March 06, 2006 CCN 204443

Ms. Margaret M. Doane, Deputy Director
Office of International Programs, MS 4E21
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852 - 2738

SUBJECT: Request to Import Gammacell 220 Source in Support of Department of Energy Work

Dear Ms. Doane:

As required by 10 CFR 110, the Battelle Energy Alliance LLC. (BEA) would like to apply for a license to import a Canadian manufactured Gammacell 220 to support work for the U.S. Department of Energy here at the Idaho National Laboratory.

The following information is provided in accordance with 10 CFR 110.32:

Name and Address of Applicant: Battelle Energy Alliance, LLC. (BEA)
Idaho National Laboratory
2525 North Freemont Avenue
Idaho Falls, ID 83415

Name and Address of Supplier: MDS Nordion
447 March Road
Ottawa, Ontario
K2K 1X8
Canada

Country of Origin and Origination: Canada

Intermediate Consignee: None

Ultimate Consignee: Battelle Energy Alliance, LLC. (BEA)
Idaho National Laboratory
Materials and Fuels Complex, FASB Building
Scoville, ID 83415

Dates of Proposed Shipment: [redacted]

Description of Material: Radionuclide – Co^{60}
Activity – [redacted]
Chemical Form – Element
Physical Form – Solid

End Use: In order to expand the research capabilities of the Idaho National Laboratory, the Aqueous Separations and Radiochemistry group is requesting procurement of a state-of-the-art gamma irradiator. A gamma irradiator is used to study the interaction of gamma radiation with materials and to quantify the effects of gamma radiolysis on those materials. Acquisition of a [redacted] gamma irradiator system will directly support the strategic goals of the Laboratory. In particular, this system will provide the technical infrastructure necessary to enable state-of-the-art research on the effects of high dose rate gamma radiation on variety of problems ranging from materials integrity to hydrogen production.

The Aqueous Separations and Radiochemistry is involved in developing state-of-the-art separations technologies for application to a wide array of separations challenges. A major area of research is the development of advanced aqueous solvent extraction technologies for the treatment of spent nuclear fuel and other radioactive nuclear wastes. The gamma irradiator would provide the capability of evaluating the long-term stability of the reprocessing technologies under realistic gamma radiolysis conditions, thus facilitating the development and demonstration of advanced fuel cycle systems. In addition, the effects of gamma radiolysis on any number of new, innovative materials may be evaluated with a high dose-rate gamma irradiator. This may lead to the development of new methods for the production of hydrogen gas, which would directly support the Laboratory's mission to develop new science and engineering solutions in support of the nation's critical infrastructure. A high dose-rate gamma irradiator would also help establish and strengthen collaborations between the Laboratory and other national and international research partners.

Applicant's Authorization: BEA is the M&O Contractor for the Department of Energy under Contract Number DE-AC07-05ID14517. A copy of the letter certifying this is attached.

If additional information is required, please contact the undersigned at (208) 526-3957.

Sincerely,

Vernon Robert Kubiak, Empowered Official
Export Compliance and Licensing

Attachments

1. Remittance for Application for License
2. Copy of Contract No. DE-AC07-05ID14517 – Authorization to Transport and Receive Radioactive Material Shipments
3. Gammacell 220 Brochure from MDS Nordion

cc: D.E. Coburn, INL, MS 3406 (w/o Att.)
J. J. Grossenbacher, INL, MS 3695 (w/o Att.)
L. A. Sehlke, INL, MS 3810 (w/o Att.)