

Department of State

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6/25/54, 9:23 a.m.
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23-21
Action
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FROM: Bonn

Control: 11660
Rec'd: June 23, 1954
3:01 p.m.

TO: Secretary of State

NO: 4023, June 23, 6 p.m.

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SPECIAL ASSISTANT TO THE SECRETARY
S/AE

JUN 25 1954

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PRIORITY

MSB is considering an application No. 54/3/5 from Sartoriuswerke A.G. Goettingen for authorization to manufacture three gas centrifuges for National Research Council of Brazil. These centrifuges, allegedly desired for research purposes, are of recent design, having been developed by the Max Planck Institute, and are capable of separating isotopes of rare gases such as crypton and argon as well as uranium. Only two in the Federal Republic were installed at University of Hamburg in 1948.

Working principle described as follows: Gas is introduced into rotating cylinders through one of capillaries; when equilibrium attained, lighter components are sucked off through the axis, heavier ones by means of the capillaries at upper and lower ends.

Firm states that with a rotating cylinder of 9.4 radius, a temperature of 300 degrees K and a difference in mass of the components Delta M equals 1, the following separation factors, depending on number of rotations per minute, may theoretically be expected:

RPM	30,000	40,000	50,000
Queen	1,007	1,012	1,819

Hollow shaft of this centrifuge (45 CM long, 10 MM inner diameter) is made of chromium molybdenum steel and rotating cylinder (750 MM long, 200 MM diameter) of aluminum alloy called bondur. The bearings are made of bronze. Speed of rotation will be approximately 40,000 RPM.

This equipment is controlled under AHC Law No. 22 (amended), Article 1 Paragraph 1 (B) which prohibits "facilities capable of separating isotopes of uranium with a yield potential in excess of 1 MG of Q235 per 24 hours." In opinion of MSB this equipment can be licensed if output is less than 1 MG. British prepared to approve, having been advised by their experts that output of U235 per 24 hours would be only approximately 1 microgram. French experts are unable, however, to determine whether this device

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6/23/54 - 141 to RP Farrell/Ent. Paris de Janiers
141 to Robinson/Ent. Paris
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6/23/54 - 3 copy to Hall/arc
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-2- 4023, June 23, 6 p.m., from Bonn.

this device would produce more than critical amount. Matter is awaiting US view.

Brazilian Embassy has requested MSB to expedite consideration of application.

CONANT

LMS:BD/11

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