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Mallinckrodt
FINE CHEMICALS
Standard Since 1857

July 10, 1956

Mr. Lyall Johnson
Licensing Division
U. S. Atomic Energy Commission
1901 Constitution Avenue
Washington 25, D. C.

Dear Mr. Johnson:

Reference is made to our application for a special nuclear material license covering our Hematite, Missouri facility, transmitted with our letter of May 15, 1956, and additional data submitted in our letter of June 18, 1956. In addition to the material submitted in these letters, you recently asked that we evaluate the possibility of non-nuclear accidents including fires that in our opinion, could result in the spread of radioactive contamination. You also requested that we enumerate the steps taken to minimize such accidents and to minimize the hazards if such an accident should occur.

In our opinion the possibility of a non-nuclear accident at the Hematite plant is extremely remote. This is based on the fact that the entire design criteria of the building, equipment, and layout were directed toward minimizing such accident possibilities. The following are specific instances of such safety planning:

1. The main production building is fire resistant-i.e. no inflammable material is exposed. Entire structure is steel-concrete.
2. The storage vaults are non-combustible-i.e. all reinforced concrete construction. This affords maximum protection at the point of maximum uranium concentration.
3. No direct openings to the sewer in the two production areas preventing spread of radioactivity in case of a liquid spill or accidental water spray.
4. Main processing building and storage vaults no less than 50 feet apart.
5. Hydrogen (cylinders) storage more than 65 feet from nearest building.
6. Raw material and finished product stored in "always safe" bird cages of rugged fireproof design.

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7. Floor elevation of all areas more than 10 feet above 100 year flood maximum.
8. Cylinders in process are contained within forced draft hood equipped with adequate scrubbing systems.
9. Operating procedures are designed to have a minimum quantity of uranium actually in the production area.
10. All dusty operations will be enclosed in dry boxes to isolate dust and minimize air borne contamination.
11. Ample CO₂ type fire extinguishers will be available in production building and in storage vaults.
12. All moveable equipment such as dollies, fork trucks, etc. will have rubber tires to reduce hazard.
13. Storage vaults are designed to permit two bank storage of single layers of bird cages with large center working aisle to facilitate accessibility.

These features, we believe, offer the maximum built-in safety possible and should preclude the possibility of a non-nuclear accident causing spread of radioactivity.

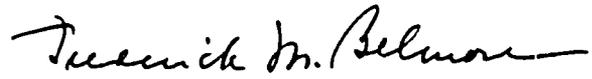
In case of a non-nuclear accident such as a fire, or violent chemical reactions, the following provisions have been or are being made to limit the extent of damage and to minimize spread of radioactivity outside the land under our control:

1. The entire facility which occupies about 5 acres is centrally located on 150 acres of farm land. This goes far to eliminate the possibility of radioactivity spreading beyond our property line.
2. Plant operators, foremen, and engineers are organized into trained fire brigades and given thorough instruction in handling all situations both from the standpoint of personnel protection and property protection.
3. Adequate equipment such as extinguishers, gas masks, chemically resistant suits, and first aid supplies are provided at the facility for use by the fire brigades.

4. Close liaison with the local fire prevention authorities is maintained to be certain that the special nature of any problems that might arise are completely comprehended by these officials. This educational program will be a continuing type of program with frequent contacts by the Mallinckrodt Safety Engineers with the local fire department. It will include such items as plant visits and inspections by the local fire marshal, explanations of special situations that might occur and how they should be handled. Our past experience in the Uranium Division has demonstrated that the local fire fighting personnel are eager to cooperate in such a program and are quite willing to heed instruction and direction of specially trained "fire brigade" personnel in dealing with these problems.

This overall program should afford us maximum protection in the prevention of accidents as well as provide adequate facilities to curtail the area and extent of damage in the remote event of accident or fire.

Very truly yours,

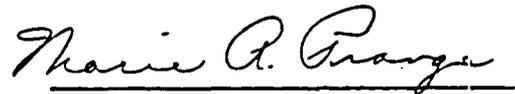


Frederick M. Belmore
Special Asst. to the President

FNB/WML/ck

CITY OF ST. LOUIS
STATE OF MISSOURI

Subscribed and sworn to before me this 10th day of July, 1956.



NOTARY PUBLIC

My Commission Expires December 10, 1958