IMMEDIATE ACTION LETTER

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

[redacted] PDR

MAR 14 1979

70-1379

Parkwell Laboratories,
Incorporated
ATTN: Mr. Charles E. Wells
President
429 North High Street
Croton, OH 43013

License No. SNM-1347

Gentlemen:

This refers to the telephone conversation of March 12, 1979, between you and Messrs. A. B. Davis, J. A. Pagliaro, and J. A. Finn of my staff regarding your expired NRC License Number SNM-1347 and our concerns about the levels of alpha contamination in your facility. Region III inspectors performed an inspection and radiation surveys of your facility and found that your facility is contaminated to levels exceeding those specified in the "Guidelines For Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use or Termination of Licenses For Byproduct, Source, or Special Nuclear Material" which is enclosed as Appendix A.

Because the levels of contamination exceed exempt quantities you are in noncompliance with 10 CFR 70.3 License Requirements, which states, "No person subject to the regulations in this part shall receive title to, own, possess, use, or transfer special nuclear material except as authorized in a license issued by the Commission pursuant to these regulations."

We understand that you plan to decontaminate the facility, dispose of the material and release the facility for unrestricted use.

Prior to release of your facility, equipment, and supplies to unrestricted use, we understand you will:

1. Lock your facility when it is unattended by you.

2. Restrict access to Rooms 7 and 8 except for survey and decontamination efforts, and not remove items from these Rooms until they are decontaminated as discussed below.

3. Provide NRC Region III with the survey results of the facility performed as per the instructions for conducting surveys in Appendix B.

2047 323

IMMEDIATE ACTION LETTER

C

4. Prepare a Decontamination Plan based on the survey (Item 3) and submit the plan to NRC Region III for review and approval. See Appendix C for guidance.

5. Conduct decontamination of the facility, etc. and provide NRC Region III with a report of the final survey results.

6. Not use the facility for any activities until the NRC Region III approves the facility, etc. for release to unrestricted use. This will be done expeditiously by NRC Region III.

Please provide the NRC, Region III Office with your schedule for implementation of this program within two (2) weeks of your receipt of this letter.

If you have any questions or if your understanding of the above is different than ours, please call Mr. Jesse A. Pagliaro at 312-858-2660.

Sincerely,

Glen W. Roy
for James G. Keppler
Director

Enclosures:
1. Appendix A, Guidelines for Decontamination of Facilities and Equipment
2. Appendix B, Instructions for Conducting Surveys
3. Appendix C, Guidance for Preparation of Decontamination Plan

cc w/encls:
Central Files
Reproduction Unit NRC 20b
PDR
NSIC
J. H. Sniezek, IE
L. B. Higginbotham, IE

2047 524

DRAFT

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

U.S. Nuclear Regulatory Commission
Division of Fuel Cycle and Material Safety
Washington, D. C. 20555

The instructions in this guide in conjunction with Table I specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table I do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control will be considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering matrial unless contamination levels, as determined by a survey and documented, are below the limits specified in Tables I prior to applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table I. A copy of the survey report shall be filed with the Chief, Materials Branch, Division

of Fuel Cycle and Material Safety, USNRC, Washington, D.C. 20555, and also the Director of the Regional Office of the Office of Inspection and Enforcement, USNRC, having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

a. Identify the premises.

b. Show that reasonable effort has been made to eliminate residual contamination.

c. Describe the scope of the survey and general procedures followed.

d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

TABLE I

ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES[a]	AVERAGE[b c f]	MAXIMUM[b d f]	REMOVABLE[b e f]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm^2	3000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm $\beta\gamma$/100 cm^2	15,000 dpm $\beta\gamma$/100 cm^2	1000 dpm $\beta\gamma$/100 cm^2

[a] Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f] The average and maximum radiation levels associated with surfce contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

APPENDIX B

Instructions for Conducting Preliminary and Final Survey of Facilities, Equipment, Auxiliary Machinery and All Items Used in the Facility. In addition to the guidelines in Appendix A, the following applies.

1. Instruments and Supplies to be Used

   a. Direct Surveys

      (1) α - recently calibrated portable α survey meter
      (2) $\beta\gamma$ - recently calibrated $\beta\gamma$ survey meter
      (3) α, $\beta\gamma$ sources for operability and reproducibility checks

   b. Smear Surveys

      (1) α - gas proportional counter
      (2) $\beta\gamma$ - gas proportional counter
      (3) smear paper
      (4) α, $\beta\gamma$ sources for instrument efficiency determination

2. Area to be Surveyed

   a. Direct and Smear

      (1) Preliminary - spot checks to assess levels of contamination present, fixed and removable.
      (2) Final - survey total area of horizontal surfaces, machinery, equipment and other items in the facility.

3. Criteria to be Used - See Appendix A

4. Reporting

   a. Direct Surveys

      (1) Units

         (a) α - dpm/100 cm^2 for average and maximum values.
         (b) $\beta\gamma$ - dpm/100 cm^2 for average and maximum values.

      (2) Identify Contaminating Isotope

b. Smear Surveys

(1) Units

(a) α - dpm/100 cm^2 for maximum values.
(b) $\beta\gamma$ - dpm/100 cm^2 for maximum values.

c. Instruments Used.

d. Sources Used for Calibration

(1) Nuclide
(2) Strength

e. Instrument Efficiencies

APPENDIX C

The following items should be covered in your decontamination plan.

1. The provision to decontaminate all surfaces, supplies and equipment in your facility and roof of this facility to levels given in Appendix A.

2. The methods to be used to accomplish the decontamination, including control of materials, minimization of waste, and protection of workers.

3. Radiation surveys to be conducted to assure personnel protection and control of spread of contamination.

4. Methods to be used to dispose of equipment and decontamination materials.