SOFTWARE ERROR NOTIFICATION
Use continuation pages as necessary

ERROR IDENTIFICATION

Error Notice Identification Number: __16__   Page 1 of 1

Program Name: __RADTRAD__

Versions Affected: __3.03__

Error Classification: ☒ Safety-Related   ☐ Non Safety-Related
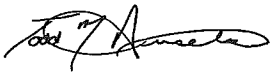
Associated CAR Number(s): __2011-023__

DESCRIPTION OF PROGRAM ERROR

RADTRAD has the capability to analyze the decay of radionuclides from the time of shutdown. The ability was first implemented in version 2.02 with full implementation in version 3.02 and additional modification to allow multiple source term compartments was implemented in version 3.03. All options were separate effects tested in version 3.03.

This program error was found to only occur if the user selects: (1) a timed release, i.e. TID and puff releases (as in a fuel handling or main steam line break scenario) are not affected, (2) more than one compartment receives a part of the released radionuclides (common in sprayed containments), and (3) radionuclide decay. The combination of timed release, decay, and multiple compartments was not correctly implemented; instead the initial fuel inventory is decayed each time a source compartment is entered.

This error means that the nuclides available for release will be reduced. If the user has two source term compartments the radionuclides available for release at 1 hour is reduced to 58% of what is correct and when there are 3 source term compartments to approximately 34% - this is non-conservative.
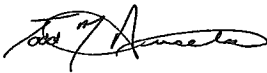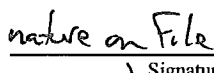
PROGRAM USER NOTIFICATION

S/W Users Notified: _____   __Jan 12, 2012__
                         Signature   Date

RECOMMENDATIONS TO PROGRAM USERS
Several test cases have been executed to determine the extent of the condition and, with the exception of a single case, typical changes to the dose were found to be less than 0.5%. In one case, the change in dose was quantified to be 0.2 Rem. The results from these test cases indicate that this change in dose is well within the margins for which the analyses apply.

Concerned users may rerun their cases in multiple runs, i.e. one run for each source term compartment and then sum the dose results to obtain the correct answer.

COMPLETION/APPROVAL/CLOSE-OUT

Program Manager: __Todd M Anselmi__   _____   __Feb 20, 2012__
                      Printed/Typed Name   Signature   Date

Program POC: __Jerry Heeumes - Original Signature on File__   __2/20/12__
                      Printed/Typed Name   Signature   Date

QA Manager: __R. William Seies__   _____   __2/20/12__
                      Printed/Typed Name   Signature   Date