

MARTIN COMPANY

In reply
refer to: ACC-310

July 7, 1964

J. S. ATOMIC ENERGY COMM.
REGULATORY
MAIL SECTION

1964 JUL 7 PM 2 57

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U. S. Atomic Energy Commission
Division of Materials Licensing
Washington 25, D. C.

Attention: Mr. Kenneth Lauterbach

Subject: Proposed Amendment No. 22 to Martin Marietta
Special Nuclear Material License No. 53.

Gentlemen:

With the change in policy by the AEC to establish all health and safety aspects of special nuclear material processing under license, we request license approval for several processing steps previously approved by the New York Operations Office of the AEC through the feasibility report mechanism. These steps will be included in our overall SNM-53 renewal, but prior approval is required to permit fabrication of preliminary nuclear components for the Argonne Advanced Research Reactor. The steps include coating, tube extrusion, and hydrostatic pressing, which will be discussed in this submission.

Since we consider these steps basic and straightforward, approval by July 24th is desired.

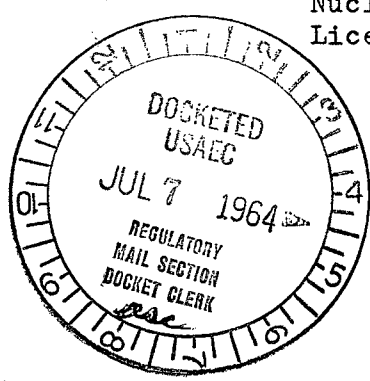
Very truly yours,

CWKeller

C. W. Keller
Nuclear Accountability and
Licensing Representative

CWK/nj

Encls.



