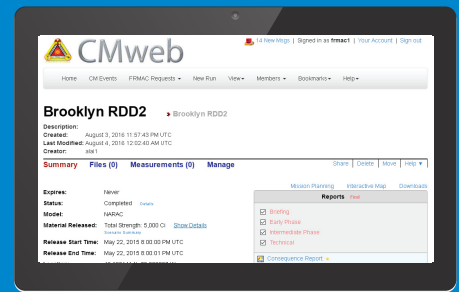


Mission Planning Job

CMweb



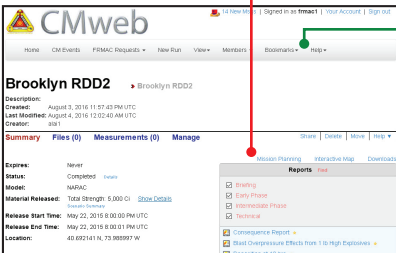
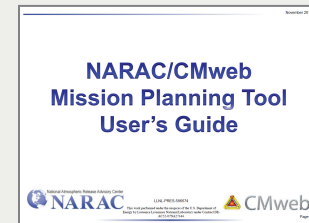
CMweb URL: <https://cmweb.llnl.gov>
 NARAC Exercise/Emergency: (925) 424-6465
 NARAC Customer Support : (925) 422-9159
 CMHT: 702-734-1665
 Advisory Team: 866-300-4374

Access to runs in the NARAC folder may need to be requested from CMHT or NARAC Customer Support.

Mission Planning Tool

For any NARAC run that contains a dose rate prediction, the Mission Planning Tool allows the user to calculate the dose received due to a monitoring or evacuation strategy.

Mission Planning User Guide under Help



Exposure Limits

Description	(mrem/hr) Extent Area	Population
Limit for all occupational exposures exceeded by exposure for 30 minutes or less.	>10,000 20.9m 375m ²	0
Limit for all occupational exposures exceeded by exposure for 5 hours or less.	>1,000 43.0m 1,074m ²	0
Limit for all occupational exposures exceeded by exposure for 50 hours or less.	>100 92.7m 3,473m ²	0
NCRP radiological control boundary.	>10 354m 37,114m ²	70
Limit for NRC public exclusion zone exceeded by exposure for 1 hour or less.	>2 863m 189,905m ²	540

Note: Areas and counts in the table are cumulative. Population Source = LandScan USA V1.0. Effects or contamination at May 23, 2015 08:00 UTC

Height AGL: 1.0 m | Default Transit Speed: 30.0 mi/hr | Route Type: Monitoring

Use: Worker Protection Dose Rate (Far Field) | Instrument: BNL Bicron Micromer [Cs-137] | Calculate Dose

Total Dose: 4.57E0 mrem

Location	Arrival Time	Stay	Transit Time	Dose Rate At Location (mrem/hr)	Dose at Location (mrem)	Dose in Transit (mrem)	Instrument Reading (uRem/hr)
(1) (40.690762 N, 73.981927 W)	06/05/2017 20:44:00 UTC	0:10:00	0:00:00	1.08E0	1.8E-1	1.3E-1	1.08E3
(2) (40.690299 N, 73.981687 W)	06/05/2017 20:59:01 UTC	0:10:00	0:05:01	1.72E0	2.86E-1	1.3E-1	1.72E3
(3) (40.689821 N, 73.981449 W)	06/05/2017 21:14:02 UTC	0:10:00	0:05:01	2.24E0	3.73E-1	1.76E-1	2.24E3
(4) (40.689315 N, 73.981210 W)	06/05/2017 21:29:03 UTC	0:10:00	0:05:01	2.52E0	4.2E-1	2.01E-1	2.52E3

1

Step 1

Select Transit Speed – default 30m/hr

2

Step 2

Select Route Type – Monitoring or Evacuation
 Stay time = 0 for Evacuation

- Once a route is initiated on the map or uploaded, Transit Speed and Route Type cannot be changed

