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RICHLAND, WASHINGTON HANFORD ATOMIC PRODUCTS OPERATION

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AUTHORIZATION FOR A PROCESS CHANGE - REVISION OF NUCLEAR
SAFETY RULES FOR TRANSPORTING PLUTONIUM COMPOUNDS BETWEEN
THE 231 AND 234-5 BUILDINGS

By


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June 9, 1954

HANFORD ATOMIC PRODUCTS OPERATION
RICHLAND, WASHINGTON

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I. INTRODUCTION

Nuclear safety rules for transporting plutonium compounds between the 231 and 234-5 Buildings were established in Documents HW-30328⁽¹⁾ and HW-31465.⁽²⁾ Provisions for the co-transporting of loaded sample cans, filter boats and/or product samples were not included in the above documents. In the interest of economy and efficiency the rules have been reviewed and revised according to the provisions set forth in this document.

II. PRESENT TRANSPORTATION LIMITS

1. Transportation of Plutonium Nitrate in Sample Cans

A maximum of 12 sample cans each containing 169 to 400 grams of plutonium as plutonium nitrate solution processed from nominal 600 MWD/T plutonium⁽¹⁾, or a maximum of 12 sample cans containing up to 200 grams of plutonium as plutonium nitrate solution processed from nominal 200 MWD/T plutonium⁽²⁾, or a maximum of 10 sample cans containing 200 to 400 grams of plutonium as plutonium nitrate solution processed from nominal 200 MWD/T plutonium⁽²⁾; may be transported between the 231 and 234-5 Buildings at one time. The loaded cans are to be confined to a two dimensional array provided by twelve 10 inch by 20 inch compartments that are available on the transporting vehicle. Each compartment is limited to one loaded sample can and no other plutonium or plutonium compounds may be present on a vehicle transporting loaded sample cans.

2. Transportation of Plutonium Oxalate in Filter Boats

A maximum of 12 loaded filter boats each containing up to 1000 grams of plutonium as plutonium oxalate may be transported between the 231 and 234-5 Buildings at one time. The loaded boats must be in filter boat carriers and confined to a two dimensional array. No other plutonium or plutonium compounds may be present on a vehicle carrying loaded filter boats.⁽¹⁾

3. Transportation of Plutonium Samples

Provisions for transporting samples between the 231 and 234-5 Buildings have not been previously considered from a nuclear safety standpoint.

III. REVISED TRANSPORTATION LIMITS

The maximum allowable number of sample cans or filter boats containing plutonium compounds that may be transported between the 231 and 234-5 Building shall remain as defined in Documents HW-30328 and HW-31465 (outlined above). However, loaded sample cans and loaded filter boats may be transported at the same time on the same vehicle provided that a two dimensional array is maintained and the total number of items in such combinations does not exceed twelve (12), except that, whenever one or more sample cans contain (s) 200 to 400 grams of plutonium as plutonium nitrate solution processed from nominal 200 MWD/T plutonium the total

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number of containers in such combinations shall not exceed ten (10). One filter boat or one sample can may be replaced by a maximum of 100 grams of plutonium or plutonium compounds of nondescript concentration in a suitable container or containers.

IV. BASIS

The nuclear safety rules for transporting plutonium nitrate, plutonium oxalate and plutonium samples have been reviewed and revised in the interest of efficiency. The transporting of mixed loads of plutonium compounds will decrease the number of trips required to transfer the various 231 Building products to the 234-5 Building.

The limits as established above are in keeping with the policy of preventing the accidental accumulation of unsafe masses of plutonium and shall be rigorously observed.

V. REFERENCES

1. HW-30328, Authorization for Process Change, Definitions and Changes in Batch Limits - Nuclear Safety - Buildings 231 and 234-5,
A.E. Smith by R.E. Isaacson (3-11-54).
2. HW-31465, Addendum to HW-29691, Authorization for a Process Change - 231-Z Building - Loading, Identification, and Storage of Sample Cans Containing 400 Grams of Plutonium as Liquid Plutonium Nitrate Solution, A.E. Smith by R.E. Isaacson (4-14-54).

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