



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001


February 11, 1997

MEMORANDUM TO: Charles W. Hehl, Director
Division of Nuclear Materials Safety, RI

Bruce S. Mallett, Director
Division of Nuclear Materials Safety, RII

Cynthia D. Pederson, Director
Division of Nuclear Materials Safety, RIII

Ross A. Scarano, Director
Division of Nuclear Materials Safety, RIV

FROM: Donald A. Cool, Director
Division of Industrial and
Medical Nuclear Safety, NMSS 

SUBJECT: REQUEST FOR AMBE SOURCES AS POTENTIAL
CANDIDATES FOR THE DEPARTMENT OF ENERGY'S
NEUTRON SOURCE RECYCLING PILOT PROGRAM

The Department of Energy (DOE), through its contractor Los Alamos National Laboratory (LANL), supports a transuranic neutron source recycling program. Currently, this program includes certain plutonium/beryllium sources that may be received by LANL on a routine basis, and americium/beryllium (AmBe) sources that are received through an emergency DOE pickup (via an NRC request to DOE, or a request made directly to a DOE RAP team). This program is intended only for sources that exceed the Greater Than Class C (GTCC) limits of 10 CFR Part 61, and is not intended for material that would generally be accepted at a commercial disposal facility. Presently, AmBe sources cannot be received under this program on a routine or non-emergency basis, but only in cases where there is a clearly established radiological health and safety risk to the public (see Policy and Guidance Directive (P&GD) 9-12, for more information on acceptance criteria).

NRC is aware that there is an ever increasing need for DOE to provide for the routine disposal of GTCC material, and has asked DOE to consider expanding its recycling program to include additional isotopes, including AmBe. DOE has indicated that it is pursuing approval and funding for an expanded program, for the routine acceptance of neutron sealed sources. The initial phase of this expansion would include a pilot program, where a limited number (30 - 50) of certain AmBe sources would be accepted. The full details of the expanded program are not known at this time. However, DOE has requested, through this office, that NRC provide a list of potential candidates for the pilot program.

CONTACT: Douglas Broadus, NMSS/IMNS
(301) 415-5847

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and that only the potential candidates with the highest level of health and safety concern, as determined by NRC, be included in the listing. In addition, DOE has indicated that candidates selected for the pilot program would likely be expected to provide for the transport of their material to a site specified by DOE.

In support of the pilot program, regional offices are requested to provide a list of AmBe source(s) currently possessed by a licensee, for which there is concern that the source(s) may pose a radiological risk to public health and safety, and for which the licensee wishes to dispose of the material, but is unable to do so. Attachment 1 contains guidance for determining potential candidates for the pilot program, and for the types of information needed to support DOE's request.

In order to assist with the identification of potential candidates for the pilot program, a listing of licensees that were identified as wishing to dispose of their GTCC material in a 1989 survey is included as Attachment 2. However, this list has not been updated.

It should be noted that concurrent with its request to NRC, DOE requested the Council of Radiation Control Program Directors (CRCPD) to generate a similar listing of potential candidates from Agreement State licensees or other interested parties. In support of DOE's request, the CRCPD has requested all Radioactive Material Licensing Offices, and Radioactive Material Brokers, to submit to it lists of potential candidates for the pilot program. Regional offices should not respond to the CRCPD request, but should respond to headquarters instead. If Agreement State Program Offices contact the regional offices with potential candidates for the pilot program, they should be directed to respond to the CRCPD.

Region IV, Division of Nuclear Material Safety, had previously provided nominees for the pilot program to headquarters, based on the CRCPD request. We would request that Region IV review that list, and determine if additional information -- as described in Attachment 1 -- should be provided concerning these nominees.

Lists should be provided to Doug Broaddus (mail stop T8F5), no later than March 21, 1997.

