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Department of Energy
Albuquerque Operations Office
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SEP 11 1980

R. E. Batzel, Director, LLNL
ATTN: Seymour Sack

BERYLLIUM METAL COSTS (U)

Please refer to your memorandum, dated July 21, 1980, same subject.

AL's "Beryllium Supply Program Update" dated March 11, 1980, quoted an average cost to the weapons complex of $1500/lb of beryllium metal for FY 1980.

The actual cost of beryllium metal procured in FY 1980 to date averages $1642/lb. This represents a 9% estimating error, largely due to the use of an average value to describe a diverse product mix. The remainder of the 9% error may be attributed to forecasting error, which is a reasonable expectation.

Actual beryllium costs for production in FY 1980 include the W70-4, W76, W78, and W80. The average cost/lb of beryllium for these programs is as follows:

PROGRAM	AVERAGE COST/LB
W70-4	
W76	
W78	
W79	
W80	

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1ST REVIEW-DATE: 5/19/99	DETERMINATION [CIRCLE NUMBER(S)]
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Title Engineer Date 8-28-80

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period, if amortized across product sales, would result in a $100 million dollar price increase, or $10 million dollars per year for each of 10 years. This estimate by Brush Wellman was made to illustrate the point that profitability, pricing and tax issues compound price increases. Such an increase would generate much more than the 20 percent per year increase you suggest is excessive. In fact, the "Beryllium Supply Program Update" of March 11, 1980, makes no reference to modernization projects, OSHA standards compliance costs, or any capital investment. AL's use of a 20 percent per year price increase was at the time of its use a reasonable value. Today, 15 percent to 20 percent per year escalation appears to be reasonable on a gross basis.

Realistic estimating, using readily available data, indicates the magnitude of the beryllium metal cost problem, as shown in the March 11, 1980, "Beryllium Supply Program Update". As intended, the report updated work-in-progress and confirmed requirements. The next update, which will be formally published in September, 1980, within the context of AL's beryllium program management plan, will probably duplicate the information shown below. It is provided to you now to give you ample time to critique the data, as you see fit.

Beryllium Procurement Estimate
(Millions of Dollars)

FY:	1981	1982	1983	1984	1985	1986	TOTAL
1980 $	14.5	21.8	20.1	23.4	18.6	24.8	123.20
5%/YR	15.2	24.0	23.0	28.6	23.8	33.2	147.80
10%/YR	15.9	26.4	26.7	34.2	29.9	43.9	177.00
15%/YR	16.7	28.8	30.6	40.9	37.4	57.3	211.70
20%/YR	17.4	31.4	34.8	48.7	46.5	74.4	253.20
3/80 UPDATE	27.0	36.7	51.8	62.2	82.1	67.2	327.00

As a matter of interest, the total FY1981-1986 cost estimate in the 3/80 update, at 20 percent per year escalation, when compared to the 20% per year line in the forthcoming update, indicates the total cost (magnitude) in the 3/80 update to be conservative by $74M, or 23 percent. Of the 23 percent adjustment, 15 percent reflects a 1/3 decrease in B83 baseline 1980 estimates, due to expected results of more efficient beryllium processing. The net adjustment of 8 percent is primarily a result of using specific weapon beryllium costs per pound rather than an average.

If you have any questions or comments on the above, please call.

T. C. Jones, Director
Weapons Production Division

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