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MONSANTO RESEARCH CORPORATION
65-11-6

MONSANTO RESEARCH CORPORATION

MOUND LABORATORY

MIAMISBURG, OHIO

U. S. GOVERNMENT CONTRACT NO. AT-33-1-GEN-53

November 1, 1965

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THIS DOCUMENT CONSIST OF 12 PAGES
THIS IS COPY 9 OF 13 SERIES A

Mr. W. B. Creamer, Manager
Dayton Area Office
U. S. Atomic Energy Commission
Post Office Box 66
Miamisburg, Ohio

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MOUND I/SDR PROJECT
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Dear Mr. Creamer:

After evaluation of the operating budget, the predicted production levels and the projected sales of the Stable Isotopes Inventory Program, it seems advisable to modify the price scheduling for the isotopes as noted in the attachments.

Several minor changes in the program are being proposed as a result of discussions with Mr. T. Raymond Jones during his visit to Mound Laboratory on April 22, 1965, following the Research Materials Planning Meeting at Argonne National Laboratory on April 20, 1965. Mr. Jones said that Federal Agencies should purchase stable isotopes from Mound at "fund cost." This makes the use of the two separate AEC forms, 375 and 391, more meaningful and if we have your concurrence, we shall start charging "fund cost" to those sites authorized to use form AEC 375 (Federal Agencies). These two prices are compared in Table I which is attached.

~~RESTRICTED DATA~~

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GROUP 1

Excluded from automatic
downgrading and
declassification

MOUND DECLASSIFICATION REVIEW	
1ST REVIEW DATE: <u>7/18/00</u>	DETERMINATION (CIRCLE NUMBER(S))
AUTHORITY: <input type="checkbox"/> AQC <input checked="" type="checkbox"/> ADC <input type="checkbox"/> ADD	1. CLASSIFICATION RETAINED
NAME: <u>Dan H. [unclear]</u>	2. CLASSIFICATION CHANGED TO: _____
2ND REVIEW DATE: <u>7/05/2016</u>	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: <u>W.B. Creamer</u>	4. COORDINATE WITH: _____
NAME: <u>W.B. Creamer</u>	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY): _____

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Mr. W. B. Creamer

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As will be noted when comparing Table I with the Schedules, it is proposed that we reduce the price of helium-3 for those who use form AEC 391 to \$85 rather than the \$80 projected in Schedule B. By doing this, it is possible to regain the dollars lost by initiating "fund cost" sales to those who use the AEC form 375. This can be seen arithmetically as follows:

$\$80.00 - \$62.50 = \$17.50$ = Decreased revenue per unit
from those who use form
AEC 375

$\$17.50 \times 700 = \$12,250$ = Total decreased income
based on projected sale
of 700 liters to form
AEC 375 users

$\frac{\$12,250}{2500} = \4.90 = Required increased revenue
per unit to those who use
form AEC 391 based on pro-
jected sale of 2500 liters

In arriving at the price for the Vapor Pressure Standard for those who use AEC form 391, it was necessary to add \$4.16 "unit depreciation" from "Helium Regular" in Schedule B to the \$269.50 listed in Schedule A.

In generating the prices from the data in the Schedules, in order to be consistent, we have rounded up to the nearest five dollars for both Federal Agencies and outside customers. While this is a rather arbitrary choice, it is consistent with the estimated confidence limit on the costs.

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Mr. W. B. Creamer

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Mr. Jones also indicated that we should develop quantity discount prices, but for helium-3 only. We have postponed the discount price development on the basis of the letter, W. B. Creamer to D. L. Scott dated August 16, 1965, limiting the sales of helium-3 to 250 liters per customer.

The production level of helium-3 used in the new price schedule is 5800 STP liters during fiscal year 1966. The sales during fiscal year 1966 are estimated to be 2500 liters to outside organizations, 700 liters to those who use form AEC 375, and 2100 liters for special classified use within the AEC. The balance of 500 liters will go into an increase in inventory making the beginning inventory for fiscal year 1967, 1500 liters.

