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Rocky Flats Plant
North American Space Operations
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Rockwell
International

Contractor to U.S. Department of Energy

December 14, 1984

84-RF-3511

James R. Nicks
Area Manager
DOE, RFAO

BERYLLIUM REQUIREMENTS AND SCRAP PROJECTIONS (U)

Enclosed is the requested information for the AL TWX from N. S. Dienes dated 11-13-84. The response provides our anticipated Beryllium procurement and the projection of inventories from FY85 through FY89. Also included are actual procurement of FY83 and FY84.

W F Weston

W. F. Weston, Director
Safeguards & Materials Management

Orig. & 1 cc - J. R. Nicks
Enc. (2)

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEW DATE: 5/19/94	DETERMINATION (CIRCLE NUMBERS)
AUTHORITY: 52/DC DD	1. CLASSIFICATION RETAINED
NAME: Jim Fleming	2. CLASSIFICATION CHANGED TO:
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NAME: Nazir Khalil AL	5. CLASSIFICATION CANCELED
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The current Beryllium inventory at Rocky Flats is as follows:

- | | |
|--|--------------------------|
| 1. Solid Scrap (broken)
from new build attrition: | 8589 lbs. (51 barrels) |
| 2. Be Billets from Wrought
Be process: | 8681 lbs. (37 barrels) |
| 3. Contaminated Parts from
site returns: | 17875 lbs. (166 barrels) |
| <hr/> | |
| 5. Beryllium chips from
new build machining: | 15792 lbs. (60 barrels) |

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FIVE-YEAR BERYLLIUM PROCUREMENT FORECAST

Based on the current AWLPG, dated 10-9-84, our five-year procurement forecast for Beryllium is as follows:

	<u>FY83</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u> ⁽²⁾
Cost in Millions ⁽¹⁾	16.2	19.4	13.2	18.4	15.8	15.0	17.1
Weight (lbs.)	23611	29341	19133	28684	23955	23978	26113

The following analysis reflects the quantity of Beryllium Scrap Rocky Flats would generate based on the new build and retirement figures in the AWLPG:

<u>TYPE OF SCRAP</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
<u>Noncontaminated from retirements (lbs.)</u>	1125	698	732	1113	1257
Solid scrap from new build attrition (lbs.)	1172	1312	1194	1184	1365
Chips from new build machining (lbs.)	7903	8850	8079	8008	8811

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(1) Cost is based on latest purchase orders with Brush Wellman. No inflation factors have been added. FY83 and FY84 are actual cost.

(2) W82 build of 60 in FY89 is excluded due to development.

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of 1 copies Series A

UNITED STATES DEPARTMENT OF ENERGY
SPECIAL TASK GROUP REPORT - BERYLLIUM
SUBSTITUTE MATERIALS FOR BE AND BEO IN NUCLEAR WEAPONS
VOLUME II (U)

IMPACT ON UNITED STATES DEPARTMENT OF ENERGY
NATIONAL DEFENSE PROGRAMS OF PROPOSED
DEPARTMENT OF LABOR (OCCUPATIONAL SAFETY AND
HEALTH ADMINISTRATION) BERYLLIUM STANDARDS

MAY 2, 1978



DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
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AUTHORITY: <input checked="" type="checkbox"/> DC <input type="checkbox"/> DD	1. CLASSIFICATION RETAINED
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By: Michael Q. Guy
Engineer

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Substitutes

If beryllium metal should cease to be available, most existing stockpile primaries could not be remanufactured without nuclear testing.

Of the LASL devices currently entering stockpile, the B61-3 and B61-4 do not contain beryllium. The B61-5 does, but the B61-3 could probably be substituted for it.

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In view of the heavy dependence on Be and BeO for present designs, as well as the pending CTBT, LLL, LASL and the Task Group believe that preserving availability of these materials is mandatory.

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CTBT

In order to maintain the U. S. nuclear weapons stockpile properly during a CTB regime, the weapons program must be exempt from future Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and other Federal regulations which would prevent it from producing or rebuilding warheads for the stockpile. During the ratification process for a CTB, it should be clearly understood that such an exclusion is intended in order to provide for the continuing national defense. It is important that this understanding be recognized in advance of the treaty's ratification to avoid possible future time-consuming procedural delays in obtaining exemptions from the regulations. Any delays in the production of nuclear warheads could impair the defense of the Nation.

The beryllium standard proposed by OSHA offers an example of the impact federal regulations can have on the nuclear weapons program under a CTB. In October 1975, OSHA proposed new standards for occupational exposure to beryllium and its compounds. The new standards may have a significant impact on the weapons program, supply of beryllium (BeO) and beryllium metal.

The loss of beryllium would have a major impact on the weapons program, particularly under a CTB. The existing stockpile primaries could not be remanufactured with substitute materials without nuclear testing to verify performance. The following systems currently in the stockpile contain beryllium: W30-2, B43, W44, W45, W48, W50, B54, W55, B57, W58; B61-0,-1,-2; W62, and W66. For a complete listing, please refer to Volume I of the Master Nuclear Schedule.

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In summary, the design laboratories have stated that, for the existing stockpile systems and those in development, direct substitution of alternative materials cannot be made without testing - beryllium must be used.

A provision in the OSHA act stipulates that the Secretary of Labor may, after notice and an opportunity for hearing, allow exemptions to the requirements of the act for up to six months to avoid serious impairment of the national defense. This authority has never been utilized, and it is reasonable to assume that OSHA would require alternative measures for the protection of

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employees. Nonetheless, a six-month exemption becomes moot if, upon implementation of the OSHA beryllium standards, the primary beryllium industry terminates its production of beryllium for the weapons programs. Further, such exemption may be subject to injunction by employee or public groups and could be delayed for a significant period of time. If the government were to establish a beryllium production capability within the weapon complex, a very preliminary estimate is that it would require more than five years to establish a capital investment of more than \$100 million and significantly increased operating costs. Therefore, it is recommended that the weapons program be exempted from future federal regulations which might make it difficult or impossible to rebuild existing warheads without further testing.

Other Action

Further, it is recommended that the above action be supplemented by specifically beryllium-related Department of Energy and Department of Defense Secretary level action, if possible, and necessary internal Department fiscal budget actions in any case to bring our position to the attention of DOL and the White House and to prepare for the worst case.

Scrap Metal

Further, it is recommended that beryllium metal scrap from retirement category weapon systems be reclaimed for future use. This would include plutonium decontamination and casting the beryllium metal as ingots. This material would be reclaimed, reprocessed and used in future manufacture only within the government-owned weapons complex. During the meantime, until this recommendation is accomplished, as necessary, the current practice of offering pure beryllium metal machining scrap from current production operations for sale on the open market should continue with the only modification being that the Primary Beryllium Producers should have appropriate scrap buy-back clauses included in future procurement contracts. These clauses are commonly used and easily developed. It should be noted that while all reclaimed and decontaminated beryllium scrap should be used in government-owned facilities only, there is no powder metallurgy process in government-owned facilities in existence today.

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