

RADTRAN 5 / RADCAT 1.0

Transportation Risk Analysis Package

The RADTRAN 5 software package provides a means of estimating the risks posed by transporting radioactive materials along different routes. This tool is capable of taking user inputs regarding the radioactivity of the materials being transported and parameters about the route being traversed, and return an estimate of the radioactive exposure to the transportation crew and those surrounding the vehicle along its route. Route parameters can include very specific information about the particular area being traveled through, such as population density and speed limit. The package is also capable of taking accident data and computing the radioactive exposure to those persons in the surrounding area during and after different accident conditions.

This package is particularly useful when an estimate is needed for:

- The average exposure amount due to transported radioactive materials along a route, both to passengers in vehicles sharing the route and the population surrounding the route.
- The maximum theoretical exposure amount to an individual during accident-free and travel.
- The exposure to persons surrounding the transportation vehicle during an extended stopping period.
- The exposure to the transportation crew.
- The risk to surrounding persons during and after different accident scenarios along a route.

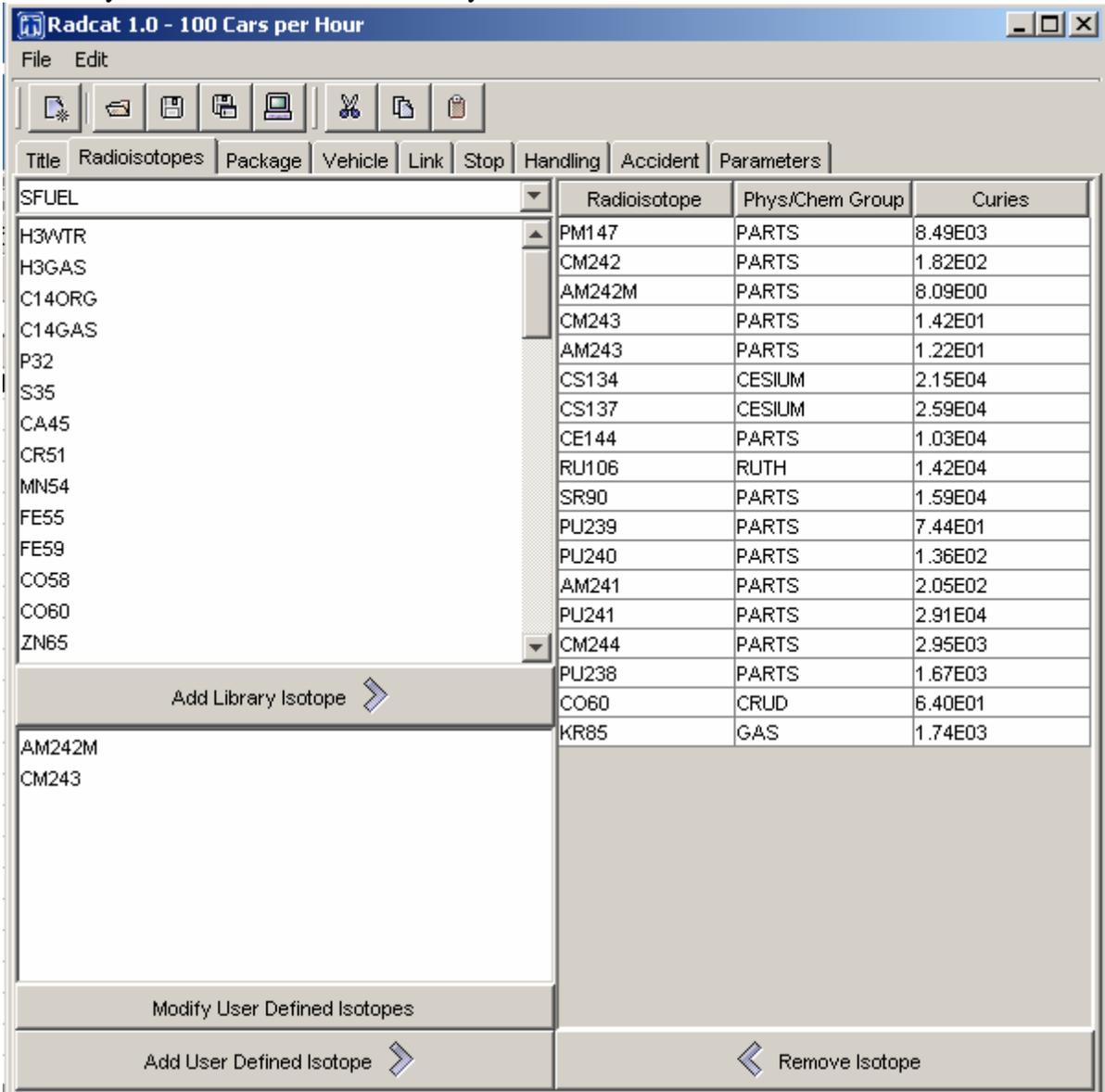
RADCAT 1.0 is a platform-independent graphical user interface (GUI), and is one of the means by which RADTRAN 5 receives its input data from the user. A sample window from this program can be seen on the next page. From this Java-based program, the user can easily input all route parameters, accident data, and radioactive material specifications. This information is then fed into RADTRAN 5.0, which computes the desired figures and returns the required information. RADTRAN 5.0 is also capable of receiving input data from more advanced users via hand-typed datasets.

The RADTRAN5/RADCAT1.0 package can be downloaded from <http://www.evolutionnext.com/radcat> and can then be run on a local computer without connection to the Internet. Several user guides, RADCAT help documentation, and a technical manual are available from http://ttd.sandia.gov/risk/doc_list.htm. A copy of the RADTRAN executable file (without the input file generator) that can be loaded on a PC may be requested by email from rfweine@sandia.gov. RADTRAN5 and RADCAT1.0 are copyright Sandia National Laboratories, 2003.

The output data received from RADTRAN 5.0 can be used when making routing decisions based upon user-defined criteria. Best of all, if only a single piece of a long route presents higher-than-acceptable risk, that individual piece can be altered at the users

request; this prevents the user from having to rework the entire route to find an acceptable solution.

The RADTRAN / RADCAT software package is a crucial tool in analyzing and comparing routing options for radioactive material transportation, and its GUI and flexibility make it a tool that is also easy to use.



Sample RADCAT 1.0 Window