RASCAL Change Log Summary: Version 4.3.4
January 2022

Source Term to Dose (User Interface and Models)

- Resolved an issue in effluent release concentrations source term method where flow rate unit conversions were not always being done correctly
- Resolved an issue with in the coolant sample source term method where noble gases were missing from the calculated release to the atmosphere
- Resolved an issue where dates after 12/31/2020 could not be entered
- Modified the UI to allow larger values for release rates in the Effluent Release by Mixtures source term
- Resolved an issue with formatting in the source term summary display when using SI units
- Updated the spent fuel fire source term screen (updated Training Tutorial 331 within [Module 3](#))
- Updated the filters used to limit choices of sites to improve usability
- Added options to the settings screen to control default calculation duration, default results units, and initial end of release
- Modified the UI to allow lower values for reactor fuel burnup to be entered
- Resolved an issue where UF6 cylinder valve location was shown incorrectly

ATD Models

- Modified the puff model such that child thyroid doses are no longer calculated when there are no iodine isotopes present in the release
- Resolved an issue in the plume model where the interpolation of depletion factors between grid arcs was being done incorrectly

Meteorological Data Handling

- Updated the MetFetch tool
  - Resolved issues which were preventing the download of observations
  - Resolved Secure Socket Layer (SSL) connection problems to the weather data providers
  - Resolved an issue where an error might occur if the runtime path was not defined in the Windows shortcut
  - Resolved issues with handling precipitation data in RASCAL-ready files

- Updated the Meteorological Data Processor functions

  - Resolved issues with retrieving RASCAL-ready observations and forecasts from MetFetch
  - Resolved an issue where wind speeds in kph were not being converted correctly
  - Resolved an issue when extremely low air temperatures resulted in air densities out-of-range errors

Site and Facility Data

- Updated the RASCAL facility database

    o Captured the power uprates of the following U.S. sites:
        - Browns Ferry Units 1, 2, and 3
        - Hope Creek
        - Joseph M. Farley Units 1 and 2
        - Oconee Units 1, 2, and 3
        - Peach Bottom Units 2 and 3
        - Watts Bar Unit 2
    o Added the nuclear power plants in Spain: Almaraz, Ascó, Cofrentes, Santa María de Garoña, Trillo, Vandellós
    o Added the nuclear power plants and spent fuel sites in Ukraine: Chornobyl area (CSFSF, ISF1, ISF2), Khmelnytskyi, Rivne, South Ukraine, Zaporizhzhia
    o Added South Africa weather stations

- Created site folders for the new sites and populated with needed topography, surface roughness, and map background files

Nuclide Data

- Updated the coolant inventory values with latest from ANSI ANS-18.1 2020

Other RASCAL components

- Updated RASCAL Source Term Merge/Export tool to allow user to see values in SI units
- Updated the FMDose user interface to fix the date limit issue
- Updated all the compiled help files (CHM) to show current RAMP URL and the 4.3.4 version number