KETTERING MEDICAL CENTER
3535 Southern Boulevard Kettering, Ohio 45429 513 298-4331

September 21, 1982

To:
Office of Inspection and Enforcement
USNRC Region III
799 Roosevelt Road
Glenn Ellen, Ill. 60137

SUBJECT

Request for Amendment to License #34-13857-01 to allow an increase in current possession limit of I-125 up to 2 mCi for the purpose of Iodinating polypeptide hormones including TSH.

BACKGROUND

Certain thyroid cancer patients do not respond to I-131 and the reason for this may be the lack of TSH binding to thyroid cells. Recently, at this institution, human thyroid cells have been grown successfully in tissue culture and to further look at TSH binding kinetics, a radio-receptor assay is planned using these cultured thyroid cells and I-125 labeled purified bovine TSH. The labeled purified bovine TSH is not available commercially.

METHODS

Iodination of the purified bovine TSH will be carried out in a fume hood using standard techniques. The fume hood is a Hamilton model PT 152-52395. This is in the Nuclear Medicine Department and the iodination will be performed in this area. (The floor plan and equipment is on file with the NRC per our previous license requirements). Wipe tests are done routinely currently but in addition, these will be performed after each iodination. The hot lab where the iodination is performed is monitored continuously with an ion chamber (Picker model 641401). Probe counts of the thyroid gland are done monthly on those individuals handling I-131. These counts would continue but the window would be widened to include I-125 and probe counts would be done after each iodination procedure. I-125 radioimmunoassay procedures are currently done in our laboratory but the possession limit for I-125 is less than 200 microcuries.

We would like to request our possession limit of I-125 therefore be increased to 2 mCi to allow iodination procedures to be undertaken in the Nuclear Medicine Department under the conditions described above.

Neil D. Martin, M.D.
Director of Nuclear Medicine

Approved By:

Elliott Fortner
Vice President