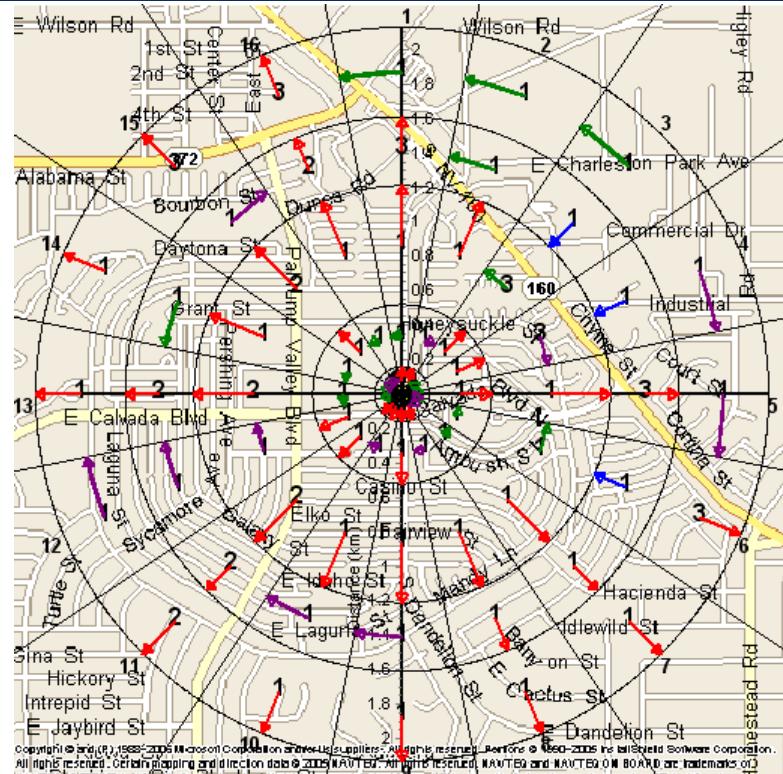


Exceptional service in the national interest



CHRONC: Intermediate and Long-Term Health Effects

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Objectives

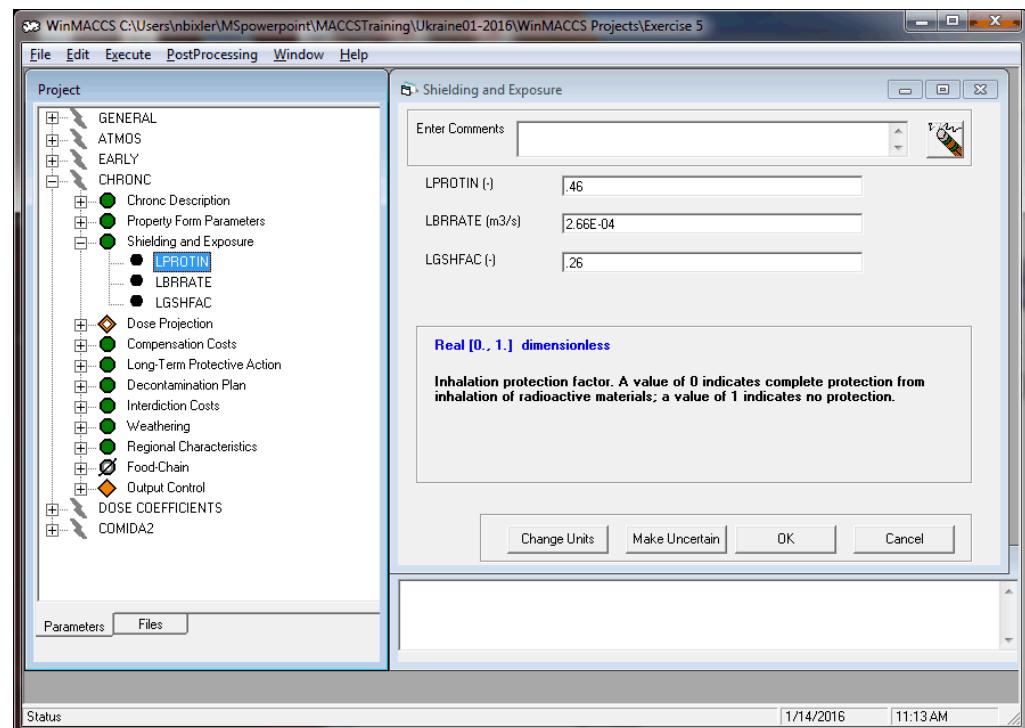
- Learn concepts and choices for long-term consequences
- Differential parameter that depend on site or accident scenario from those that do not

