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U.S. NRC

Department of Energy
Washington, D.C. 20585

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EXPORT/IMPORT
AND
INTERNAT'L SFGROS

MEMORANDUM FOR Mr. Gerard Helfrich, State
Mr. Richard Williamson, ACDA
Mr. Marvin Peterson, NRC
Ms. Jeanne Nelson, Commerce
Major Emory Chase, Defense

SUBJECT: Request From Dravo Corporation to Provide Portable Uranium
Mill to the People's Republic of China

On August 21, 1979, the Department of Energy received a request pursuant to 10 CFR 810 from the Dravo Corporation in Denver, Colorado to provide its portable uranium mill to the People's Republic of China. This mill has the capacity to produce 1200 lbs of yellow cake per day if operated on a 24-hour shift basis. See the attached for a complete description of the mill. DOE's Office of Uranium Resources and Enrichment (URE) has reviewed the application and concluded that the mill uses conventional ore processing technology that is available from several other countries and that is well described in the public literature. The innovative aspect is the portability of the plant which allows it to be moved from minesite to minesite. Nonetheless, in view of foreign commercial availability of uranium milling technology, URE does not have a reason to deny the export of the Dravo mill.

DOE/ISA staff agree with the URE technical assessment, but notes the similarity of the Dravo Corporation request to a Fluor Corporation request to provide mining and milling assistance to the PRC. In this case, DOE staff believed the Fluor request should be approved, subject to the PRC assuring the United States that any material produced resulting from Fluor assistance would be used for peaceful purposes only and not for any nuclear explosive device or for research on, or development of any nuclear explosive device and that any material produced will be exported only under IAEA safeguards. State concurred in this position and the other Executive branch agencies and the NRC agreed with it.

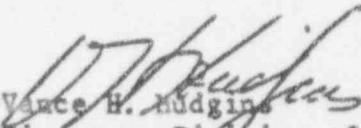
DOE/ISA staff believe the Dravo request is very similar to the Fluor application. Accordingly, we are preparing an Action Memorandum to the Secretary of Energy recommending that he make a determination that it will not be inimical to the interest of the United States for Dravo to provide a portable uranium mill to the PRC, subject to the PRC assuring the US that:

1. any material produced in the portable mill will be used for peaceful purposes only and not for any nuclear explosive device or for research on, or development of any nuclear explosive device; and

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2. any material produced in the portable mill will be exported only under IAEA safeguards.

This position is identical to that taken in the Fluor application. In view of this, we would appreciate it if you would expedite your review of this application.


Vance H. Huggins
Director, Division of Politico-
Military Security Affairs

Attachment:

Dravo

ACTION RAYMOND
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August 21, 1979

Department of Energy
Washington, DC 20585

Attention: Mr. Vance H. Hudgins, International Security Affairs

Subject: Portable Uranium Mill for People's Republic of China

Gentlemen:

In conformance with our recent telephone conversation, Dravo is interested in exporting a Dravo proprietary design portable uranium mill to the People's Republic of China. We would like to obtain assurances from your office that it will be permissible for us to do so within the meaning and intent of DOE's regulation 10 CFR, Part 810 entitled "unclassified activities in foreign atomic energy programs".

We have been in contact with the PRC uranium mining and metallurgical corporation under Second Ministry of Machine Building, and have generally described the mill, its capabilities and cost. The Chinese have told us that they would like to have us send representatives to Beijing for technical and commercial negotiations. We have told the Chinese that it will take in the order of ninety days to obtain an export license from our government. It will probably not be prudent for us to go to that expense before the export license is in hand.

In simple terms the plant can be described as:

Dravo has developed a proprietary design for processing ore mined by surface or underground mines. A three dimensional drawing is enclosed for your review (Dwg. MUM-000). The Portable Uranium Recovery Equipment (PURE) Mill has a nominal capacity of 300 short tons of ore per day. The grind, leach (acid) and solvent extraction circuits were designed to handle the crushed ore in a three shift operation to produce 1200 lbs. per day of yellowcake. The planned method of tailings disposal is backfilling into mined areas. The process water is recycled to the circuit.



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The PURE operation will require 17 persons and the time needed to move it to a prepared site is estimated at 10 days. Site preparation involves leveling and diking an area about 140 ft. square, which is covered with a 20 mil liner as protection against spills. Concrete is needed for minor footings, foundation for bins, and the slab for a building. The basic PURE facility includes:

1. PVC millsite liner, 20 mils.
2. Warehouse and shop building. (Not equipped with crane or bays)
3. Chemical type toilets (2)
4. Three cubic yard front end loader (2)
5. Potable water plant (50 gpm)
6. Boiler water treatment
7. Power plant, gas turbine, 480 V, 3Ø, 800 KW (Power plant supplies process steam and compressed air)
8. Trailer mounted units (11), with piping
9. Conveyors (4)
10. Bins (2)

Not included in the basic PURE facility are:

1. Fuel, acid and ammonia storage
2. Flat bed trailers for moving equipment that is not factory mounted on trailers
3. Spare parts
4. Shop tools and shop equipment

The current estimated capital cost of the basic PURE facility is \$4.0 million assembled and ready for delivery at Denver, Colorado. The direct operating cost for plateau-type ore is estimated at \$12 per ton, but may vary considerable according to individual reagent requirements.



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We feel that an export license should be granted because:

- Competing chemical processing technology is available from Canada, France Germany and Australia among others.
- Yellowcake production is neither complicated nor unobtainable from others and so it should not be a sensitive area of technology within the meaning of the cited regulation.
- This represents an excellent opportunity to assist with the redress of the U. S. Balance of payments problem.
- This type of technology export is in the best spirit of intent of the recently signed U. S. - China trade agreement.
- The contents of this letter should be held confidential by your agency, since it could tell our competitors where we expect to do business in the PRC.

It will be very much appreciated if you could assist in obtaining the necessary export license for Dravo to pursue this new business possibility in the PRC. If any clarification or supplemental information are required, we would appreciate your telephoning me in Denver at (303) 893-4742.

We await and thank you for any further advice and counsel you may care to offer.

Very truly yours,

William P. Lamb
Manager Business Development

WPL/mu

Enclosures