OCT 2 9 1985

License No. SUB-238 Docket No. 040-02253 Control No. 103787 878

Department of the Army U. S. Army Material & Mechanics Research Center ATTN: William A. Lorenzen Health Physicist Watertown, Massachusetts 02172-0001

Gentlemen:

This is in reference to your application dated March 29, 1985 to renew License No. SUB-238. In order to continue our review, we need the following additional information:

- Please indicate the percent by weight of uranium-235 contained in the depleted uranium you will be using.
- 2. Your present license permits the use of depleted uranium at the indoor test facilities at the U. S. Army Natick Materials Laboratories, Sudbury Annex, Maynard, Massachusetts. Your application did not mention this use. If you plan to continue the use of materials at Natick, please describe the facilities, radiation safety procedures, to be used at that facility, procedures for transportation of materials to and from that facility and waste disposal procedures.
- 3. Regarding your employee training program, please submit the following:
 - a. The duration and frequency of training;
 - b. Your means for testing the comprehension of training participants;
 - c. Your means for recording participation in training;
 - d. The name, title, and qualifications of the individual responsible for conducting the training. This training should consist of at least 40 total hours in the following topics:
 - Principles and practices of radiation protection.
 - Radioactivity measurements, monitoring techniques, and the use of instruments.
 - Mathematics and calculations basic to the use and measurement of radioactivity.
 - Biological effects of radiation.
 - Safety practices applicable to protection from the radiation, chemical toxicity, and pyrophoric and explosive properties of source materials.

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ML 136/LTR - 0001.0.0 10/26/85

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- 4. Submit a drawing of all work areas where radioactive materials, will be used, processed or stored. Include receiving and shipping areas as well as radioactive waste handling areas. The drawings should be drawn to an indicated scale and should show the relationship and distance between identified restricted areas, where radioactive materials are handled, and unrestricted areas such as eating areas and offices.
- Submit with your facilities diagram a schematic description of the ventilation system. This description should include air flow rates, filtration equipment and air and effluent monitoring instruments.
- 6. In order to prevent the spread of contamination from restricted areas to unrestricted areas and minimize personnel exposure, a personnel contamination monitoring program should be developed. This would include monitoring the hands, hair, clothing and shoes of individuals before crossing from a restricted area to an unrestricted area. Please submit your personnel contamination monitoring program. Include allowed crossover points between restricted and unrestricted areas, where monitoring will be done, on your facilities diagram.
- Confirm that individuals who participate in activities which have potential for substantial extremity exposures, such as melting and casting activities, will be provided ring dosimeters.
- 8. Regarding your bioassay program, you indicated that bioassays are required of individuals who work in areas where air samples indicate a 24 hour average of greater than ten times the maximum permissible concentration specified in Appendix B, Table 1, Column 1 of 10 CFR 20. This requirement implies that individuals could be exposed to air concentrations leading to intakes of up to 240 MPC hours without bioassays being required. This limit appears to be excessively high. Please reevaluate your requirements for bioassays and resubmit. In addition, submit the concentration level for uranium in urine, which will trigger an investigation of the incident responsible for the uptake. You may refer to Regulatory Guide 8.11, "Applications of Bioassay for Uranium" (enclosed) to assist you in providing this information.
- 9. Provide information about your air sampling program. Describe the areas where samples will be taken, the frequency of sampling, and the location of the sampler with respect to restricted and unrestricted areas.
- 10. Regarding your instrument calibration procedures, confirm that your survey instruments will:
 - a. be calibrated so that the readings are $\pm 20\%$ of the actual values over the range of the instrument,
 - b. have a calibration chart or graph affixed to the survey meter that shows the results of the calibration, the date of the last calibration, and the due date for the next calibration, and

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ML 136/LTR - 0002.0.0 10/26/85

2

c. be calibrated at least annually and after servicing.

Also state that calibration records will be kept for a minimum of 2 years after each calibration and identify who will calibrate the instruments.

- Please provide the following additional information regarding your waste disposal program:
 - a. An assessment of the quantity of types of wastes to be generated.
 - b. Your method of recording receipts, transfers, and disposals.
 - c. A description of your storage facilities and methods used to secure waste against unauthorized access and to prevent weathering or other damage that could result in release of source materials.
 - d. The name and license number of the waste disposal company you will be using.

 Provide the following additional information regarding your radiation safety program:

- Methods for auditing and ev luating the effectiveness of your radiation safety program;
- b. The formats (or forms) to be used by your personnel for recording:
 - Results of personnel monitoring
 - Results of radiological instrument calibrations
 - Results of radiological surveys
 - Quantities of radioactivity in effluents
 - Inventories (receipts, transfers, or disposals) of source materials
 - Accident and incident investigation reports
 - Audits and evaluation of radiation safety program.

We will continue our review upon receipt of this information. Please reply in $\frac{duplicate}{103878}$ to my attention at the Region I office and refer to Mail Control No.

Sincerely,

Original Signed By: John E. Glenn

John E. Glenn, Ph.D., Chief Nuclear Materials Safety Section B Division of Radiation Safety and Safeguards

Enclosure: Regulatory Guide 8.11 WRI:DRSS Wurtz/cop 10/98/85 RI:DRSS Glenn 10/98/85 DEFICIAL

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ML 136/LTR - 0003.0.0 10/26/85