

April 26, 2010

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

SUBJECT: APRIL 12, 2010, TELEPHONE CONFERENCE SUMMARY TO  
DISCUSS SEISMIC AND STRUCTURAL ISSUES RELATING TO  
THE INTERNATIONAL ISOTOPES APPLICATION FOR A  
DECONVERSION FACILITY (TAC NO. L32739)

The U.S. Nuclear Regulatory Commission (NRC) held a conference call between representatives from the Center for Nuclear Waste Regulatory Analyses (Center) at the Southwest Research Institute, the Office of Research, International Isotopes Inc., and their contractor on April 12, 2010. The call was to discuss eight talking points which the NRC provided to the applicant regarding the seismic and structural review. The goal of the meeting was to ensure International Isotopes Fluorine Products, Inc. (IIFP) was aware of the level of information needed by the NRC to complete the review and obtain feedback from the applicant on the availability of additional information.

The conference call provided clarification on the information available from IIFP and provided a time frame for obtaining additional information. The IIFP indicated several of the topics discussed in the talking points required further site characterization and development of the detailed plant design. The information would become available in the late summer and fall of 2010 and would be provided to the NRC in response to Requests for Additional Information (RAIs). In the mean time, the IIFP indicated they would be able to compile and submit the criteria used for the design basis and conceptual information needed to address RAIs. In addition, IIFP agreed to provide the NRC periodic updates on the status of the design development, site characterizations, and seismic evaluation as these progressed.

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The NRC plans to provide the applicant draft RAIs which incorporate the talking points discussed in the call. Although the detailed facility design may continue throughout the summer, both the NRC and IIFP agreed that information on design methodology, conceptual information, and criteria would be useful for advancing the review.

Enclosure 1 provides a list of individuals who participated in the telephone conference. Enclosure 2 contains a list of the talking points that the staff provided to IIFP and a summary of the telephone discussion.

Docket No.: 40-9086

Enclosures:

As stated

cc w/enclosures:

John J. Miller, CHP

4137 Commerce Circle

Idaho Falls, ID 83401

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<b>NAME</b>	MBartlett	LAllen	THiltz
<b>DATE</b>	4/19/10	4/21/10	4/26/10

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**LIST OF PARTICIPANTS FOR TELEPHONE CONFERENCE TO DISCUSS  
INTERNATIONAL ISOTOPES FLUORINE PRODUCTS, INC.  
PROPOSED DECONVERSION FACILITY**

April 12, 2010

NAME

AFFILIATION

Mita Sircar	U.S. Nuclear Regulatory Commission (NRC) – Research
Herman Graves	NRC – Research
Matt Bartlett	NRC – NMSS
John Stamatkos	Center for Nuclear Waste Regulatory Analyses (Center)
Asad Chowdhury	Center
Simon Hsiung	Center
John Miller	International Isotopes Fluorine Products, Inc. (IIFP)
Jim Thomas	IIFP Contractor
Gary Hollins	IIFP Contractor

**TALKING POINTS FOR SEISMIC AND STRUCTURAL TECHNICAL REVIEW  
REGARDING THE INTERNATIONAL ISOTOPES FLUORINE PRODUCTS, INC.  
DECONVERSION FACILITY**

1. Characterize the following hazards at the annual probability of  $10^{-5}$  (highly unlikely): Tornado, wind, snow, flood, and aircraft crash [added rain during conference call].

The applicant indicated that the information could be drawn from the Probability Hazard Analysis and submitted to the U.S. Nuclear Regulatory Commission (NRC). However, seismic review would require local site evaluations which would be conducted once the property was deeded to International Isotopes Fluorine Products, Inc. (IIFP). Information in the application on seismic hazards is based on estimates which must be confirmed by further site characterization. The applicant agreed to provide NRC the status of the work to address the Requests for Additional Information (RAIs) as their geotechnical, geophysical, and site work progresses over the summer. The full information should be available by the fall of 2010. The NRC Project Manager indicated this submittal date may impact the review schedule.