CHRONC Models and Parameters

- Shielding and exposure
- Dose projection
- Compensation costs
- Long-term protective actions
- Decontamination plan
- Interdiction costs
- Weathering
- Regional characteristics
- Outputs

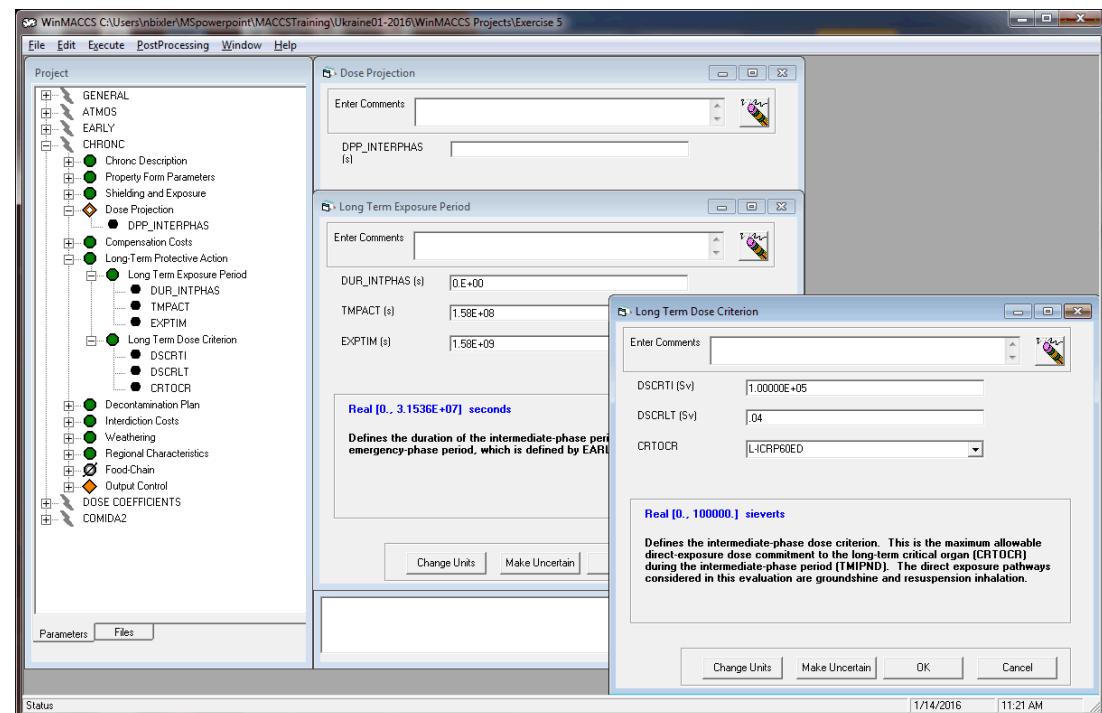
Shielding and Exposure Parameters

- Long-term parameters
 - Inhalation protection factor
 - Breathing rate
 - Groundshine shielding factor
- Values are commonly the same as normal activity values during the emergency phase