3

Step 3

Select a route from 3 options

- Clicking a location on map
- Uploading .csv route
- Create 10 Point Plan

4

Step 4

Calculate Dose

1

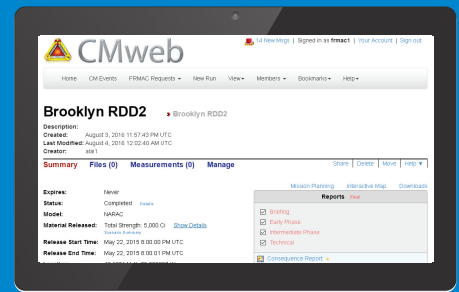
Additional Options

- Download route as .csv or .kml
- Range of instruments available to provide mock instrument readings

Mission Planning Job



CMweb



Multiple Does Rate Plot

Share Delete Move Help

Interactive Map Downloads

Reports Find

- Early Phase
- Technical
- Consequence Report
- Worker Protection Dose Rate at 1 hrs (Far Field)
- Worker Protection Dose Rate at 10 hrs (Far Field)
- Worker Protection Dose Rate at 11 hrs (Far Field)
- Worker Protection Dose Rate at 12 hrs (Far Field)
- Worker Protection Dose Rate at 2 hrs (Far Field)
- Worker Protection Dose Rate at 3 hrs (Far Field)
- Worker Protection Dose Rate at 4 hrs (Far Field)
- Worker Protection Dose Rate at 5 hrs (Far Field)
- Worker Protection Dose Rate at 6 hrs (Far Field)
- Worker Protection Dose Rate at 7 hrs (Far Field)
- Worker Protection Dose Rate at 8 hrs (Far Field)
- Worker Protection Dose Rate at 9 hrs (Far Field)

Multiple Dose Rate Plots

When there are multiple plots for different times associated with a specific dose rate plot type, NARAC software will look at the Mission Planning Arrival Times and choose the most applicable prediction time(s). If multiple plot times are spanned, it will interpolate.

Example:

NARAC predictions available at hourly intervals. Software will automatically choose which prediction times most closely match the arrival times.

Changing Dose Rate with Time for Nuclear Detonation

For Nuclear Detonation predictions, multiple dose rate plots are not needed. A power law decay function is used for time variation of ground shine dose rate from fission products.

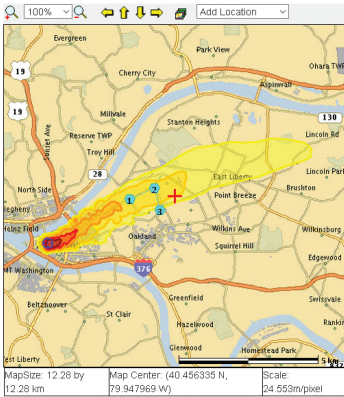
WARNING

Verify Start Time is desired time.
Use Shift Route Times to adjust, if needed.

Using 10 Point Plan to Create Route

The 10 Point Plan uses a standard algorithm that does not take into account street patterns or accessibility to a location in determining the route locations. Adjustments to the route may need to be made.

Nuclear Detonation



Description	(m/hrs) Extent Area	Population
Four times PAG for lifesaving and protection of large populations exceeded by exposure for 1 hour or less.	>100 0.5km 0.1km ²	0
Twice PAG for lifesaving and protection of large populations exceeded by exposure for 1 hour or less.	>50 1.2km 0.4km ²	0
PAG for lifesaving and protection of large populations exceeded by exposure for 1 hour or less.	>25 2.9km 1.2km ²	1,700
PAG for protection of major property needed for public welfare exceeded by exposure for 1 hour or less.	>10 5.6km 4.4km ²	11,900
Limit for all occupational exposures exceeded by exposure for 1 hour or less.	>5 10.1km 12.4km ²	39,300

Note: Areas and counts in the table are cumulative.
Population Source = LandScan2010.
Effects or contamination at May 02, 2016 03:00 UTC

Using 10 Point Plan to Create Route

