

ORIGEN Status

Fixed in 6.3 / Upcoming 7.0

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SCALE Releases

6.3.0 (only released internally)

- New release with additional major features
- New Monte Carlo code Shift integration
- ENDF/B-VIII data libraries
- Advanced reactor capabilities
 - Molten Salt Reactor feed/removal modeling (MSR)
 - Fast spectrum multi-group calculations for sodium fast reactors (SFRs)
 - Higher fidelity TRISO for high temperature gas reactors (HTGRs) and Fluoride-cooled high temperature reactors (FHRs)

6.3.1 (released through RSICC, February 2023), 6.3.2 (April 2024), 6.3.3 (October 2025)

- Bug Fix release

SCALE 6.2.4 ORIGIN-related issues identified(1/2)

Description	Likelihood of affecting you	Severity	Fixed in v6.2.4	Fixed in v6.3.0
Fulcrum crashes with small numbers e.g. 1e-100	low	low	☺	☺
ORIGAMI crashes with zero decay time in middle cycles	medium	medium	☺	☺
ORIGAMI MCNP gamma/neutron output is non-standard	low	low	☺	☺
ORIGEN with FIDO input does not output all irradiation cases	low	low		☺
ORIGEN input fails with long data file paths	high	medium	☺	☺
ORIGEN does not check for duplicate or negative emission energies	low	low		☺
ORIGEN has missing precision in seconds/year conversion	low	low		☺
ORIGEN does not honor printing option total=no in all cases	low	low		☺

SCALE 6.2.4 ORIGIN-related issues identified (2/2)

Description	Likelihood of affecting you	Severity	Fixed in v6.2.4	Fixed in v6.3.0
ORIGEN cannot load initial concentrations from a previous case	low	low	☺	☺
ORIGEN does not include some alpha emitters if they decay away below a threshold during the case	low	medium	☺	☺
ORIGEN spectra output has missing units	high	low	☺	☺
ORIGEN-COUPLE does include destruction rates of missing daughters	low	medium		☺
ORIGEN-COUPLE does not allow multi-position libraries	low	low		☺

Fixed in SCALE 6.3.1 (1/2)

Description	Likelihood of affecting you	Severity
ORIGEN supports high-precision output for k-inf	low	low
Fix enabling the library card at different positions for multiple cases in the ORIGEN direct sensitivity calculation	low	medium
Re-enable Validation hard stop on ORIGEN	high	medium
Fix ORIGEN to add an error to input with multiple blend blocks	low	medium
Fix ORIGEN issue with neutron bounds from 302-group JEFF library	low	low
Fix ORIGEN processing block fails to check for elemental inputs	low	low
Fix ORIGEN concentrations not output for FIDO Irradiation Cases	low	medium
Fix defect in ORIGEN library interpolator ARP where it always writes a lower case library filename	medium	low

Fixed in SCALE 6.3.1 (2/2)

Description	Likelihood of affecting you	Severity
Fix ORIGEN FIDO input segfaults if user requests to save more cases than exist	low	low
Fix missing check for ORIGEN duplicate and negative gamma bound entries	low	medium

Fixed in SCALE 6.3.2

Description	Likelihood of affecting you	Severity
Fix ORIGIN curie and becquerel input error message with stable nuclides	low	low
Fix defect in ORIGIN OPUS option that should be supported, typarams=dnspec	low	low
Fix the ORIGIN gamma emission calculation failure with a monotonically increasing user-specified gamma group structure	high	medium
Improve the accuracy of ORIGIN adjoint sensitivity calculation for nuclide response in SCALE 6.3	medium	medium
Fix ORIGIN beta spectrum giving unphysical values	medium	high
Fix ORIGIN direct perturbation sensitivity results for multiple nuclides response	low	medium

Fixed in SCALE 6.3.3

Description	Likelihood of affecting you	Severity
Fix occasional failure of ORIGIN sensitivity calculation with the average integration method	medium	high
ORIGIN update to enable print_transitions options in build_lib block	high	low
Fix ORIGIN Manual issues	medium	low
Fix ORIGIN Fortran depletion interface to use accurate recoverable energies for Gd-155 and Gd-157	high	medium
OBIWAN prints recoverable decay energy information	low	low
OBIWAN converts ORIGIN F71 concentrations to stdcomp materials format	low	low

SCALE 6.3.3 ORIGIN-related issues identified (so far!)

Description	Likelihood of affecting you	Severity
Missing documentation on ORIGIN's handling of external AMPX cross-section updates	low	low
OBIWAN info fails to show correct information for ORIGIN Libraries	medium	medium
Fulcrum plot of OPUS data incorrect when time values are close	low	medium
Missing input validation schema and autocompletion for ORIGIN sensitivity capability	medium	low

In SCALE 7.0 betas (so far!)

<https://www.ornl.gov/scale/releases>

- New ORIGAMI features
 - Transit-based depletion for pebble bed reactors
 - can specify radial channel velocity profile
 - outputs pebble residence time for radial channels
- New OBIWAN features
 - Blend compositions from multiple f71 files
 - Output filtering options for CSV
- New ORIGEN features
 - Explicit spontaneous fission tracking
 - Decay heat sensitivity
 - Generate Depletion SDF file
- New Fulcrum features (relevant to us)
 - Decay heat widget
 - Interactive fuel composition input for ORIGAMI
 - ORIGAMI UO2 express form has arpdata.txt on-the-fly validation