

S. F. Appliances Limited
613 W. Washington Street
Morris, Illinois 60450

December 15, 1986

William J. Adam, Ph.D.
U. S. Nuclear Regulatory Commission
Region III
Materials Licensing Section
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Control No. 381847
Pending Renewal of License No. STB-258

Dear Dr. Adam:

This is in response to your October 1, 1986 letter requesting additional information concerning our renewal application for license MSTB-258. Our response uses the same numerical order as used in your letter.

1. Decontamination of Off-Site Areas:

Off-site contamination above guidelines noted on the Oak Ridge Associated Universities October 26 - 31, 1986 survey report were cleaned on November 17, 1986. Contaminated soil from south and west of S.F. Appliances, Ltd. property was removed to S.F. Appliances property. An area north of the northeast end of our building identified on Figure 13 of that report as having generally elevated radiation levels could not be located. A survey of that area at ground surface using a sodium iodide detector failed to show radiation levels above normal background.

Contaminated soil relocated to S.F. Appliances property will be included in the long term decommissioning plans.

2. Decommissioning Plan:

Attached is our long range plan for decommissioning of the S.F. Appliances, Ltd. facilities at such time as it is to be released for unrestricted use.

3. Filtration System:

A particulate cartridge type filter will be installed in the exhaust ductwork of the preburning process line if necessary to maintain effluent levels of radioactive materials below the 10 CFR 20 limits. Initial measurements at the release point of the stack above the rooftop indicate filtering should not be needed. Because of the inadequacy of this type of sampling, an isokinetic stack sampler is being installed in the ductwork for regular sampling. If this

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sampling indicates additional filtering will be needed, we will install a filter such as an Ultra-Web cartridge filter from Torit Division/Donaldson Company, Minneapolis, MN. These filters will remove greater than 95% of particulates down to a size of 50 microns. Manufacturers recommendations for maintenance and exchange of filters will be followed. Stack sampling beyond the filter will be used to verify the adequacy of the filter system.

4. ALARA Program:

Attached is a copy of the ALARA program we have prepared for S.F. Appliances, Ltd.

5. Air Sampling:

Air samples will be collected on 47 mm. glass fiber filters (Gelman Sciences Model Type A/E or equivalent) using an Eberline RAS-1 Regulated Air Sampler. Flow rates will be verified with a flow meter.

Samples will be collected at breathing zone level on each floor where radioactive materials are used or stored.

A Ludlum Model 43-2 Alpha Scintillation Probe detector and scaler will be used to assay the air sample filters. We have measured the alpha detection efficiency of this system to be approximately 28% using an NBS traceable Th-230 alpha source. Filter samples will be assayed at 5 - 17 hours after collection for thoron daughter activity and evaluated with respect to the 10 CFR 20 Pb-212 concentration limits. They will again be assayed after at least five (5) days decay and evaluated with respect to the 10 CFR 20 natural thorium air concentration limits.

We have determined the minimum detection limits of this system to be approximately $1 \text{ E-13 } \text{-Ci/ml}$.

6. Controlling Abnormal Occurrences:

- a. A heat sensitive sprinkler system has been installed throughout the building to aid in extinguishing any potential fires. This system is designed to sprinkle even if the electrical power is interrupted.

We do not have full-time radiation alarm systems at our facility and feel this would be of limited usefulness, due to the low direct radiation levels. A release of radioactive materials would not significantly change the ambient direct gamma radiation levels, due to the continuous storage of thoriated mantles at various locations throughout the facility. Radiation monitoring equipment was described in our renewal application.

- b. The heat-activated sprinkler system is set by the supplier to activate at a temperature of approximately 120 degrees F.

- c. In addition to the automatic fire extinguishing system, manual fire extinguishers are located on each floor level. Employee instructions for use of these extinguishers are attached. The extinguishers are maintained and recharged annually by the supplier.
- d. The local fire department makes regular visits to the S.F. Appliances facilities and has been made aware of the materials present.

In the event of an emergency involving the thorium or thoriated mantles, supervisory personnel will notify the appropriate agencies from the following list:

- i. Fire Department
- ii. Emergency Services Disaster Agency
111 E. Washington
Morris, IL 60450
(815) 942-2893
- iii. Illinois Department of Nuclear Safety
Radiological Assistance Team
1035 Outer Park Drive
Springfield, IL 62704
(217) 782-7860
- iv. U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137
(312) 790-5500

7. Chemical/Physical Form:

Only thoriated gas mantles will be used at our facilities. If there are any changes in these plans, we will first request a license amendment and submit additional information. S.F. Appliances still possesses some granular thorium nitrate from previous manufacturing processes. We only request authorization to store this until a satisfactory method can be found to transfer it to another authorized individual or dispose of it according to applicable regulations.

Thank you and we look forward to receiving a renewed license from your agency.

Sincerely,

Bonnie J. Joneson
Radiation Safety Officer