2. Discuss the potential hazards due to (i) industrial and military facilities, (ii) gas pipelines, and (iii) transportation routes per Regulatory Guide 1.91.

Additional information on industrial and military facilities and transportation is available and can be provided. The applicant plans to conduct surveys to identify the onsite utility and gas lines after the land acquisition and will submit the necessary information to NRC when available. The applicant stated that they have the information about the transportation route and hazardous material data in relation to RG 1.91 and will provide those to NRC in response to the RAIs.

3. Characterize site geotechnical medium, including soil settlement and allowable bearing capacity for design, and assess liquefaction potential at the site.

The applicant has chosen to use the 2,500-year return period ground motions from the United States Geological Survey (USGS) national seismic hazard maps as the bases for seismic design. The technical bases for selecting a 2,500-year return period ground motions is the risk-graded approach for nuclear facilities described in DOE-1020. In addition, the applicant asserts that the USGS 2,500-year ground motions are conservative compared to design ground motions used for nearby Louisiana Energy Services and Waste Isolation Pilot Plant facilities. However, NRC noted that IIFP needs to confirm that these assumptions are conservative, especially given the potential for local soil conditions to amplify ground motions. IIFP anticipates they will have a civil contractor in place in early summer of 2010 to conduct both geotechnical and geophysical characterization of the site. The geotechnical and geophysical investigation activities are expected to start in June with a report prepared in August. This time frame could impact the review schedule.

4. Demonstrate that the seismic hazard bounds all other hazards at the site for the design of Process Buildings, including providing information on load combinations.

Items 4 and 8 were combined with item 1 above.

The applicant stated that they plan to develop the site-specific seismic response spectra and then prepare the comparison with other natural phenomena hazards to demonstrate the bounding hazard. This work can be done after the geotechnical study, which is scheduled to be conducted over the summer of 2010.

5. Provide a description of the method used for the structural analyses of Process Buildings with emphasis on seismic analysis, including modeling methodology and computer codes used.

The applicant stated that these issues will be decided after they finalize a contract with an engineering firm tentatively late fall of 2010. NRC expressed that a face-to-face meeting with the applicant's technical staff may help to understand and clarify these issues.

The applicant agreed to provide additional information on the design methodology used for the seismic analysis. The applicant is evaluating the level of detail regarding the design methodology and computer codes to incorporate into the application. NRC agreed that details were not needed in the application, but the applicant should provide sufficient information to assess the reasonableness of its analysis methodology.

6. Provide information about the structural and foundation design of Process Buildings with emphasis on seismic design.

Items 6 and 7 were grouped (see 7).

7. Provide facility site plan and horizontal and vertical cross-sectional drawings of the conceptual structural design of Process Buildings.

The applicant indicated that the information requested in 6 and 7 would not be available until the detailed design is underway in the fall of 2010. The NRC stated that details of the design (exact size/location of the members) are not required for the review. However, an overview of the design criteria, e.g., overall structural arrangement, load transfer path, interaction of the structures/foundations with equipment, and major components would enable the reviewers to proceed to assess the reasonableness of the facility design. The applicant indicated this information should be available before completion of the detailed design.

8. Determine the effects of building collapse resulting from a ground motion corresponding to an annual probability of  $10^{-5}$  on consequences.

Item 8 was grouped with the seismic issues in items 1 and 4.

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The applicant intends to determine the effects of ground motion in accordance with DOE-STD-1020. However, the applicant also pointed out the consideration of items relied on for safety, prevention techniques, and consequence analysis would be used to justify the annual probability. (Note: Another approach that may be considered is the methods outlined in the American Society of Civil Engineers 43-05.)

The applicant indicated they would provide a schedule of their planned activities for geotechnical, geophysical, site-specific seismic response spectra, and site work planning – along with a periodic update on the status of the studies.