

January 2021 – Code Updates

Studsvik Scandpower has released extensive updates to the Core Management System 5 (CMS5) suite of software and related applications, and to the HELIOS2 code system

Highlights of new features and capabilities, and minor software corrections available in these new versions are discussed below and can be found in the “Changes and Release Notes” documents on the Studsvik ZenDesk Help Center. The CMS5 software has been qualified under the Studsvik, Inc. NQA-1 1994, 10 CFR 50 Appendix B, 10 CFR 21 Quality Assurance Program and HELIOS2 under ISO-9001.

If you would like to receive an update to your software under your current software maintenance agreement, please contact your Studsvik representative.

Highlights for CASMO5 include:

1. New Spatially-Dependent Self-Shielding (SDSS) model for radially sub-divided fuel pins.
2. Expanded spacer and detector branches in S5C case matrix.
3. If updating CASMO5 to CASMO5 v3.03.00, then CMSLINK5 v1.16.01 must be used.

Highlights for SIMULATE5 include:

1. A new capability to screen the core for evaluation of the Alternative Radiological Source Term (AST). The SIMULATE5 module compares the computed pin linear heat generation (LHGR) versus the limits set by either US NRC Reg. Guide 1.183 or Draft Reg. 1199.
2. New MEC.ZON card to describe the axial zones of a mechanical design type by the zone elevations. The new card is an alternative to the existing MEC.HEI card, where the axial zones are input as the zone heights.
3. Better parallel (OpenMP) scaling and performance (from updating to a new Fortran compiler: IntelTM Fortran Compiler Version 19.1 Update 3 Build Date 20200925 for Linux).

These are the new CMS5 code versions:

Updated CASMO5 Code Versions:

CASMO5 v3.03.00

CASMO5 v3.03.00_VVER (Hex only)

Updated CASMO5 Documentation:

CASMO5 User’s Manual – SSP-07/431 Rev. 19

CASMO5 Methodology Manual – SSP-08/405 Rev. 14

CASMO5 Changes Document – SSP-11/401 Rev. 17

Updated CMSLINK5 Code Version:

CMSLINK5 v1.16.01

Updated CMSLINK5 Documentation:

Updated SIMULATE5 Code Versions:

SIMULATE5 v1.21.00

SIMULATE5 v1.21.00_VVER (Hex only)

Updated SIMULATE5 Documentation:

SIMULATE5 User's Manual – SSP-10/438 Rev. 15

SIMULATE5 Methodology – SSP-10/465 Rev. 4 (not updated this release)

SIMULATE5 Changes Document – SSP-13/401 Rev. 16

Updated Software Components HELIOS2 Code System:

AURORA v2.03.01 (Input pre-processor module)

HELIOS2 v2.03.01 (Transport solver module)

ZENITH v2.03.01 (Output post-processor module)

ORION v2.03.00 (Geometry viewer module -not updated this release)

Updated HELIOS2 Code System Documentation:

AURORA User's Manual - SSP-11/451 Rev 8

HELIOS2 Methods Manual - SSP-11/452 Rev 6

ZENITH User's Manual - SSP-11/460 Rev 5

ORION User Guide - SSP-11/313 Rev 1 (not updated)