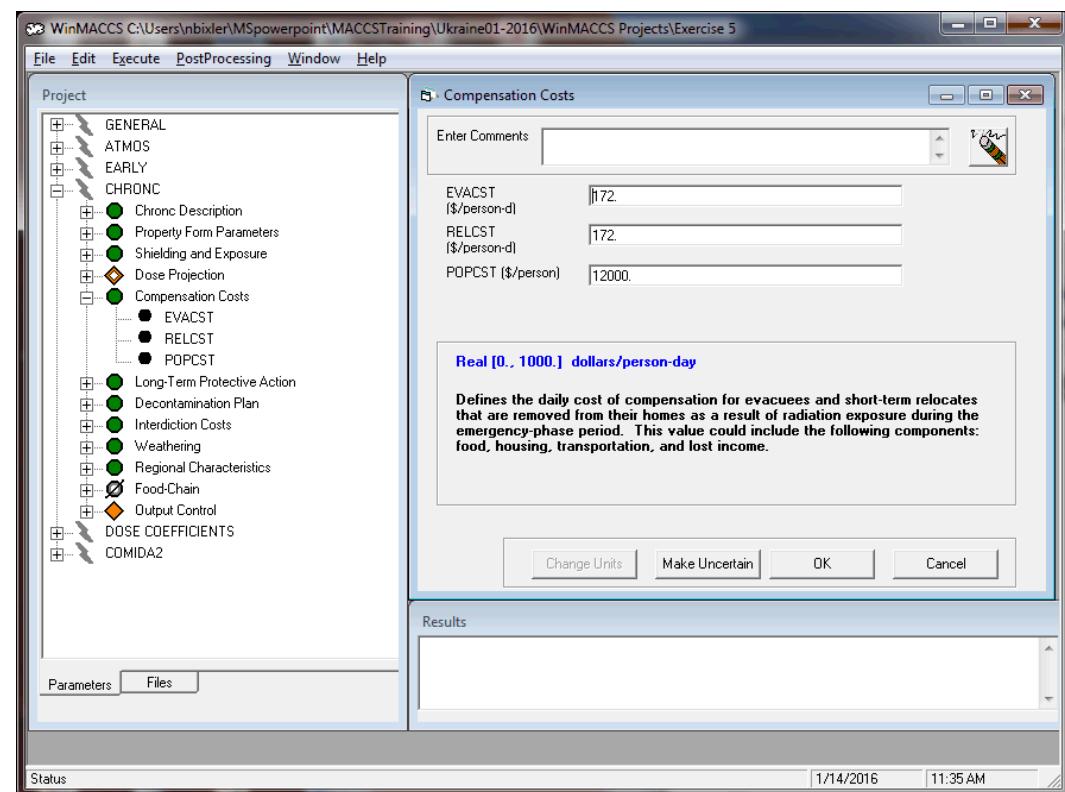
Phase and Dose-Projection Periods

- Dose-projection period for intermediate phase
- Duration of intermediate phase
- Dose-projection period for long-term phase
- Duration of long-term phase
- Dose limits
 - Intermediate phase
 - Long-term phase (habitability)
 - Critical organ for intermediate and long-term phases



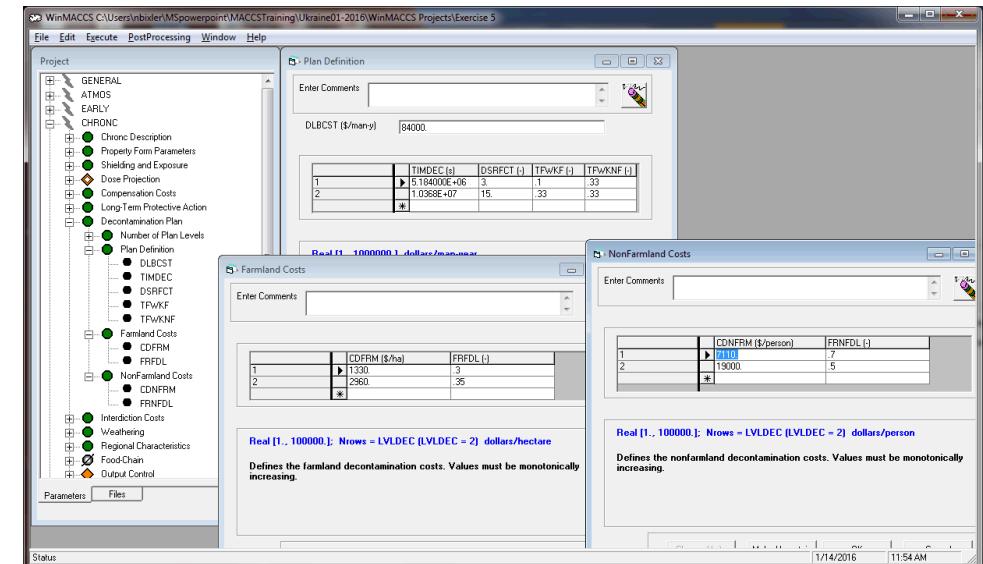
Compensation Costs

- Emergency-phase per diem cost for evacuation and relocation
- Intermediate-phase per diem cost for relocation
- One-time relocation cost for long-term phase
- Values need to be revised periodically



