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DATE 6/25/64 BY [Signature]

MEMORANDUM FOR MR. BERMAN  
DATE 6/25/64 BY [Signature]

June 25, 1964

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

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MOUND LSDR PROJECT  
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Dear Mr. Creamer:

In reply to the memorandum from Arnold Berman, AEC, DID, to W. B. Creamer, dated June 22, 1964, on the Request for Plutonium-238 Isotopic Fuels Specifications, we are providing the following information. Please transmit one copy to Mr. Berman.

For shipments of plutonium-238 from the Savannah River Plant to Mound Laboratory in the oxide form, the following specifications are necessary for us to support the Division of Isotopes Development program activities concurrent with production of WR material in the SM-Building for DMA scheduled requirements.

1. The plutonium-238 isotopic purity must be equal to or greater than 77.5 per cent.
2. The sum of all impurities other than oxygen must be less than 2 weight per cent with no single impurity greater than 0.75 weight per cent. All impurities exceeding 0.5 weight per cent must be identified.
3. Maximum gamma radiation excluding gamma radiation less than 0.35 Mev must be less than  $5 \times 10^{-7}$  curies per gram of total plutonium.
4. The neutron radiation must be less than  $3 \times 10^4$  neutrons per second per gram of plutonium-238 with the plutonium in the oxide form.

MOUND DECLASSIFICATION REVIEW	
1. REVIEW DATE: 5/3/05	2. DETERMINATION (CIRCLE NUMBER(S))
3. AUTHORITY: DAOC BRAC ELADD	1. CLASSIFICATION RETAINED
4. NAME: [Signature]	2. CLASSIFICATION CHANGED TO:
5. END REVIEW DATE: 2/17/00	3. CONTAINS NO DOE CLASSIFIED INFO
6. AUTHORITY: [Signature]	4. COORDINATE WITH:
7. NAME: [Signature]	5. DECLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER COMMENTS:

GROUP 1

Excluded from automatic  
downgrading and  
declassification

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Mr. W. B. Creamer

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June 25, 1964

Additional specifications may be imposed on plutonium-238 oxide to be used for WR processing, however, the above specifications are adequate as a feed material to meet all known DID program requirements for plutonium-238 and are consistent with requirements for processing this material in our production facility. Material meeting these specifications may be used directly as the oxide, processed to the metal form, or reprocessed to produce oxide of significantly different characteristics or alternate fuel forms as may be required for power source applications.

The SNAP 15A, B and C fuel form is the metal which can be produced from material of the above specifications. Specifications for the SNAP 19 fuel have not been established, however, the first units to be fabricated for this program will contain the metal fuel form. Research and development efforts are in progress to evaluate alternate fuel forms for power source applications. If future SNAP sources should require alternate fuel forms it is believed that plutonium oxide received from SRP, meeting the above specifications will be adequate as a feed material to our production process.

Very truly yours,

David L. Scott  
Vice President,  
Plant Manager



DLS:GRG:lg

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