

COMPARE STDose RESULTS TO FIELD MEASUREMENTS

Part of the RASCAL Instructor-led Training

FIELD TEAM - BACKGROUND

- STDose vs FMDose
 - STDose projects gamma readings for deposition on the ground
 - FMDose converts concentration at a single location to intermediate/long term doses
- Field Team Measurements
 - Types
 - Communication Process
 - Roles/Expectations

ONE OF THE DETAILED RESULTS OPTIONS IS TO VIEW THE GAMMA DOSE RATE

Detailed Results of Dose Calculations

Result Type

- ☐ TEDE
 - ☐ Inhalation CEDE
 - ☐ Cloudshine Dose
 - ☐ 4-Day Groundshine Dose
- ☒ External Gamma Exposure Rate (cloudshine + groundshine)
- ☐ External Gamma + Beta Exposure Rate
- ☐ Acute Bone Dose Total
- ☐ Acute Bone from Inhalation Only
- ☐ Acute Lung Dose
- ☐ Acute Colon Dose
- ☐ Groundshine Dose Over Defined Period
- ☐ Ground Concentration - Total
- ☐ Ground Concentration of: Cs-134
- ☐ I-131 Time-integrated Air Concentration
- ☐ Thyroid CDE
- ☐ Child Thyroid CDE
- ☐ 1st year Intermediate Phase TEDE
- ☐ 2nd year Intermediate Phase TEDE
- ☐ 50 year Intermediate Phase TEDE

Time Period for Exposure

- ☐ Start of release to end of calculation
- ☐ Cumulative over interval
- From: 2016/10/12 16:00
- To: 2016/10/13 00:00
- ☒ Rate at single time
- 2016/10/12 18:00

Display Format

From 10-mile calculation

- ☐ Footprint
- ☐ Numeric table
- ☐ Special receptors
- Define Receptors

From close-in calculation

- ☒ Footprint
- ☐ Numeric table

Display Units

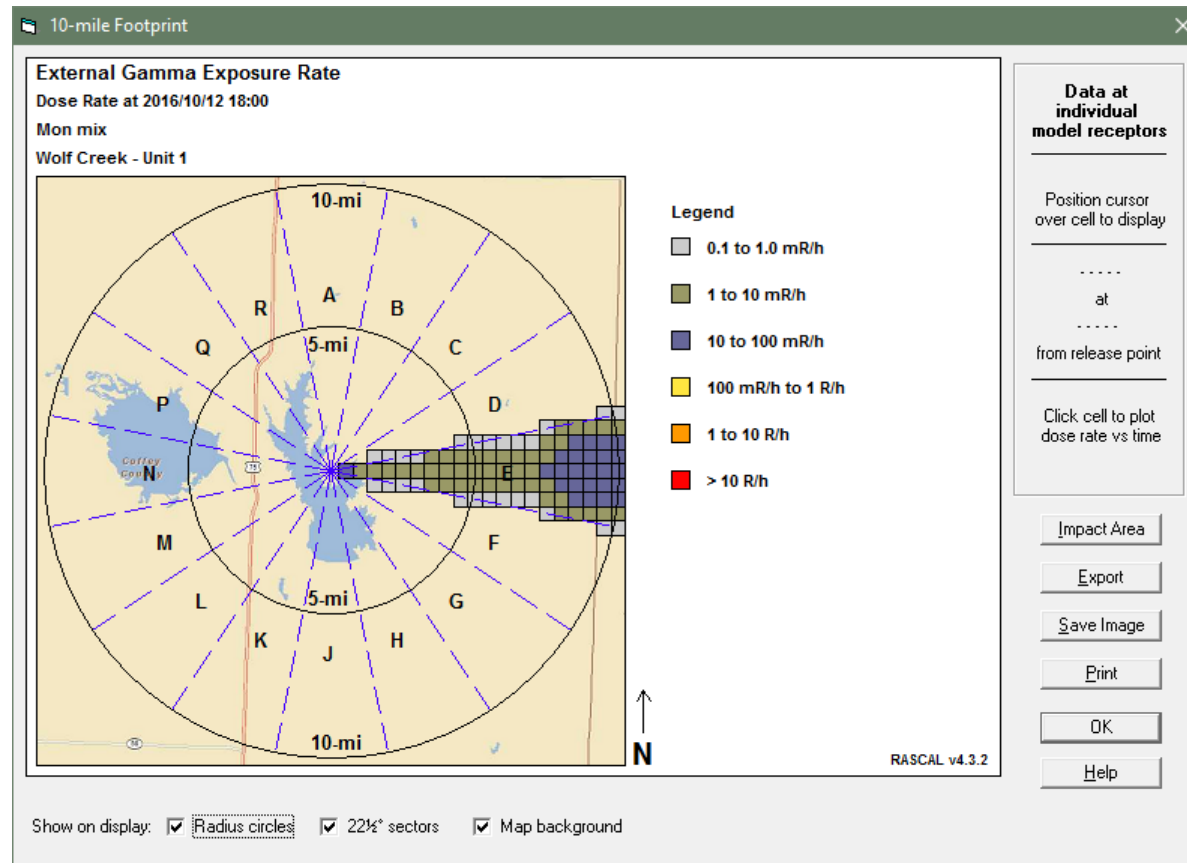
- ☒ English
- ☐ SI

Display Result

Help

Exit

USE YOUR CURSOR TO INTERROGATE THE CELLS



FIELD TEAM - SCENARIO

For the previous incident at Wolf Creek, field teams have been dispatched and reported measurements at 18:00 local time. Do these readings confirm that the RASCAL TEDE and Adult Thyroid CDE projections are representative of the impact?

Field Team & Location	Gamma Reading	I-131 Air Concentration
Team 1 3 miles downwind on the centerline	4 mR/h	1.9E-10 $\mu\text{Ci}/\text{cm}^3$
Team 2 8 miles downwind on the centerline	32 mR/h	1.5E-7 $\mu\text{Ci}/\text{cm}^3$

FIELD TEAM - RESULTS

Field Team	Measurement	Field Team Reading	RASCAL Results
Team 1 3 miles downwind on the centerline	Gamma	4 mR/h	3.3 mR/h
	I-131	1.9E-10 $\mu\text{Ci}/\text{cm}^3$	0
Team 2 8 miles downwind on the centerline	Gamma	32 mR/h	28 mR/h
	I-131	1.5E-7 $\mu\text{Ci}/\text{cm}^3$	1.2E-7 $\mu\text{Ci}/\text{cm}^3$

Conclusions?

- STDose vs FMDose
- What if RASCAL is higher than field team? Lower?
- Will there always be a centerline? Will it always represent the highest dose for that distance?
- If using STDose, may be possible to adjust model parameters to best fit to field team readings.