These scripts are part of the lecture materials for my courses on reactor physics at Technical University of Munich. 2011 – 2016. The software comes as is, only for educational purposes and no warranties. © Dr.Sdl

Decay heat calculations are one of the most important part for reactor safety. Around 7% of the reactor power is generated by decay heat and it is still present when the reactor is shut down. It decays exponentially – nevertheless all the emergency core cooling tools are needed to safely remove it in all kind of accident scenarios. There are many best estimate codes like SCALE, SNF or FISPACT, eg. <http://fispact.ukaea.uk/validation/fission-decay-heat/>.. Because decay heat is so important a number of national standards have been established.

The decay heat calculation according to the German 1990 standard formula is very simple as compared to the updated standard from 2014. Old 1990 standard : <https://www.beuth.de/de/norm/din-25463-1/1549611> New 2014 standard : <https://www.beuth.de/de/norm/din-25463-1/194886177>

The 1990 standard also contains a simplified formula which in essence is an envelope function to cover different enrichments etc. As input you have to define a power history as a step-wise function.