NRCDose3 Change Log Version 1.1.4
Released March 2024

- **Code & Graphical User Interface (GUI) Changes:**

  - GASPAR – removed the options for "Print cumulative dose reports only" on the GASPAR main screen This feature is applicable for use with multiple source terms, which is not an option available in current version.
  - GASPAR – On GUI screen input, included a check on the number of Special Locations, limiting the entry to 5 or less.
  - GASPAR – Added an "Info" pop-up message for Humidity, clarifying that absolute humidity (g/m^3) should be entered in the temperature is entered as zero (0); otherwise, humidity should be entered as relative humidity as a percentage.
  - GASPAR – Changed the format used for entries on "Options" tab to store entered values as decimal numbers. This corrected calculations when entries were incorrectly recognized as integer values.
  - GASPAR – Included a pop-up message on the "Release time for purges" on the Source Term tab identifying that value must be less than 4380 hours. Use of a value greater than 4380 results in incorrect calculations of doses from C-14 releases.
  - LADTAP – Corrected the "Max Individual Hold-up Time and "Avg Individual Hold-up Time" (in the "Usage/Consumption" tab) to be consistent with Regulatory Guide 1.109 specified values as used for individual and population dose calculations for irrigated foods.
  - XOQDOQ – corrected issue when reading XOQDOQ legacy files.

NRCDose3 Change Log Version 1.1.3
Released February 2021

- **Code & Graphical User Interface (GUI) Changes:**

  - GASPAR - Fixed an error in the structure and routine referencing for the database file for the "Pathway Factors" and 'Transfer Factors."

  - GASPAR - Fixed an error associated with the calculation of biota doses for short-lived radionuclides; included a cut-off to the decay correction top prevent a division by zero error.

  - GASPAR and LADTAP - Fixed an error message associated with creating the output; extending a time delay between execution of the "RUN" command and reading the Fortran module output to allow time for the Fortran module to create the output.

NRCDose3 Change Log Version 1.1.2
Released July 2020

- **Code & Graphical User Interface (GUI) Changes:**

  - GASPAR **-** Verified the Relative and Absolute Humidity application in the GASPAR Fortran code and GUI screen input.

  - GASPAR **-** Fixed FSAR Report output to correct printed value for Absolute Humidity.

  - GASPAR **-** Deleted printout of Bone Factor in Supplemental Report a carryover from previous NEPA calculations for C-14 not used in current program.

  - LADTAP **-** Fixed an issue associated with adding new locations for Irrigated Foods.

  - Eliminated the OK button on screen for adding new radionuclides. Now screen shows for a few seconds and automatically closes.

  - Removed version number from all screens except the main menu screen.

NRCDose3 Change Log Version 1.1.1
Released November 2019

- **Code Fixes:**

  - Updated the NRCDose3 installer routine with version 1.1.0, where the installer did not always install the most up-to-date versions of the file.

  - LADTAP - Testing showed that under certain step sequences, the code, in version 1.1.0, was not properly displaying or accepting input of new locations in the Fish/Population/Biota tab. The LADTAP code was modified so that it correctly accepts and displays any new location inputs for the Fish/Population/Biota tab.

NRCDose3 Change Log Version 1.1.0
Released October 2019

- **Code Fixes:**

  - LADTAP □ For the individual ALARA calculations, user input for dilutions were switched between drinking water and "all other" pathways. The drinking water dilution was being assigned to the calculations for all other pathways and the all other pathways dilution was being assigned to the drinking water pathway. Interface change to correctly apply the dilution factors.

- LADTAP Test cases (not a code change) □ For the test cases that are installed, included incorrect transport time of 1 hour for the ALARA Individual doses rather than the 0.1 hours as used in NUREG/CR-4013. Loaded revised test cases into the install executable.

- GASPAR □ For user defined (new) biota, calculations were incorrectly applying the user inputted biota daily intake (g/d) as an annual intake (kg/y) for the calculation. The generic biota calculations were not affected. GASPAR code modified to correctly apply the user's input of biota consumption in units of kg/d.

- The skin DCF values from ground surface contamination for I-131 was incorrect in the database. The original FORTRAN file has been re-imported; a spot check performed to verify values are correct.

NRCDose3 Change Log Version 1.0.0
Released August 2019

- **Code & Graphical User Interface (GUI) Changes:**

  - Support for updated Dose Conversion Factors (DCF) values. - Previous versions of NRCDose (LADTAP II, GASPAR II and XOQDOQ) only utilized one set of DCF values, largely those contained in RG 1.109 and based on ICRP-2 methodology. NRCDose3 allows the user to select either the ICRP-2 (Default) DCF values, or those from ICRP-30 or ICRP-72.

  - Updated ICRP-72 age groups. - ICRP-72 uses 6 age groups (infant, 1-year, 5-year, 10-year, 15 year, and adult). RG 1.109, the original basis for LADTAP II, GASPAR II and XOQDOQ, uses 4 age groups (infant, child, teen, and adult). NRCDose3 utilizes all 6 age groups, when ICRP-72 DCF values are selected.

  - Updated all NRCDose code default usage factors. - When ICRP-72 DCF values are selected, NRCDose3 utilizes the updated usage factors found in the Environmental Protection Agency's (EPA's) Exposure Factor Handbook (see https://www.epa.gov/expobox/about-exposure-factors-handbook).

  - Revised the biota dose calculations in the LADTAP code (previous version of LADTAP II had limited provisions for biota dose calculations).

  - Addition of biota dose calculations in the GASPAR code (previous version of GASPAR II had no provision for biota dose calculations). For every Special Location defined in GASPAR, biota dose is calculated for the following species:

    - Muskrat
    - Raccoon
    - Duck
    - Cow
    - Fox
    - User Defined species

- Other functional improvements to the NRDose3 include:

    o Updated Windows GUI.

    o Radionuclide library expanded to 203 radionuclides with their associated DCF values.

    o Fully user-modifiable parameters for LADTAP, GASPAR, and XOQDOQ Fortran codes.

    o Compatibility using MS Windows 7 and later operating systems (OS), Internet Explorer (IEE) Version 7 and later.