFP Facility,” of the ER (IIFP, 2009a). The range of RCRA waste reported for both phases is 45,500 lbs to 174,000 lbs, which is less than the range reported for Phase 1 which is 32,300 lbs to 361,500 lbs. Please clarify.

Additional detailed information on waste volumes, as described above, is necessary to fully evaluate potential environmental impacts associated with waste generation and disposal. Also, clarification is necessary in Table 3-55, as described above, because for the upper range limit of RCRA waste quantities, the Table shows more waste for Phase 1 than for “Total for Phase 1 and Phase 2.”

RAI 21

Provide additional information regarding past land use of the project area that may have already been collected by IIFP.

- a. Provide any information that has been collected on non-developmental human use, such as cattle grazing. Include, if available, property research results and informant interview memoranda.
- b. Provide available information concerning previous development for oil/gas and other energy infrastructure such as exploratory wells, abandoned oil/gas exploration infrastructure, and gas and power line rights-of-ways.

This information is necessary in order to document past land uses/activities that have taken place in the project area and also to evaluate the potential for historic and cultural resources within the project area. The Phase I Environmental Site Assessment documents past development through historic aerial photographs. These photographs document that the project area has been largely undeveloped, but do not document human use that would not be considered “development,” such as extensive use of the area as rangeland for cattle. Although it is not required in the negative survey report that was prepared by the archaeological consultant, this information may have been gathered through property research or informant interviews.

RAI 22

Provide support for the ER claim of better than industry average occupational safety statistics.

For example, IIFP could provide the last 5 years of Occupational Safety and Health Administration reports for an IIFP facility that does comparable work.

The discussion of worker safety in Section 3.11.2.1 of the ER (IIFP, 2009a) does not provide details to support the claim of better than industry average.

RAI 23

Provide clarifications on mitigation measures.

Separate the mitigation measures proposed in Sections 5.2.3, “Geology and Soils,” 5.2.4, “Water Resources,” 5.2.5, “Ecological Resources,” and 5.2.6, “Air Impacts” into those that would be implemented during the project’s pre-construction/construction and during operations. The text in these sections describes the mitigation measures listed as being in place to minimize impacts during construction or operations. However, it is not always clear at which time a specific mitigation will be implemented. For example, in Section 5.2.3, one mitigation measure

that “will be in place during pre-licensing and general construction, operations, and decommissioning” is described as “Berms will be utilized and Spill Prevention Control and Countermeasures Plan will be implemented.”

It is reasonable that a Spill Prevention Control and Countermeasures (SPCC) Plan will be implemented during construction to mitigate fuel or similar liquid spills; however, in Section 5.2.13, “Waste Management,” IIFP states that “a Spill Prevention Control and Countermeasures Plan will be prepared prior to the start of operation of the facility or prior to the storage of oil on site....” It is not clear when reading Sections 5.2.3 and 5.2.13 if the SPCC Plan will be in place during pre-construction and construction, as well as during operations. As written in the ER, the proposed mitigations cannot always be associated with a specific project activity.

RAI 24

Verify the distance to the nearest residence from the proposed IIFP facility.

The ER (IIFP, 2009a) in Section 1.3.3, “The Proposed Site,” states that the nearest residence is 8.5 km (5.3 miles) from the northern boundary of the site. Local maps appear to indicate the nearest residence could be approximately 1 mile from the northwest corner of the site. Accurate information about the distance to residences is needed to fully assess potential impacts to those residences.

References:

- IIFP 2009a International Isotopes Fluorine Products 2009. *Fluorine Extraction Process and Depleted Uranium De-conversion Plant (FEP/DUP) Environmental Report*, Revision A, ER-IFP-001, Revision A, December 27, 2009.
- IIFP 2009b International Isotopes Fluorine Products, Inc. 2009. *Fluorine Extraction Process & Depleted Uranium De-conversion Plant (FEP/DUP) Integrated Safety Analysis Summary*, Revision A, December 23, 2009.
- NRC 2005 U.S. Nuclear Regulatory Commission 2005. *Environmental Impact Statement for the Proposed National Enrichment Facility in Lea County, New Mexico*, NUREG-1790, Final Report.