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SUSPENSE _____
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Remarks

Executive Secretary
25 May 84
Date

SECRET

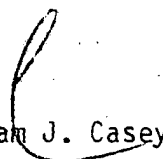
Executive Registry

84-2056/1

25 May 1984

MEMORANDUM FOR: Deputy Director for Intelligence
FROM: Director of Central Intelligence
SUBJECT: Your Remarks to National Strategic Materials
and Minerals Program Advisory Committee

I like your remarks to the National Strategic Materials and Minerals Program Advisory Committee. I think the portion on the risk of becoming vulnerable is particularly valuable and should be looked at in greater depth in a broad document and also in the document about opportunities abroad for US know-how and technology to be applied to demonstrate our ability to deliver economic benefits in contrast to the Soviets' ability to deliver only know-how and military equipment, as well as to improve our own markets to help Third World countries to service their heavy debt. I understand from Herb that this latter subject has been intended as a future estimate and I would like to see how that is being formulated again sometime early in June.



William J. Casey

cc: VC/NIC w/DDI's Remarks



DCI
EXEC
REG

25X

SECRET

22 May 1984

NOTE TO: Director of Central Intelligence
Deputy Director of Central Intelligence
Director, Public Affairs Office

I have been asked to stand in for the DCI on Friday at the opening meeting of Interior Secretary Clark's National Strategic Materials and Minerals Program Advisory Committee. I have been asked to speak on an unclassified basis to a sizable group of business executives and officials for about 10-15 minutes.

I plan to use the attached remarks which were prepared substantially by OGI. If you have any suggestions or comments please provide them to me first thing Thursday morning as I will be leaving town that afternoon.



Robert M. Gates
Deputy Director for Intelligence

Attachment:
As Stated

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**Remarks to the National Strategic Materials and Minerals
Program Advisory Committee**

25 May 1984

It is a pleasure to be present at the first meeting of this Presidential Advisory Committee. We at the Agency have learned over the years that private sector expertise has much to offer us. In looking down the membership list of this committee, I am struck by the breadth and depth of experience. That is indeed fortunate because the task before you is a challenging one.

We at the Agency are concerned as you over dangers posed by US dependence on foreign minerals and materials. Since World War II the mineral position of the United States has deteriorated. Rising nationalism in the Third World, accompanied by nationalization, expropriation, increased taxation and constraints on the degree of foreign ownership, has limited control of foreign minerals by US companies. Moreover, as you know better than I, sharply higher energy costs since 1973 and a trend in the LDCs toward greater downstream processing have led to a decline in the US mineral processing industry.

For certain minerals, the United States is highly dependent on imports. Take 8 minerals -- chrome, cobalt, columbium, manganese, the platinum group, tantalum, titanium and tungsten. Each has important military and essential civilian industrial application. The key suppliers are considered by many to be at least potentially unreliable, and the United States is highly import dependent on them.

Western Europe and Japan face even more serious potential problems than the United States in this arena. Only in the case of tungsten do they have any sizeable resources. On the other hand, unlike the West, the USSR is virtually self-sufficient in strategic minerals.

There is reason for concern for supply reliability.

-- South Africa and the USSR control about 90% of the world's platinum production and nearly all known reserves.

-- South Africa and Zimbabwe hold 98% of the non-Communist world's chrome reserves.

-- Zaire, Zambia and the USSR control about 75% of world cobalt production.

The potential for serious supply disruption arising from these concentrations have led the developed countries to seek new mineral deposits elsewhere but they have not had much success.

With supplies of strategic metals relatively abundant since World War II, western vulnerability has not yet been tested. Several possibilities exist for strategic mineral supply disruptions initiated by others with the intent to harm the West and particularly the United States. Some of these include covert political-military actions by the USSR or surrogates to disrupt mineral supplies in Africa, politically motivated embargoes by

several LDC suppliers, or political instability in key producing countries leading to prolonged supply disruption. There are of course other scenarios one can imagine.

