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IN REPLY  
REFER TO: W-1158

September 19, 1957

Commander, Field Command  
Armed Forces Special Weapons Center  
Albuquerque Base  
Albuquerque, New Mexico

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THIS DOCUMENT CONTAINS 2 PAGE(S)  
NO. 10 OF 10 COPIES, SERIES A

Attention: FCMI

Reference: Letter FCMI8-916.9 (FC/06560484), FC/AFSWP  
to LASL, June 21, 1956, Subject: Use of *RS-1089*  
Trichlorethylene for Cleaning Nuclear  
Components.

1. As requested in the above referenced letter, the use of trichlorethylene for cleaning of nuclear components has been reevaluated.
2. In considering the problem, it is assumed:
  - a) that loose uranium oxides on the surface of nuclear components should be removed in a controlled manner to prevent their uncontrolled spread because such oxides are a radiological hazard to personnel.
  - b) that a moistening agent is necessary to prevent their spread during removal.
  - c) that the moistening agent should be unreactive with both the oxides and the parent metal and should be volatile to prevent leaving a residue on the cleaned surfaces.
  - d) that the moistening agent should be non-flammable particularly in view of the abrasion sparking characteristics of uranium metal.
3. In meeting the above characteristics for a moistening agent, there appears to be little choice other than the volatile, non-flammable chlorinated hydrocarbons. Trichlorethylene is one of the less toxic of these.

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*Alahavri Jani, 2/17/00* (ADC/AD)  
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*RS# 2616 RC Johnson to Chief, BuChd  
dtd 9-27-57 (Subj as reference above)  
transmitted*

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4. You will note that all of the above is based on preventing a radiological hazard to personnel rather than on any argument of nuclear function. With respect to the latter, the loose uranium oxides generally encountered on nuclear components would not be expected to affect their nuclear function unless present to an extent that prevents their proper assembly with each other or with mating non-nuclear parts. Thus, if some responsible authority should determine that the radiological hazard associated with loose uranium oxides is not important enough to warrant their control the "cleaning" of nuclear components could, for the most part, be dispensed with.

Original Signed by  
M. F. ROY

M. F. Roy  
W-Division Leader

MFR:kr

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