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ACKNOWLEDGED

A DIVISION OF
MARTIN
MARIETTA

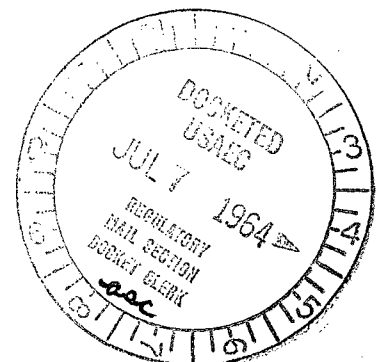
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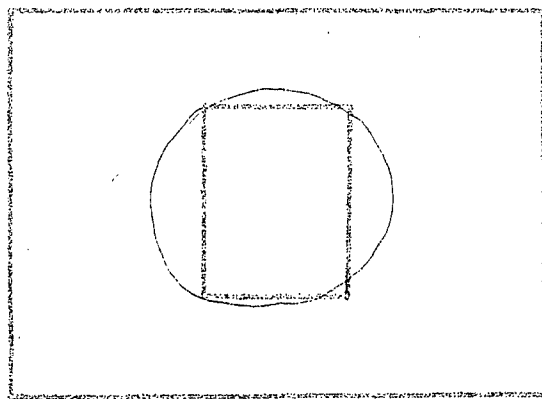
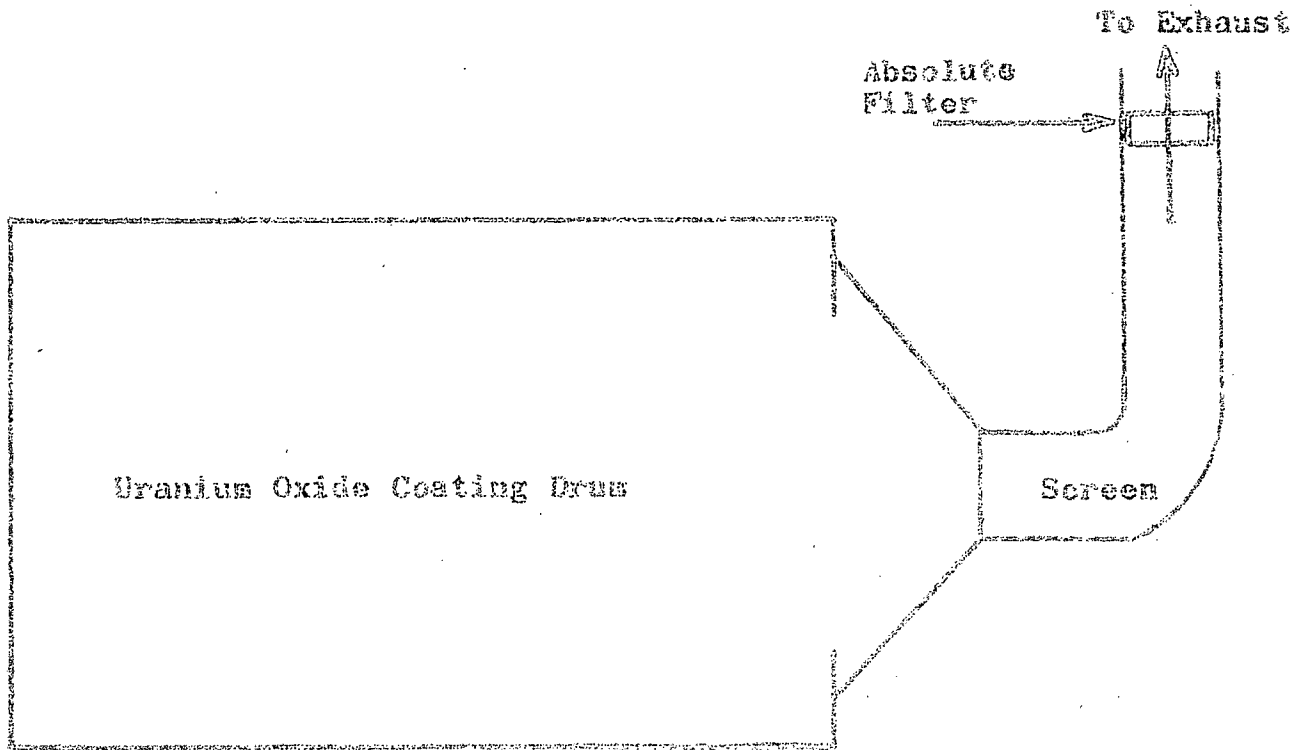
COATING OF URANIUM OXIDES

To provide a more homogeneous fuel matrix, highly enriched spherical uranium oxides are coated with various metals, such as stainless steel, tungsten, molybdenum, and others dependent on the final application of the matrix. The coating of the primary uranium oxides also improves bonding qualities in connection with the fabrication of completed fuel components.

Coating is accomplished through spraying the uranium oxide in a revolving drum contained in a separate exhaust hood fabricated for this purpose. The picture and drawing of the installation show the details of the operation. Spray apparatus, located outside the revolving drum, is used to introduce the metal powder for coating of the uranium oxide contained in the drum. Exhaust draft is such to prevent escape of the uranium oxide through the opening of the drum and to minimize removal of material to the exhaust ductwork. An adequate filter system, as depicted in the drawing, prevents any escape of coated particles. Uranium balance between uncoated and coated material has shown insignificant uranium loss to the exhaust system.

A mass limit of 800 gms U-235 which corresponds to approximately 950 gms of UO_2 has been established for the coating operation. Thorough removal of all coated material shall be made between processing batches of 800 gms U-235 and it is Martin line responsibility to assure that inadvertent mixing with other powder does not occur. This responsibility is also supported by strict material control by Martin Nuclear Materials Management. It shall be the responsibility of Martin Nuclear Materials Management to assure that coated material has been removed from the coating drum, prior to issuing additional material for coating. This will normally be defined by return of coated material to the vault, prior to issuing additional starting material. There is no internal sprinkling system installed in the general work area to provide inadvertent flooding of the coating hood, which is separated from other processing hoods by a minimum of two feet. Final composition of coated material will usually not exceed 50% uranium oxide in coated powder.





Front View

COATING SYSTEM