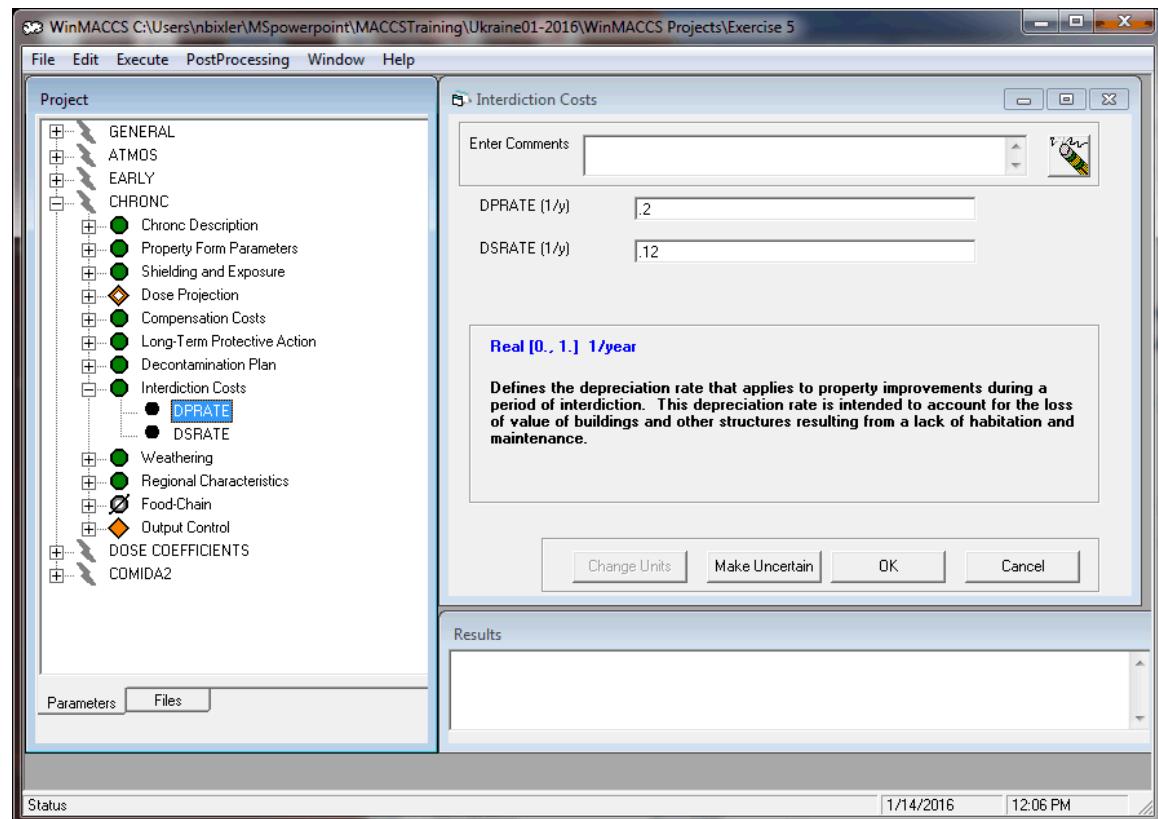
Decontamination Plan

- Plan definition
 - Time to decontaminate
 - Dose reduction factor
 - Fraction of time worker spends in nonfarm area
 - Fraction of time worker spends in farm area
- Farmland and nonfarmland costs
 - Cost per area or per person to decontaminate
 - Fraction of costs from labor



Interdiction Costs

- Depreciation rate for interdicted property
- Expected rate of return on property



