Error Notice Identification Number: __07_____   Page _1___ of _1___

Software Name:_____RADTRAD_____

Versions Affected: _____3.03_____

Error Classification: _X_ Safety-Related ___ Non Safety-Related

Description of Error: The addition of offsite dose calculations to the control room dose calculation reduced the control room dose by a factor of 2.

Assessment of error:
This error may impact dose results. It may occur when the user defined time intervals for control room X/Q do not coincide with other time intervals form other time dependent input. A review of the problem indicated that the code does not use the time intervals from the control room atmospheric dilution input as part of its time step control.

Software Program Manager: ___Terry Heames__ _____ __7/14/04__ _
  Printed/Typed Name   Signature   Date

SW Point of Contact: ___Terry Heames_ _____ __7/14/04__ _
  Printed/Typed Name   Signature   Date

Corrective Action:
Option A: User should verify that any time intervals used to define control room X/Q were already included in other time dependent input. If not, insert all Control Room X/Q time values as other time dependent input, for example release from the containment could have multiple time values with the same time release pattern. The Appendix gives an example of the inclusion of the timing pattern.
Option B: Modify code to include control room X/Q time intervals into the time step control routine. Because of the imminent release of version 3.10 a modification of version 3.03 is not considered reasonable.

Verified Complete:_____
  QA Manager

Software Program Manager: ___Terry Heames__ _____ _July 22, 2004_
  Printed/Typed Name   Signature   Date

SW Point of Contact: ___Terry Heames _ _____ July 22, 2004
  Printed/Typed Name   Signature   Date

Appendix A: Sample Input Screens.

The Dose Location Screen shown below is taken from the error data deck. Note that the user has a 67 hour delay time and no dilution at time 0.0, then at about 3.5 seconds the dilution starts and over the next half hour changes several times before reaching a very low value. With a six minute time step the code thought there was no dilution for that first period because it had not included the time intervals into its time step control.

The Pathway Transfer Filters screen is shown with a full set of time intervals, even though the flow is constant. With this added input the time step control knows to take 3 second time steps and to get the start of the dilution, therefore changing the mass moved to the control room. The user should verify that the control room dilution time intervals are all included in another time dependent input.

Dose Location

Name: Control Room *This is Dose Location 1*

In Compartment: 3 Control Room Previous ◄ | ► Next Reset | OK

BR Defaults
○ EAB or LPZ ● Control Room
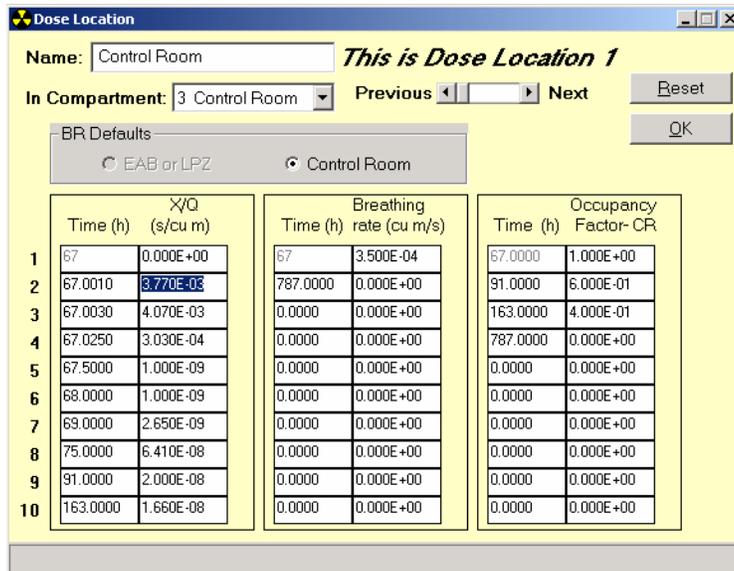
	X/Q Time (h)	X/Q (s/cu m)	Breathing Time (h)	Breathing rate (cu m/s)	Occupancy Time (h)	Occupancy Factor- CR
1	67	0.000E+00	67	3.500E-04	67.0000	1.000E+00
2	67.0010	3.770E-03	787.0000	0.000E+00	91.0000	6.000E-01
3	67.0030	4.070E-03	0.0000	0.000E+00	163.0000	4.000E-01
4	67.0250	3.030E-04	0.0000	0.000E+00	787.0000	0.000E+00
5	67.5000	1.000E-09	0.0000	0.000E+00	0.0000	0.000E+00
6	68.0000	1.000E-09	0.0000	0.000E+00	0.0000	0.000E+00
7	69.0000	2.650E-09	0.0000	0.000E+00	0.0000	0.000E+00
8	75.0000	6.410E-08	0.0000	0.000E+00	0.0000	0.000E+00
9	91.0000	2.000E-08	0.0000	0.000E+00	0.0000	0.000E+00
10	163.0000	1.660E-08	0.0000	0.000E+00	0.0000	0.000E+00

Pathway Transfer Mechanisms: Filters

Pathway 1: primary to Environment Reset

Filter Efficiencies (percent) OK
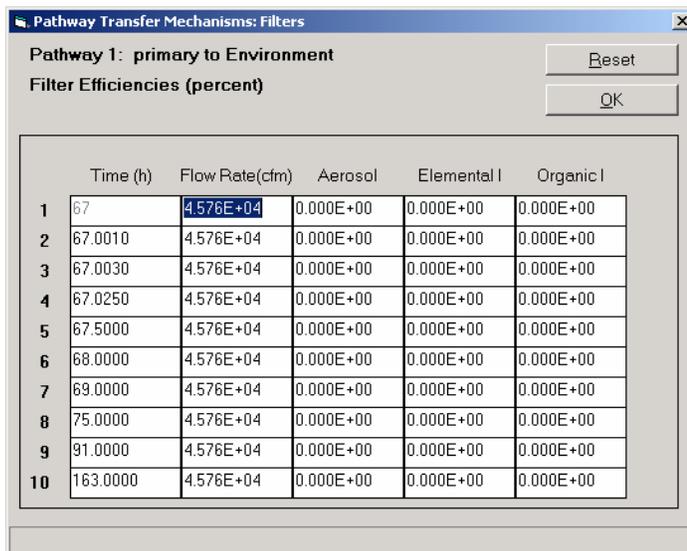
	Time (h)	Flow Rate(cfm)	Aerosol	Elemental I	Organic I
1	67	4.576E+04	0.000E+00	0.000E+00	0.000E+00
2	67.0010	4.576E+04	0.000E+00	0.000E+00	0.000E+00
3	67.0030	4.576E+04	0.000E+00	0.000E+00	0.000E+00
4	67.0250	4.576E+04	0.000E+00	0.000E+00	0.000E+00
5	67.5000	4.576E+04	0.000E+00	0.000E+00	0.000E+00
6	68.0000	4.576E+04	0.000E+00	0.000E+00	0.000E+00
7	69.0000	4.576E+04	0.000E+00	0.000E+00	0.000E+00
8	75.0000	4.576E+04	0.000E+00	0.000E+00	0.000E+00
9	91.0000	4.576E+04	0.000E+00	0.000E+00	0.000E+00
10	163.0000	4.576E+04	0.000E+00	0.000E+00	0.000E+00