

DOCKET NO. 40-6767

STAUFFER CHEMICAL COMPANY

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STAUFFER METALS DIVISION

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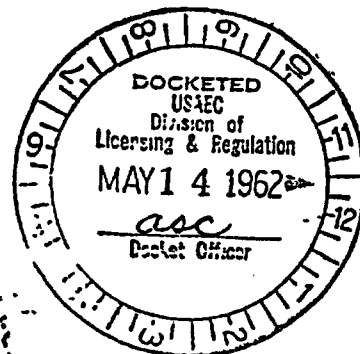


May 10, 1962

United States Atomic Energy Commission
Division of Licensing and Regulation
Source and Special Nuclear Materials Branch
Washington 25, D. C.

Attention: Mr. Donald A. Nussbaumer, Chief

Reference: Application for Source Materials License
Your file DLR:RLL 40-6767
and letter of April 5, 1962



Gentlemen:

This letter is in answer to your referenced request for additional information to enable you to further process our application for a source materials license. Inasmuch as a review of our procedures indicates some minor modifications, we are enclosing four copies of this letter and request that it be incorporated as an addendum to our application.

The following are specific answers to the questions you have raised and are numbered in the same sequence as in your letter of April 5, 1962:

1. In further considering the type of equipment to be used in ventilating saw and lathe operations we have elected to utilize close-capture hoods typical of those used in industrial hygiene dust control work with inlet air velocities in the 200 to 400 ft./min. range depending on the particular operation. Dusts will be captured in a system which includes a glasswool roughing filter and a high efficiency filter. The collection efficiency of the latter filter will be at least 99.97% for 0.3 micron DOP particles. An example of such a filter would be the Flanders No. 6C22-C. The suction line will be equipped with a damper to assure proper linear velocity over the work. An example of the prime air mover would be a Black and Decker Model 55 HD Industrial Vacuum Cleaner.

2. Concentrations of airborne radioactivity will be determined by filtering air through a filter paper with known efficiency at a known flow rate, and subsequently measuring the radioactivity on the filter paper. Radioactivity determinations will be made after an appropriate time has been allowed for the decay of naturally occurring radon and thoron daughter products the presence of which interfere with the determination of the concentrations of

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the long half-life alpha emitters.

Examples of some of the types of equipment that may be used in these determinations are:

- (a) Filter paper - Hollingsworth and Vose #70
(efficiency 99.97% for 0.3 micron, DOP)
- (b) Pump - Filtronics, Model HD-28
- (c) Counter - Nuclear Measurements PC-3A.

Effluents from the plant will be sampled continuously during each melting operation and discharge from filtered ducts ventilating the saw, lathe, and knock-out operations will be sampled continuously during each operation also.

3. Maximum surface contamination levels on equipment and floors:

- (a) No detectable activity in offices or non operational areas.
- (b) In working areas the maximum permissible level will be 5000 d/m/100 sq cm during active operations. Above this level will require clean-up. Following clean-up, maximum permissible level will be 500 d/m/100 sq cm

4. The same crucibles will be used to melt uranium and non-radioactive metals. Following the melting of uranium but before any subsequent melting of non-radioactive metals, the crucibles will be decontaminated by machining a skin pass from the inside diameter.

5. Contamination surveys on the internal surfaces of the furnaces will be made by the use of a portable alpha meter to measure concentration of uranium and a portable dose rate meter to measure the relatively short half-life beta emitters, Th-234 and Pa-234.

Clean-up of furnaces will be by removing the radioactive deposits with wet emery paper and rags. Cleaning may also be accomplished using dilute nitric acid. In the event the heat shields or other furnace parts are excessively contaminated, they will be removed from the furnaces, properly packaged together with the wastes from the decontamination operations and disposed of by a licensed waste disposal contractor.

Decontamination will be considered complete at an activity level of 500 d/m/100 sq cm.

With reference to the use of respiratory protective equipment in

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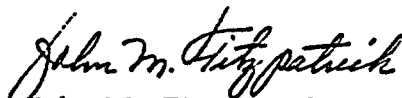
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knocking out castings from arc-melt molds, we do not anticipate that concentrations of airborne radioactivity at any time will exceed the values in 10CFR20, Appendix B, Table I, Column 1, and certainly not if averaged over a forty hour period. Removal of castings from the molds is essentially a clean operation. Inasmuch as the condition of the casting cannot be determined prior to its removal from the mold we feel it is proper to provide protection for our workers in the remote event that airborne concentrations should be exceeded even for very short times.

We do not therefore desire authorization to use respirators.

Very truly yours,



John M. Fitzpatrick
Manager, Technical Services

JMF:p