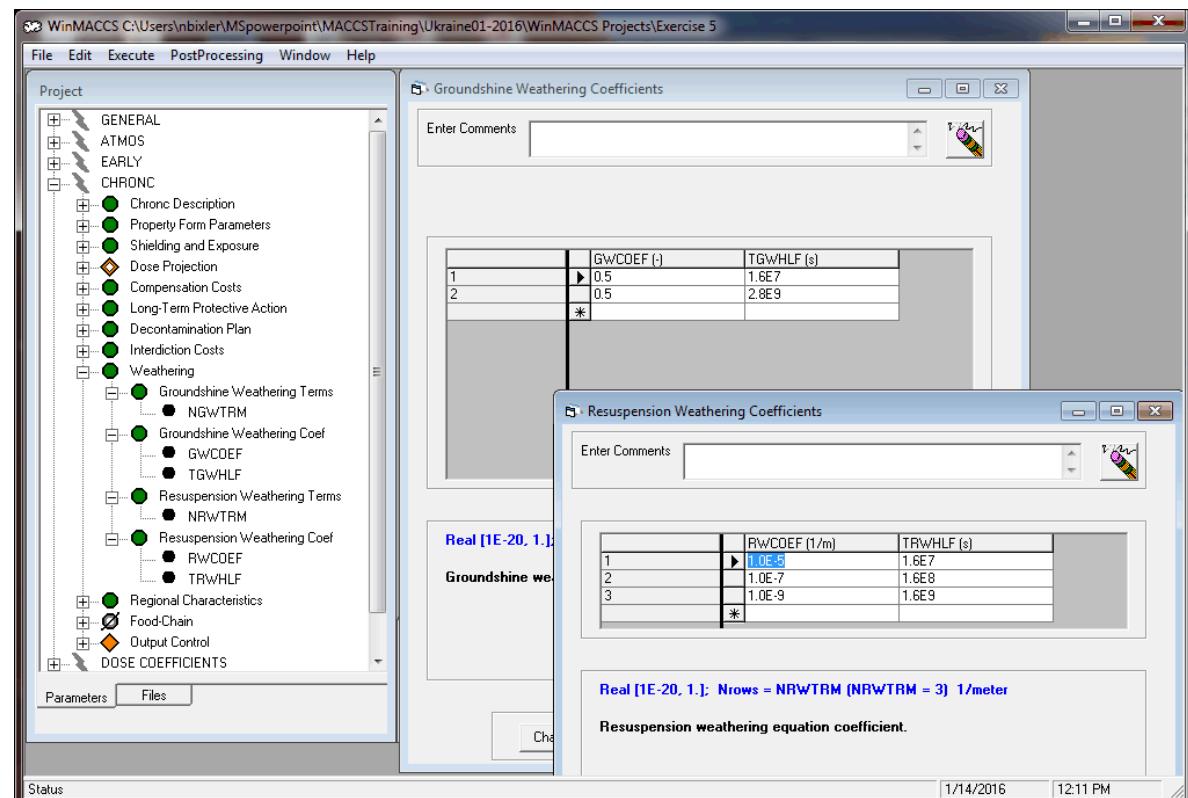
Weathering

- Groundshine weathering parameters

- Linear coefficient
- Decay rate

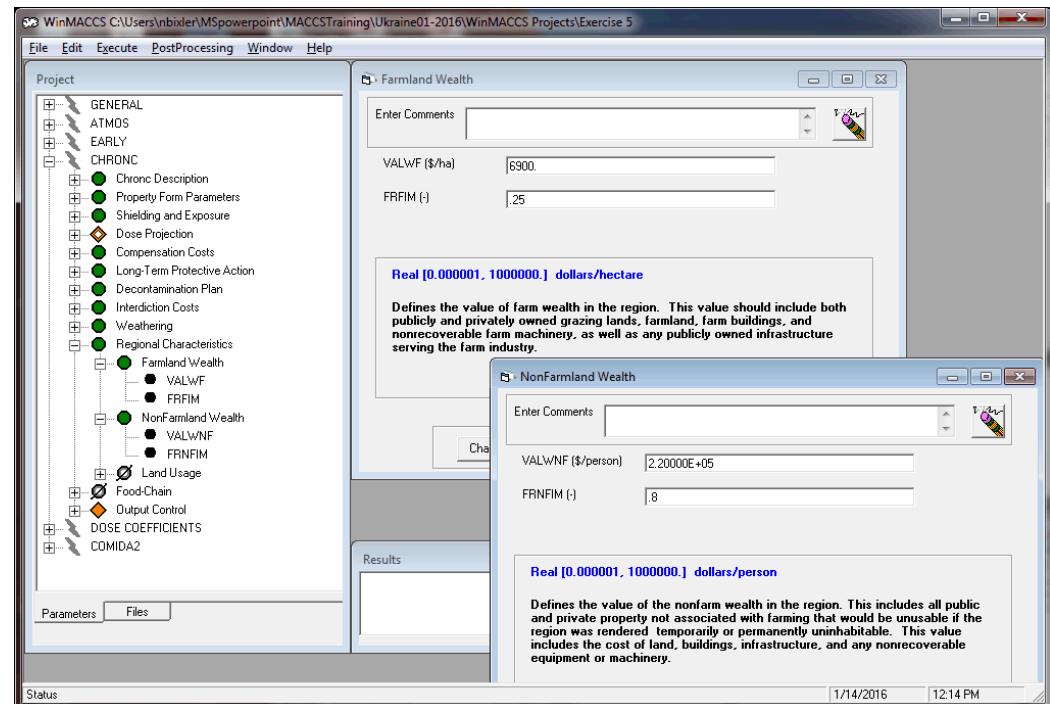
- Resuspension

- Linear coefficient
- Decay rate



Regional Characteristics

- Farmland and nonfarmland wealth
 - Value of property per area or per person that would need to be recreated
 - Fraction of value due to improvements



Outputs

- Population dose
 - By organ over a distance interval
- Economic cost results
 - Breakdown of economic costs over a distance interval
- Action distance results
 - Extent to which remedial actions are required
- Impacted area/population
 - Areas and number of people affected by emergency, intermediate, and long-term phase actions
- Individual food ingestion doses
 - Breakdown of doses from food types and water
- Impacted population results

Summary

- CHRONC models treat decontamination, interdiction, condemnation of property
- Most parameters do not require frequent reexamination
- A few parameters are site specific
 - Shielding and exposure
 - Property values and possibly other costs
- Intermediate-phase duration may depend on magnitude of release