APPENDIX A
NOTICE OF VIOLATION

Virginia Commonwealth University

License Nos. 45-00048-17
& 45-00048-19

Based on the NRC inspection August 6-8, 1980, certain of your activities were apparently not conducted in full compliance with NRC requirements as indicated below. These items have been categorized as described in correspondence to you dated December 31, 1974.

License No. 45-00048-17

A. As required in part by Condition 13.C., of your license, each sealed source containing byproduct material, other than hydrogen-3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months except that each source designated for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months.

Contrary to the above, a sealed source containing 248 microcuries of barium-133 received on July 27, 1978, and a sealed source containing 212 microcuries of cesium-137 received on July 27, 1978, were not tested for leakage and/or contamination until April 28, 1980.

This is an infraction.

B. As required by 10 CFR 35.14(b)(5)(vii), the licensee must assure that patients treated with cobalt-60, cesium-137, or iridium-192 implants remain hospitalized until a source count and a radiation survey of the patient confirm that all implants have been removed.

1. Contrary to the above, on August 8, 1980, a cesium-137 implant patient was not surveyed after the removal of the sources to confirm that all implants had been removed.

   This is an infraction.

2. Contrary to the above, the licensee's source inventory log does not clearly indicate the number of sources returned to storage after the sources were removed from the patient and counted.

   This is a deficiency.

C. As required in part by 10 CFR 20.203(f), each container of licensed material shall bear a durable, clearly visible label identifying the radioactive contents. This label shall bear the radiation caution symbol and the words "CAUTION, RADIOACTIVE MATERIAL", or "DANGER, RADIOACTIVE MATERIAL". It shall also provide sufficient information to permit individuals handling or using the containers or working in the vicinty thereof, to take precautions to avoid or minimize exposures.

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Contrary to the above, on August 8, 1980, the licensee possessed iridium-192 implant seeds in three lead pigs that did not bear the radiation caution symbol, and one of the lead pigs did not bear a label identifying the radioactive contents.

This is a deficiency.

License No. 45-00048-19

D. As required in part by the Nuclear Regulatory Commission's Order dated May 7, 1980, each license that authorizes possession and use of byproduct material for use in teletherapy equipment was amended to add the following conditions:

(1) As soon as possible, but no later than 90 days from the date of this Order, each teletherapy room shall be equipped with a radiation monitoring device which continuously monitors the teletherapy beam condition and is equipped with a back-up battery power supply for emergency operations. This device shall energize a visible signal to make the operator continuously aware of teletherapy beam condition in order that appropriate emergency procedures may be instituted to prevent necessary radiation exposure. Operating procedures shall be modified to require daily operational testing of the installed radiation monitor.

Contrary to the above, on August 8, 1980, the radiation monitoring device installed in the cobalt-60 teletherapy room used for treatment of humans, contained an emergency back-up battery power supply that was inoperable.

This is an infraction.

E. As required in part by 10 CFR 35.22, any licensee authorized to use teletherapy units for treating humans shall cause spot-check measurements to be performed on each teletherapy unit at intervals not exceeding one month. Spot-check measurements shall be performed in accordance with procedures established by an expert qualified by training and experience in accordance with 10 CFR 35.24. If a qualified expert does not perform the spotcheck measurements, the results of the spot-check measurements shall be reviewed by a qualified expert within 15 days.

Contrary to the above, spot-check measurements performed during the months of June and July of 1980, were not performed in accordance with procedures established by a qualified expert. The calibration procedures used were not in writing and did not adequately determine the accuracy of all distance measuring devices used for treating humans, as determined by discussions with the licensee's physicist, and the person that performed the spot-check.

This is an infraction.

E. As required in part by 10 CFR 35.25(b), records of monthly spot-check measurements that are required by 10 CFR 35.22, shall be preserved for two years after completion of the spot-check measurements.

Contrary to the above, records of monthly spot-check measurements performed during the period of July 1979 - May 1980, could not be located and were not available for inspection, as determined by statements by your physicist.

This is a deficiency.