

MAY 20 1985

Magna Chek, Inc.  
ATTN: David B. Cardwell  
Radiation Safety Officer  
2125 Riggs Street  
Warren, MI 48091

Gentlemen:

Enclosed is your NRC License Number 21-19111-02 in accordance with your request.

Several new conditions have been incorporated in your license. In view of this, please review your license carefully to assure that you understand and are in compliance with the terms and conditions contained therein. Please note that in order to increase your possession limits for cobalt-60 in the "cyclops" unit you should submit the following information:

1. Shielding Evaluation

Submit detailed calculations of maximum radiation levels that will exist in each area (restricted and unrestricted) adjacent to and above the radiography room. The calculations should include the following:

- a. Provide calculations for each area adjacent to the radiography room, taking into consideration contributions from primary, leakage (with the source in the "on" position) and scattered radiation. Your calculations must include appropriate units and all assumptions used.
- b. Specify all parameters used in your calculations. These parameters include such factors as beam orientation, maximum field size, scatter angle, scatter ratio, distance to scatterer, distance to area of concern, type and thickness of material(s) used in barrier, and transmission factor of barrier.
- c. Calculations must also be provided for "worst case" situations (e.g., use of maximum beam size; exposures in one hour using the critical orientation that produces high radiation levels in an adjacent area; calculations based on use of unattenuated primary beam where appropriate; calculations considered situation within capabilities of the unit that are not prohibited by electrical and/or mechanical stops, regardless of the usefulness of the orientation).
- d. Indicate the maximum anticipated workload data (e.g. maximum "on time" per hour and per week).
- e. Calculations for unrestricted areas must consider continuous occupancy (i.e., occupancy factor of unity).
- f. Results of calculations are to be expressed in terms of millirems in any 1 hour and millirems in any 1 week.

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2. Compliance with 20.105

Should calculations indicate that the limits specified in 20.105 can not be met in adjoining unrestricted areas, it will be necessary to outline steps taken to prevent overexposures to radiation. Options you may consider are:

- a. Beam orientation may be restricted (e.g. using electrical or mechanical stops) to limit the anticipated radiation level. You might decide to place additional limitations on the use of the primary beam beyond those specified in your response.
- b. Add shielding to the barrier in question, i.e., modifying the facility description.
- c. You may request an exemption and demonstrate that the requirements of paragraph 20.105(a) of 10 CFR Part 20 are met. In this case, the applicant must include information on average radiation levels and anticipated occupancy times for each unrestricted area. The applicant must also maintain records to support the assumptions used in justifying the request for an exemption.
- d. You may designate and maintain the area as restricted. If this option is selected, then provide information as described below:
  1. The physical and administrative controls used to restrict access to the restricted area.
  2. The number, wording, size, and location of warning signs to be placed in the vicinity of the restricted area.
  3. The program for ensuring that personnel entering the restricted area receive proper instruction in accordance with Section 19.12.
  4. The program for ensuring that personnel entering the restricted area are monitored in accordance with Section 20.202.
  5. The surveys that will be performed in accordance with Section 20.201.

Please review the enclosed document carefully and be sure that you understand all conditions. You must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

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2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address.
5. Request and obtain appropriate amendment if you plan to change ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. Any amendment request should be accompanied by the appropriate fee specified in 10 CFR Part 170.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material prior to your expiration date.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions and representations in your license application will result in enforcement action against you in accordance with the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

If you have any questions or require clarification of any of the above stated information, contact us at (312) 790-5625.

Sincerely,

Original Signed By  
J.R. Madera  
Materials Licensing Section

Enclosure(s): License No. 21-19111-02

RILL  
JRM  
Madera/cm  
05/07/85