Since we have made improvements in the prepurification system used for the raw feed gas before the isotopic separation as well as the purification system for the product, it is proposed that we eliminate the High Purity II Grade of helium-3 which has a tritium content of $\leq 2 \times 10^{-10}$ per cent from our sales catalog, leaving only two grades (with respect to tritium content), Normal and Low Tritium, having tritium contents of $\leq 4 \times 10^{-8}$ and $\leq 2 \times 10^{-10}$ per cent, respectively. This will essentially make any quantity available without a license for handling radioactivity.

Additionally, it is to be noted that we now have three items for sale which were developed during fiscal year 1965; 90% krypton-86, 25% xenon-131, and 1% xenon-124. The only other significant deviation from the last pricing schedule is the non-inventory item, neon-20. This is the item which is a by-product of the production of neon-21 and neon-22. The last selling price was based on 99.5% neon-20 which we now produce enriched to $\geq 99.9\%$ and this is the basis for the small price increase.

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Mr. W. B. Creamer

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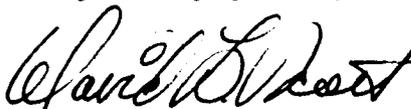
Packaging and handling and special charges remain essentially unaffected, except for the omission of High Purity II charges and the high pressure loading. These charges are included as Schedule A in the attachments which is comparable to Schedule 2 contained in the letter, D. L. Scott to W. B. Creamer dated August 8, 1963, MLM-CF-63-8-130. The total costs, excluding the 15 per cent added factor, listed in this schedule would be charged to those who use form AEC 375. Increased loading efficiency makes the deletion of the extra loading charge possible.

Schedules B, C, D, E, and F show the distribution of cost center charges to all of the isotopes which is the basis of the newly developed prices summarized in Table I.

We are transmitting four copies of the new price proposals including Table I and Schedules A, B, C, D, E, and F so that you may transmit three copies to C. R. McNeely in conformance with the distribution established in 1963. We are preparing a revised brochure and would like to make the new prices effective January 1, 1966.

If you need any additional information, please let us know.

Very truly yours,



David L. Scott
Vice President,
Plant Manager

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Mr. W. B. Creamer

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TABLE I

Summary of Proposed Selling Prices
of Stable Isotopes

Description	Unit	Present Price	Proposed Price	
			AEC 375	AEC 391
He ³ - Normal	liter	100.00	65.00	85.00
He ³ - Low Tritium	liter	130.00	80.00	100.00
He ³ - Low Helium-4	liter	150.00	110.00	135.00
Vapor Pressure Standard	each	315.00	235.00	275.00
Neon-20, > 99.9%	liter	30.00	40.00	50.00
Neon-21, > 50%	milliliter	3.35	2.95	3.65
Neon-22 > 99%	liter	270.00	170.00	210.00
Argon-36, > 99%	milliliter	2.50	2.05	2.50
Argon-38, > 25%	milliliter	3.50	3.50	4.25
Krypton-78, > 8%	milliliter	2.10	1.80	2.20
Krypton-86 > 90%	milliliter	----	12.70	16.25
Xenon-136, > 80%	milliliter	9.50	6.05	7.25
Xenon-131, > 25%	milliliter	----	2.15	3.25
Xenon-124, > 1%	milliliter	----	1.45	2.75
Carbon-13, > 90%	milligram	3.75	3.15	3.85
<hr/>				
Ampoules * 10-100 ml	each	40.00	35.00	40.00
500-1000 ml	each	45.00	40.00	45.00
75 ml cylinders (S.S.)	each	---	25.00	30.00
500 ml cylinders	each	15.00	13.00	15.00
2.5 liter cylinders	each	25.00	22.00	25.00
6.5 liter cylinders	each	35.00	30.00	35.00
Packaging and handling	each	35.00	29.00	35.00

* Price includes packaging and handling

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SCHEDULE A

Costs of Packing and Handling and Special Charges

	Packing and Handling	Low Tritium	Low Helium-4	VPS Units
Labor	\$ 10	\$ 3	\$	\$
Material		4		
Burden	19	6		
Special Processing			43	
Helium Gas				62.50
Special Container				50.00
National Bureau of Standards				50.00
Low Helium-4				43.00
Packing and Handling	—	—	—	<u>29.00</u>
Total Costs	\$ 29	\$ 13	\$ 43	234.50
Plus 15%	<u>6</u>	<u>2</u>	<u>7</u>	<u>35.00</u>
	\$ 35	\$ 15	\$ 50	\$ 269.50