One of our greatest concerns in the Third World is the possibility of a sudden political upheaval, one result of which is a prolonged cutoff of several critical minerals. We dedicate substantial intelligence assets to providing early warning of such upheavals. As we track Soviet troublemaking in Africa, the Middle East, the Caribbean, and Latin America -- where Moscow seeks ^{primarily} political and military gains at our expense -- I can assure you that we are attentive to the potential impact of their actions on energy, minerals and other resource supplies.

But you are aware of these concerns. I am here because your charter says your "...committee shall: ... identify existing or potential deficiencies in the availability of strategic and critical minerals and materials; the technological capability to process them; ...and develop recommendations to remedy such factors".

Drawing on your charter, I want to direct your attention to the fact that the United States is running a risk of becoming vulnerable in an entirely new area -- the materials area: in my view a more immediate risk than a resource war fomented by the USSR. The concept of strategic materials is changing. The rapid change and diffusion of technology is redefining the meaning of strategic dependence. Looking out to the years ahead, I believe four areas already merit special attention:

- fiber reinforced composites,

- structural ceramics,

- new semiconductor materials and

- electro-optic materials such as fiber optics and sensors.

Many applications of these advanced materials are found in the transportation and information sectors -- areas of military concern to the United States.

In transportation, for example:

- Uniquely configured ultra-thin wings made of composites have already proven capable of greatly increasing in-flight maneuverability.

- Strong, light weight, and fracture resistant fiber reinforced plastics, have potential applications in helicopter rotors, aircraft wings, and jet engines.

- Ceramics offer as many possibilities. Engine parts, made of ceramics can be operated at high temperatures, improving thermodynamic efficiency, horsepower, and fuel consumption. Some experts anticipate a 30 percent increase in fuel efficiency and a doubling in vehicle

range, especially important in cruise missile and tank applications.

In civil and military information applications,

- Researchers are looking to advanced materials such as gallium arsenide as current silicon-based semiconductors approach theoretical performance limits.

- Optical fibers made of silicon glass are outcompeting copper in communications applications because they are capable of carrying at least an order of magnitude more messages.

- Electro-optical sensors hold great promise in a wide variety of applications, ranging from target-homing antitank projectiles to intelligent robots.

Bio-technology also offers interesting promise.

- Bio-technology could reduce dependence on petroleum as the feed stock for organic compounds such as plastics.

- Bio-technology may also aid in future oil recovery by lowering the viscosity of residual oil and producing carbon dioxide to repressurize wells. Some estimate that these techniques can be applied to 500,000 US wells now producing less than 10 barrels per day.

My concern is that as production of these materials increases, in part through foreign government support, foreign competitors may build enough capacity to discourage US firms from moving into these areas. And if this happens, the relevant production technology for military applications may never be established domestically without expensive Defense Department programs.

This is increasingly important because of a growing change in the civilian/military relationship. More and more, the flow of technology is from civilian to military application.

- For some advanced materials, large civilian markets can attract substantially more R&D investment than the military can support.

- Civilian performance requirements in many cases equal or exceed those of the military. Jet engines in commercial aircraft, for example, are expected to last longer than those used by the military.

All of this means that to the extent dual-use advanced materials and manufacturing processes are developed and applied more rapidly abroad, the United States may find itself dependent on foreign sources for materials or technologies of military concern. Indeed, some dependencies are already developing:

- The Japanese control about 70 percent of the world market in ceramic packages for microelectronic chips.

- US firms developing ceramic-based engines have found that Japan and Australia are the only source of high-quality, reasonably priced ceramic parts.

In addition to this issue, the emergence of strong foreign capabilities in advanced materials complicates US efforts to control the flow of technology to the Soviet bloc. COCOM enforcement becomes increasingly difficult as the number of possible sources of these technologies increases and you can be sure that the Soviets will aggressively seek to acquire new materials, technologies, and know-how from the West.

Looking further down the road we can envision that as the role of technology expands, even the concept of strategic stockpiles may have to be reassessed. While physical stores of various strategic minerals and materials will always be important, one must consider that information, processes, and know-how may also have great strategic importance in the years ahead. We need to ask ourselves how we can best guarantee that the United States has ready access to the production and materials technologies of the future on which advanced military systems will depend. Under your charter, these appear to be legitimate concerns for this Committee. I commend them to your priority attention.