

# Northwestern Memorial Hospital



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July 29, 1985

Mr. D. G. Wiedeman, Chief  
Nuclear Materials Safety  
Section 1  
US Nuclear Regulatory Commission  
Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Dear Sir:

Regarding License No. 12-02501-03  
License No. 12-02501-05

In response to your letter dated July 2, 1985 regarding item of noncompliance No. 1: On July 24, 1985 we performed a full calibration of our Philips Cobalt machine. The relative output factors were within -0.7% to + 0.2% of the factors in current use at 80 cm SSD. The relative output at 100 cm SSD was within 0.8% of that expected. The relative output at isocenter with the gantry in the four cardinal treatment positions was within +/- 0.4% which indicates that the center of the chamber was within 1.5 mm of isocenter. This is the same amount of walk that the isocenter of this machine has. The percent depth doses agreed to within 3% of our tabulated values for depths up to 15 cm. The absolute output was determined with our primary dosimetry system which had been calibrated at ADCL (University of Wisconsin) on April 4, 1984. It was found to be 1.9% high. The distance and field size indicators as well as the lasers and timer were found to be satisfactory.

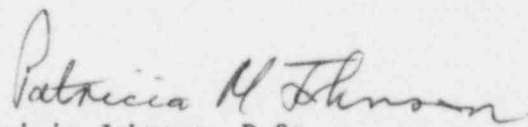
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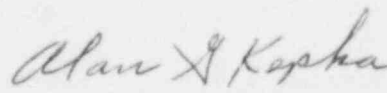
With regards to item of noncompliance No. 2: We performed monthly spot checks on June 17 and July 10, 1985 including the end-effect measurement and stop watch verification of the timer. This check will be repeated every month.

In an effort to avoid further noncompliance in these areas, we have established a formal schedule for when monthly spot checks and the next yearly calibration will take place. In addition, our technicians take spot output checks on a daily basis using a MONITREX system (radiation sensitive diodes with digital display). The device does not need T/P corrections and has the precision in its relative response to radiation to forwarn us if there is a daily change in ouput exceeding 2%. If this should occur, the techs are instructed not to treat until we investigate the situation. We rely on daily monitoring of all our radiation producing equipment in heavy use for our quality control program.

As long as we maintain our monthly spot and timer checks we are currently in compliance with our license as of July 24, 1985.

Finally, in reply to the last paragraph concerning Ir-192 sources, we are enclosing the final letter which was sent to Dr. Shetty and subsequently forwarded to Dr. Zimmer (RSO). This letter describes what action we will take to improve our method of inventory control of the Ir-192 seeds which we handle. Dr. Zimmer, on July 24, reinstated Dr. Shetty's licence to use this material.

  
Patricia Johnson, D.Sc.

  
Alan G. Kepka, Ph.D.

cc: Dr. Brand  
John Tighe, Assist. V.P. Diagnostic services  
Patrick Briggs  
Mike Zimmer, Ph.D. (RSO)

July 24, 1985

Dear Dr. Shetty:

In reply to Dr. Zimmer's letter to you dated July 24, 1985 we will survey the sealed source storage room after each time Iridium seeds are accounted for. In addition we will survey the tray over which the sources were repacked for shipment. This will be indicated on the IRIDIUM LOG sheet as shown in the attachment in two separate columns. Some indication of background radiation will be recorded in the appropriate column.

As stated before, we will count the seeds over a black plastic tray. In addition, the seeds will be counted in the presence of two people, a physicist and another member of our department excluding non-film badged personnel and pregnant co-workers. I am confident that with these measures that we will never lose Iridium seeds in the isotope storage room again.

A copy of this letter and the attached IRIDIUM LOG sheet sample has been sent to Dr. Zimmer, RSO, so that your license to use Iridium may be reinstated.

*Alan G. Kepka*

Alan G. Kepka, Ph.D.  
Radiation Physicist (Therapy)

cc: Dr. Brand  
Dr. Johnson  
Patrick Briggs  
Dr. Zimmer



\* Sources not implanted in the patient are returned in the pig and stored in the "old" Cobalt room until all sources are collected, packed and returned to the vendor.