Attachments: As stated (2)

Distribution:

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GUIDANCE FOR THE DETERMINATION OF POTENTIAL CANDIDATES FOR THE DOE PILOT AmBe RECYCLING PROGRAM:

In general, the guidance contained in P&GD 9-12 may be used to assist in the determination of potential candidates and their priority for the pilot program. It is expected that regional personnel will identify potential candidates based on their experience and knowledge of licensees who may be of concern or a risk rather than through an exhaustive study of all licensees to determine acceptability. In addition, regional personnel should use their knowledge of a particular licensee and the licensee's current situation and future outlook to make a judgement as to the level of priority to be assigned to a potential candidate. When considering potential candidates, regional personnel should keep in mind that candidates for the pilot program should (at a minimum) be financially able to provide for the transport of the material to a site of DOE's choosing, and there should be no imminent threat of loss-of-control of the material or potential for significant exposures to members of the public. Potential candidates meeting any of the following criteria should not be considered for the pilot program:

- Sources that would be accepted by a commercial disposal facility.
- Licensees who have options available to divest themselves of the source(s) and are able (financially or otherwise) to do so.
- Sources that have been determined to meet the criteria contained in P&GD 9-12 for emergency assistance by DOE. Regional personnel should continue to make requests for these sources in accordance with P&GD 9-12.
- Unlicensed or abandoned sources. Inspection Manual Chapter 1301 provides guidance on these situations.
- Unsealed or leaking sources.
- Sources containing isotopes other than Am-241.
- Sources that are currently being used by the licensee.
- Licensees who are unable to provide the costs for packaging and transport of the material to a DOE specified site.

The list should be prioritized, if possible, from highest to lowest concern and contain as much of the following information as possible:

- The name and address of the licensee.
- A point of contact for the licensee (familiar with the sources and their current condition) and phone number.
- A brief justification as to why the material is a concern. When determining the priority of concern, regional personnel should consider the future potential for loss-of-control of the material and exposures to members of the public, with higher potential for loss-of-control and exposures to members of the public indicating a higher priority.

- A description or identification of the source(s) (e.g., model and serial number, isotope, activity, condition, shipping containers available, etc.). Enclosure 1 of P&GD 9-12 may be used as a guide for the type of information needed to describe the sources and their condition.
- A brief description of the actions the licensee has taken to divest itself of the material.
- Most recent leak test results (within 6 months if available).
- Any additional information that may be relevant to DOE accepting the material.

LICENSE NO.: ND3301376-01
TWIN CITY TESTING CORP.
622 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE: (612) 641-9327 EXT:
MODEL: 3216
DEVICE MANUFACTURER: TROXLER INC.
ISOTOPE: AM241 40.000 MCI
LICENSEE COMMENTS:

LICENSE NO.: ND3301376-01
TWIN CITY TESTING CORP.
622 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE: (612) 641-9327 EXT:
MODEL: 2401
DEVICE MANUFACTURER: TROXLER INC.
ISOTOPE: AM241 50.000 MCI
LICENSEE COMMENTS:

LICENSE NO.: ND3301376-01
TWIN CITY TESTING CORP.
622 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE: (612) 641-9327 EXT:
MODEL: 3241
DEVICE MANUFACTURER: TROXLER INC.
ISOTOPE: AM241 100.000 MCI
LICENSEE COMMENTS:

LICENSE NO.: 37-185-4
PENN STATE UNIVERSITY
228 ACADMEIC PROJECTS BLDG
UNIVERSITY PARK, PA 16802
PHONE: (814) 865-3459 EXT:
MODEL: AMN.PE1
SOURCE MANUFACTURER: AMERSHAM CORP.
ISOTOPE: AM241 98.500 MCI
LICENSEE COMMENTS: DOE HAS TAKEN SOME PU SOURCES, NOT ABLE TO
RETURN AM241, NO MARKET FOR USED

LICENSE NO.: 37-185-4
PENN STATE UNIVERSITY
228 ACADMEIC PROJECTS BLDG
UNIVERSITY PARK, PA 16802
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*Data obtained from 1989 survey.

