VARSKIN 6



- An algorithm to compute ionizing dose to the skin following radiological contamination
- Photon dosimetry
 - attenuation, buildup, electron scatter
- Electron dosimetry
 - Bragg energy loss, backscatter
- The code agrees well with the EGSnrc probabilistic transport code



VARSKIN Use

- Used by NRC Staff and Licensees
- To show compliance with 10 CFR 20.1201(c) (or ICRP recommendations)
- As stated therein, the shallow dose equivalent to skin is calculated at the location receiving the highest dose within a 10 cm² (or 1 cm²) area at a tissue depth of 70 microns
- Various tissue depths and dose-averaging areas are possible

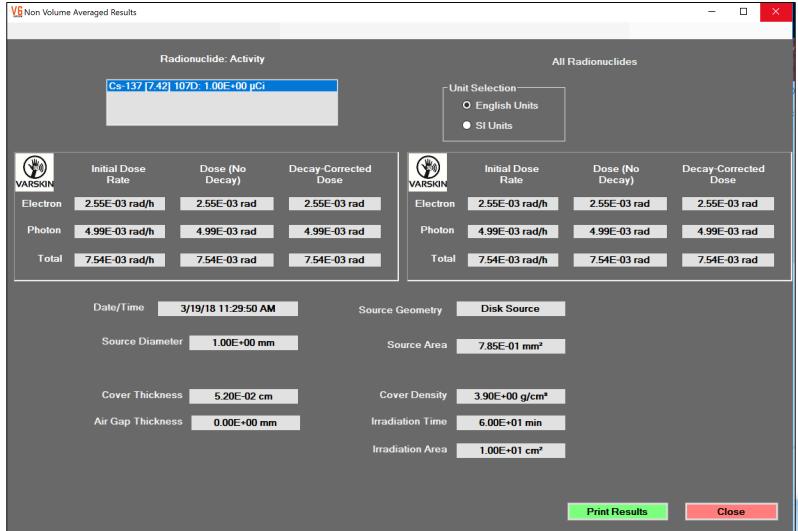


VARSKIN Methods

- Data entry is condensed to a single screen
 - includes specification of source geometry, nuclide(s), source strength, tissue depth, and protective clothing characteristics
- A point-kernel deterministic model is used for both photon and electron dosimetry
- Electron source term considers beta or positron emissions, with internal conversion and Auger electrons



VARSKIN Outputs





VARSKIN Information

- Current version is VARSKIN 6.0
- User's Group has ~350 members
 - http://www.usnrc-ramp.com/content/varskin-overview
- Our wish list includes:
 - User's Group technical conference
 - Web-based use
 - Injected-source scenario
 - Sensitivity/uncertainty methods
 - User entered mono-enegertic source emissions

