

EXIT Calculations for Iodine-131 Therapy

PATIENT NAME: [REDACTED]

DATE OF BIRTH: [REDACTED]

MEDICAL RECORD NUMBER: 66185

DATE OF ADMINISTRATION: 4/11/2014

AMOUNT ADMINISTERED: 162.0mCi

CALCULATION TERMS:

Occupancy factor = fraction of time exposed individual is assumed to be within the average distance chosen,

F1 = fraction of total administered activity associated with effective half-time T_{eff-1} ,

F2 = fraction of total administered activity associated with effective half-time T_{eff-2} .

2. ^{131}I -Sodium Iodide (NaI) - Thyroid Cancer Patients

Occupancy Factor 0.25

F1 (extra-thyroidal) 0.95

F2 (thyroid) 0.05

T_{eff-1} (extra-thyroidal) 0.32 days

T_{eff-2} (thyroid) 7.3 days

Activity (mCi) 162

Average distance (m): 1

OK

Clear

Total dose estimated for this exposure:

For exposure to 162 mCi of ^{131}I radiation to an individual at 1 meters, the estimated total amount of radiation received is 1.7 mSv or 1.7×10^2 mrem. Input data: Occupancy Factor = 0.25, F1=0.95, F2=0.05, T_{eff1} =0.32 days, T_{eff2} =7.3 days. This might have occurred due to a uniform whole body exposure of 205 days of exposure to natural background radiation.

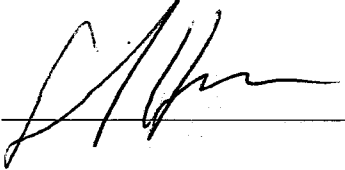
Calculations performed are based on the Health Physics Journal article ("Licensee Over-Reliance on Conservatism in NRC Guidance Regarding the Release of Patients Treated with ^{131}I ", Health Phys. 93(6):667- 677; 2007), and done using the online RADAR Patient Exposure Radiation Dose Calculator found at <http://www.doseinfo-radar.com/ExposureCalculator.html>

Calculated Radiation Amount: 1.7 mSv

NOTE: Patient is reliable if the total amount of radiation received is <5.0mSv

Nuclear Medicine Tech: 

Date: 6/30/14

Authorized User: 

Date: 6/30/14