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SCHEDULE B

Estimate to Establish Stable Isotopes and Carbon-13 Selling Price
FY 1966

HELIUM

	Helium Regular	Helium Classified	Sub Total
FY 1965 Selling Price	100.00	12.50	
7-1-65 Beginning Inventory	2490.90	-0-	
FY 1966 Quantity Produced	<u>3700.00</u>	<u>2100.00</u>	
Total Liters Beg. Inv. & Produced	6190.90	2100.00	
Less: Forecasted Sales	<u>3200.00</u>	<u>2100.00</u>	
Ending Inventory Quantity	2990.90	-0-	
7-1-65 Actual Value			
Beginning Inventory	162,911.	-0-	162,911.
FY 1966 Cost of Production	<u>224,070.</u>	<u>26,250.</u>	<u>250,320.</u>
Total Cost	386,981.	26,250.	413,231.
Less: Cost of Sales	<u>200,026.</u>	<u>26,250.</u>	<u>226,276.</u>
Ending Inventory Value	186,955.	-0-	186,955.
Depreciation, Total	25,780.	-0-	25,780.
Less: Depr., Cost of Sales	<u>13,325.</u>	<u>-0-</u>	<u>13,325.</u>
Depr. Ending Inventory	12,455.	-0-	12,455.
Unit Cost of Product	62.51	12.50	
Unit Depreciation	4.16	-0-	
15% Markup	<u>10.00</u>	<u>-0-</u>	
Unit Selling Price	76.67	12.50	

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SCHEDULE C

Estimate to Establish Stable Isotopes and Carbon-13 Selling Price
FY 1966

NEON AND ARGON

	Neon 21	Neon 22	Argon 36	Argon 38	Sub Total
FY 1965 Selling Price	3550.00	270.00	2500.00	3500.00	
7-1-65 Beginning Inventory	.560	178.746	14.107	.090	
FY 1966 Quantity Produced	<u>1.000</u>	<u>24.700</u>	<u>14.000</u>	<u>3.000</u>	
Total Liters Beg. Inv. & Produced	1.560	203.446	28.107	3.090	
Less: Forecasted Sales	<u>.500</u>	<u>40.000</u>	<u>10.000</u>	<u>2.000</u>	
Ending Inventory quantity	1.060	163.446	18.107	1.090	
7-1-65 Actual Value					
Beginning Inventory	1207.	27755.	22928.	241.	52,131.
FY 1966 Cost of Production	<u>3391.</u>	<u>6482.</u>	<u>34466.</u>	<u>10452.</u>	<u>54,791.</u>
Total Cost	4598.	34237.	57394.	10693.	106,922.
Less: Cost of Sales	<u>1474.</u>	<u>6731.</u>	<u>20420.</u>	<u>6921.</u>	<u>35,546.</u>
Ending Inventory Value	3124.	27506.	36974.	3772.	71,376.
Depreciation, Total	315.	2290.	3830.	710.	7,145.
Less: Depr., Cost of Sales	<u>101.</u>	<u>450.</u>	<u>1363.</u>	<u>460.</u>	<u>2,374.</u>
Depr. Ending Inventory	214.	1840.	2467.	250.	4,771.
Unit Cost of Product	2947.17	168.29	2041.97	3460.55	
Unit Depreciation	201.89	11.26	136.25	229.36	
15% Markup	<u>472.36</u>	<u>26.93</u>	<u>326.73</u>	<u>553.49</u>	
Unit Selling Price	3621.42	206.48	2504.95	4243.40	