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LICENSE NO.: SNM-142
 PURDUE UNIVERSITY

W. LAFAYETTE, IN 47907
 PHONE: (317) 494-2350 EXT:
 MODEL: 105-217
 DEVICE MANUFACTURER: TROXLER INC.
 ISOTOPE: AM241 100.000 MCI
 LICENSEE COMMENTS: STORAGE UNTIL SITE FOR DISPOSAL IS AVAILABLE

LICENSE NO.: SNM-142
 PURDUE UNIVERSITY

W. LAFAYETTE, IN 47907
 PHONE: (317) 494-2350 EXT:
 MODEL: 105A/S6-AS
 DEVICE MANUFACTURER: TROXLER INC.
 ISOTOPE: AM241 100.000 MCI
 LICENSEE COMMENTS: STORAGE UNTIL SITE FOR DISPOSAL IS AVAILABLE

LICENSE NO.: SNM-142
 PURDUE UNIVERSITY

W. LAFAYETTE, IN 47907
 PHONE: (317) 494-2350 EXT:
 MODEL: 104
 DEVICE MANUFACTURER: TROXLER INC.
 ISOTOPE: AM241 100.000 MCI
 LICENSEE COMMENTS: STORAGE UNTIL SITE FOR DISPOSAL IS AVAILABLE

LICENSE NO.: SNM-142
PURDUE UNIVERSITY

W. LAFAYETTE, IN 47907
PHONE: (317) 494-2350 EXT:
MODEL: 1255
DEVICE MANUFACTURER: TROXLER INC.
ISOTOPE: AM241 100.000 MCI
LICENSEE COMMENTS: STORAGE UNTIL SITE FOR DISPOSAL IS AVAILABLE

LICENSE NO.: 50-18441-01
ATLANTIC RICHFIELD CO.
P.O. BOX 100360
ANCHORAGE, AK 99510
PHONE: (907) 276-1215 EXT:
MODEL: AN-HP
SOURCE MANUFACTURER: NSSI
ISOTOPE: AM241 4.500 CI
LICENSEE COMMENTS: NSSI WANT \$20,000 PER SOURCE, TEXAS NUCLEAR
WNATS \$5,000 PER SOURCE

LICENSE NO.: 50-18441-01
ATLANTIC RICHFIELD CO.
P.O. BOX 100360
ANCHORAGE, AK 99510
PHONE: (907) 276-1215 EXT:
MODEL: AN-HP
SOURCE MANUFACTURER: NSSI
ISOTOPE: AM241 4.500 CI
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PHONE: (907) 276-1215 EXT:
MODEL: AN-HP
SOURCE MANUFACTURER: NSSI
ISOTOPE: AM241 4.500 CI
LICENSEE COMMENTS: NSSI WANT \$20,000 PER SOURCE, TEXAS NUCLEAR
WNATS \$5,000 PER SOURCE

LICENSE NO.: 05-26899-01
COLORADO GEOLOGIC INC.
12395 W. 53RD AVE.
ARVADA, CO 80002
PHONE: (303) 278-2418 EXT:
MODEL: CPN-131
SOURCE MANUFACTURER: CPN
ISOTOPE: AM241 50.000 MCI
LICENSEE COMMENTS: TRANSFERED TO GEOTECHNICAL IN COLORADIO

LICENSE NO.: 47-14862-01
B.C. INDUSTRIES, INC.

MORGANTOWN, WV 43906
PHONE: (304) 291-6210 EXT:
MODEL: AM.15
SOURCE MANUFACTURER: AMERSHAM CORP.
ISOTOPE: AM241 30.000 MCI
LICENSEE COMMENTS: U.S. ECOLOGY NUCLEAR

LICENSE NO.: 47-14862-01
B.C. INDUSTRIES, INC.

MORGANTOWN, WV 43906
PHONE: (304) 291-6210 EXT:
MODEL: AM.15
SOURCE MANUFACTURER: AMERSHAM CORP.
ISOTOPE: AM241 30.000 MCI
LICENSEE COMMENTS: U.S. ECOLOGY NUCLEAR

LICENSE NO.: 45-09475-30
VIRGINIA POLYTECHNIC INST.
TECH CENTER DRIVE
BLACKSBURG, VA 24061
PHONE: (703) 231-5364 EXT:
MODEL: 1-XRF
DEVICE MANUFACTURER: E.I. DUPONT
ISOTOPE: AM241 100.000 MCI
LICENSEE COMMENTS:

LICENSE NO.: 29-23449-01
BERGMAN HATTON ASSOCIATES
741 ALEXANDER ROAD
PRINCETON, PA 08540
PHONE: (609) 452-0580 EXT:
MODEL: 3411
DEVICE MANUFACTURER: TROXLER INC.
ISOTOPE: AM241 50.000 MCI
LICENSEE COMMENTS: