SNAP/RADTRAD Exercise 2:

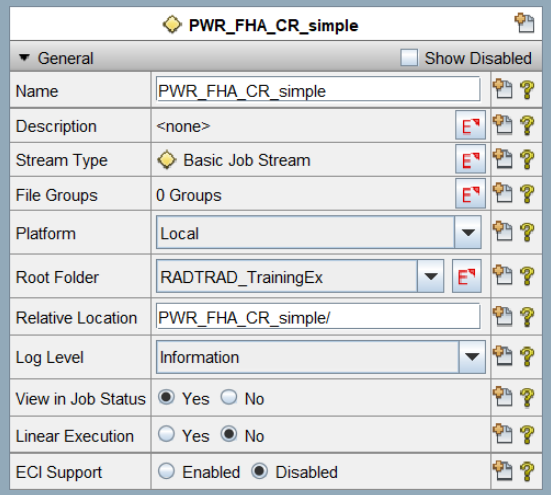
Adding a Control Room to the FHA Model

Exercise Overview

- The accident is the same as assumed in Exercise 1
- You will be adding a simple control room compartment with two pathways:
  - one from the environment to the CR
  - one from the CR to the environment
- Doses will be examined at the EAB, LPZ, and control room

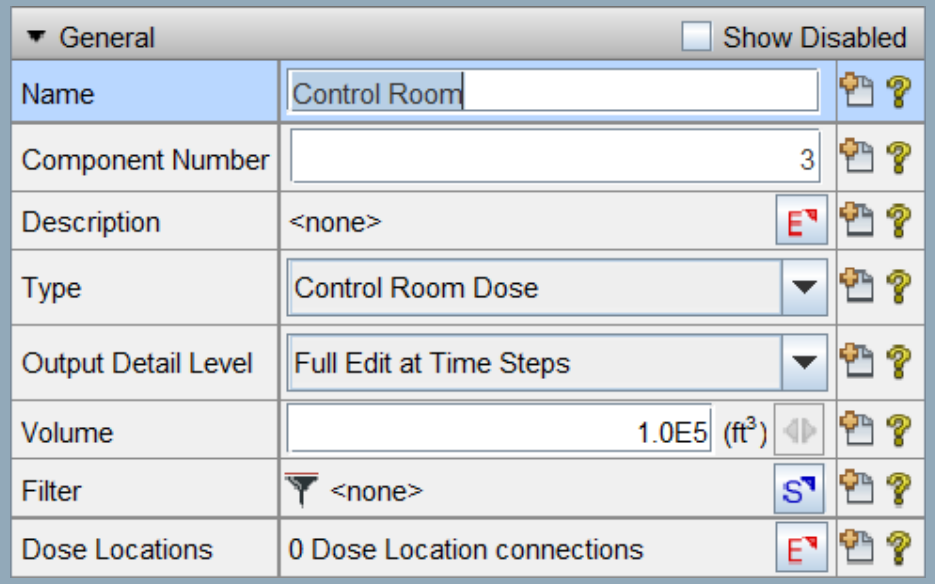
Step 1: Preliminary Setup

- You should have Exercise 1 open in your Model Editor
- In the Navigator Window, select “Model Options”
- Change the “Title” to “FHA_CR_simple”
- Select the job stream in the Navigator Window and change the “Name” to “PWR_FHA_CR_simple”
- Change the “Relative Location” in your job stream
  - Consider appending “CR” to the location in order to prevent the files from the previous exercise from being overwritten
  - See an example image to the right:
- Save the model as “FHA_CR_simple.med”



Step 2: Adding the Control Room

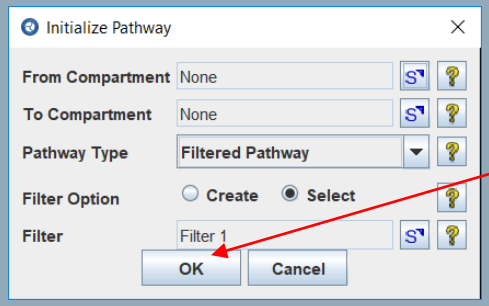
- Using the skills you learned in the last exercise, add a new compartment and populate it with the inputs below:

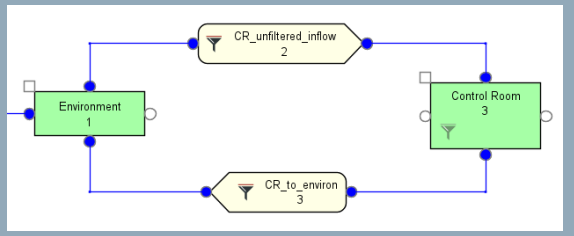


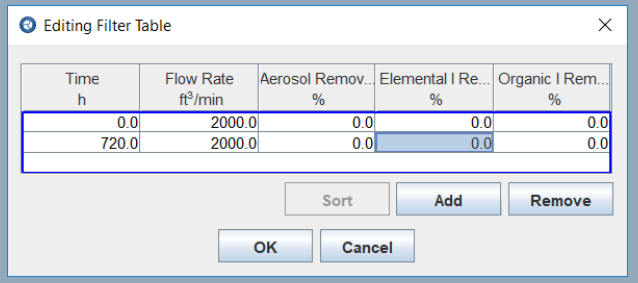
- The dose location will be addressed in a later step
- Add the control room to the default view by dragging it from the Navigator Window to the View Window

Step 3: Control Room Pathways

- Add two new pathways; this time, in the "Initialize Pathway" window, leave the "from" and "to" compartments blank. The first pathway's filter option will only include create and will create Filter 1. Filter one can then be selected when making the second pathway.
- Name one pathway "CR_unfiltered_inflow" and the other "CR_to_environ"
- Drag these pathways to the View Window and use the connection tool ( ) to link the pathways between the CR and environment as shown to the right:
  - Hint – for the "CR_to_environ" pathway, right click and change the "Drawn Orientation" to "Left" before making the connection
- There should be Filter 1 created from making the first pathway. Add an additional filter (right-click > new) and name the filters "CR_unfiltered_flow" and "Cr_to_environ" to match the pathways.
- Populate both filter tables as shown to the right:
- Finally, set each of the pathways to their corresponding filters by selecting the pathway (might have to click back on the selector) and pressing the icon.

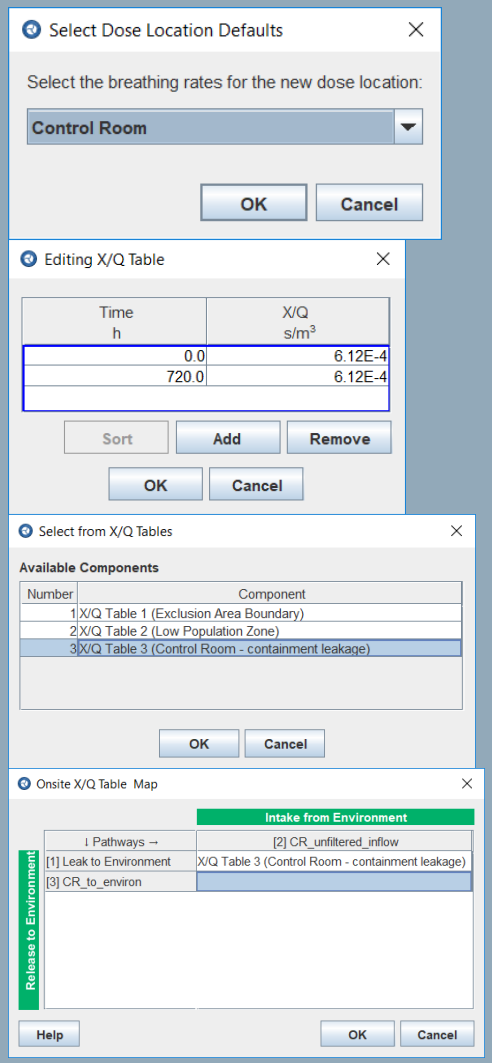






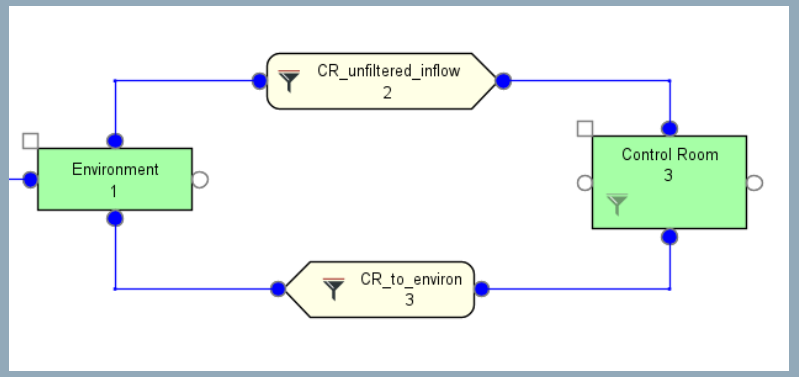
Step 4: Adding a Dose Location

- Add a new dose location from the Navigator Window of the control room type, as shown on the right:
- Name the new compartment “Control Room”
- In the Navigator Window, add a new X/Q table (right-click > new on X/Q Tables) and name it Control Room. Expand ( ) the X/Q table and enter the values to the right:
- Select Dose Location 3 (Control Room) and press the icon next to X/Q Table and select the Control Room table as shown to the right:
- Select the Environment Compartment and expand ( ) the Onsite X/Q Tables. Select the Control Room X/Q table for the Leak to Environment pathway as shown in the last image.



Step 5: Running the Simulation

- Check the model in your View Window against the image below:



- If it looks the same, try running the simulation as we did in Exercise 1
- Check the results of the simulation against the values to the right:

radtrad.out (Base_Job) - File Viewer

Edit Help

Find Case Sensitive Match Whole Words

```
##########################################################################
                    Worst Two-Hour Doses
##########################################################################

Exclusion Area Boundary
     Time          Whole Body      Thyroid         TEDE
     (hr)            (rem)          (rem)          (rem)
    0.0-2.0       1.6311e-01     2.6663e+01     9.7912e-01

##########################################################################
                          Final Doses
##########################################################################

Low Population Zone
   Time          Whole Body      Thyroid         TEDE
   (hr)            (rem)          (rem)          (rem)
  720.0         5.2428e-02     8.5704e+00     3.1472e-01

Control Room
   Time          Whole Body      Thyroid         TEDE
   (hr)            (rem)          (rem)          (rem)
  720.0         2.8920e-02     1.1605e+02     3.5781e+00
```

1068 1109

Close