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SCHEDULE D

Estimate to Establish Stable Isotopes and Carbon-13 Selling Price
FY 1966

KRYPTON AND XENON

	Krypton-78	Krypton-86	Xenon-136	Xenon-131	Xenon-124	Sub Total
FY 1965 Selling Price	2.10		9500.00			
7-1-65 Beginning Inventory	3.43		3.477			
FY 1966 Quantity Produced	<u>3.00</u>	<u>0.6</u>	<u>0.750</u>	<u>3.00</u>	<u>6.00</u>	
Total Liters Beg. Inv. & Produced	6.43	0.6	4.227	3.00	6.00	
Less: Forecasted Sales	<u>1.25</u>	<u>0.3</u>	<u>0.250</u>	<u>1.50</u>	<u>3.00</u>	
Ending Inventory Quantity	5.18	0.3	3.977	1.50	3.00	
7-1-65 Actual Value						
Beginning Inventory	5551.		20757.			26,308.
FY 1966 Cost of Production	<u>6173.</u>	<u>6172.</u>	<u>4213.</u>	<u>4213.</u>	<u>5616.</u>	<u>26,387.</u>
Total Cost	11724.	6172.	24970.	4213.	5616.	52,695.
Less: Cost of Sales	<u>2373.</u>	<u>2372.</u>	<u>1049.</u>	<u>1049.</u>	<u>1398.</u>	<u>8,241.</u>
Ending Inventory Value	9351.	3800.	23921.	3164.	4218.	44,454.
Depreciation, Total	593.	592.	1165.	1165.	3200.	6,715.
Less: Depr., Cost of Sales	<u>158.</u>	<u>157.</u>	<u>117.</u>	<u>117.</u>	<u>320.</u>	<u>869.</u>
Depr. Ending Inventory	435.	435.	1048.	1048.	2880.	5,846.
Unit Cost of Product	1805.21	12666.67	6014.84	2109.33	1406.00	
Unit Depreciation	83.98	1450.00	263.52	698.67	960.00	
15% Markup	<u>283.38</u>	<u>2117.50</u>	<u>941.75</u>	<u>421.20</u>	<u>354.90</u>	
Unit Selling Price	2172.57	16234.17	7220.11	3229.20	2720.90	

SCHEDULE E

Estimate to Establish Stable Isotopes and Carbon-13 Selling Price
FY 1966

CARBON-13

	Carbon-13	Sub Total
FY 1965 Selling Price	3750.00	
7-1-65 Beginning Inventory	5.810	
FY 1966 Quantity Produced	<u>8.700</u>	
Total Liters Beg. Inv. & Produced	14.510	
Less: Forecasted Sales	<u>7.000</u>	
Ending Inventory Quantity	7.510	
7-1-65 Actual Value		
Beginning Inventory	13,500.	13,500.
FY 1966 Cost of Production	<u>32,000.</u>	<u>32,000.</u>
Total Cost	45,500.	45,500.
Less: Cost of Sales	<u>21,950.</u>	<u>21,950.</u>
Ending Inventory Value	23,550.	23,550.
Depreciation, Total	3,040.	3,040.
Less: Depr., Cost of Sales	<u>1,467.</u>	<u>1,467.</u>
Depr. Ending Inventory	1,573.	1,573.
Unit Cost of Product	3,135.82	
Unit Depreciation	209.45	
15% Markup	<u>501.79</u>	
Unit Selling Price	<u>3,847.06</u>	

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SCHEDULE F

Estimate to Establish Stable Isotopes and Carbon-13 Selling Price
FY 1966

(CONSOLIDATION)

	Helium	Neon Argon	Krypton Xenon	Carbon-13	Total
7-1-65 Actual Value					
Beginning Inventory	162,911	52,131	26,308	13,500	254,850
· FY 1966 Cost of Production	<u>250,320</u>	<u>54,791</u>	<u>26,389</u>	<u>32,000</u>	<u>363,498</u>
Total Cost	413,231	106,922	52,695	45,500	618,348
Less: Cost of Sales	<u>226,276</u>	<u>35,546</u>	<u>8,241</u>	<u>21,950</u>	<u>292,013</u>
Ending Inventory Value	186,955	71,376	44,454	23,550	326,335
Depreciation, Total	25,780	7,145	6,715	3,040	42,680
Less: Depr., Cost of Sales	<u>13,325</u>	<u>2,374</u>	<u>869</u>	<u>1,467</u>	<u>18,035</u>
Depr. Ending Inventory	12,455	4,771	5,846	1,573	24,645

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