
Radiation Safety Information Computational Center



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*“There are two possible outcomes: if the result confirms the hypothesis,
then you’ve made a measurement. If the result is contrary to the
hypothesis, then you’ve made a discovery.”*

– Enrico Fermi

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CHANGES TO THE RSICC CODE AND DATA COLLECTION

There is one update to the RSICC catalog for those individuals that may be interested.

PSR-614/COBRA-SFS

Pacific Northwest Laboratory, Richland, Washington has contributed COBRA-SFS Version 6.3.0 (Spent Fuel Storage), COBRA-SFS (Spent Fuel Storage), a code for thermal-hydraulic analysis of multi-assembly spent fuel storage and transportation systems. COBRA-SFS is a computer program that performs thermal-hydraulic analyses of multi-assembly spent-fuel storage and transportation systems. It uses a lumped-parameter, finite-difference approach to predict flow and temperature distributions in spent fuel storage systems and fuel assemblies, under forced and natural convection heat transfer conditions, in both steady-state and transients. Derived from the COBRA family of codes, which have been extensively evaluated against in-pile and out-of-pile data, COBRA-SFS retains all the important features of the COBRA codes for single-phase analysis and extends the range of application to problems with two-dimensional radiative and three-dimensional conductive heat transfer. With these added capabilities, COBRA-SFS has been used to analyze various single- and multi-assembly spent fuel storage systems containing unconsolidated and consolidated fuel, with a variety of fill media.

The package will be transmitted digitally as a download link. Package includes references, source and sample problems. Executables for windows are included. Fortran; Linux, MacOS and Windows (P00614MNYCP04).

CCC-877/KRAKEN-1.2.25.05

VTT Technical Research Centre of Finland, Espoo, Finland, has contributed KRAKEN 1.2.25.0, a Computational Reactor Analysis Framework. The Kraken computational framework is a new modular calculation system designed for coupled core physics calculations. The development started at VTT Technical Research Centre of Finland in 2017, with the aim to replace VTT's outdated legacy codes used for the deterministic safety analyses of Finnish power reactors. In addition to conventional large PWRs and BWRs, Kraken is intended to be used for the modeling of SMRs and emerging non-LWR technologies.

The main computational modules include the Ants nodal neutronics solver, the FINIX fuel behavior module and the Kharon thermal hydraulics code, all developed at VTT. The core physics solution can be further coupled to system-scale simulations. In addition to development, significant effort has been devoted to verification and validation of the implemented methodologies. The reduced-order Ants code has been successfully used for steady-state, transient and burnup simulations of PWRs with rectangular and hexagonal core geometry. The Ants–Kharon–FINIX code sequence is actively used for the core design tasks in VTT’s district heating reactor project. A complete description of the project is found at the Kraken website: https://serpent.vtt.fi/kraken/index.php/Main_Page

The package will be transmitted digitally as a download link. The package is transmitted as a zip file that includes source code and documentation (C00877MNYWS01).

RESTRICTIONS

RSICC is authorized to distribute KRAKEN 1.2.25.05 for research and education purposes only. Commercial use is prohibited. RSICC can only distribute KRAKEN 1.2.25.05 to citizens of “pre-approved” countries and that are in the following “pre-approved” countries: member states of European Union, Australia, South Korea, Canada, Iceland, Japan, New Zealand, Switzerland, the United Kingdom, and the United States

RSICC can only license and authorize the use of KRAKEN for peaceful and legal purposes. KRAKEN cannot be used in connection with the development, production, handling, operation, maintenance, storage, detection, identification, or dissemination of chemical, biological, or nuclear weapons or other nuclear explosive devices or the development, production, maintenance, or storage of missiles capable of delivering such weapons. The use of KRAKEN for any military purpose is strictly prohibited.

SINGLE USER MULTI-ORGANIZATION LICENSE AGREEMENT

(Last updated July 1, 2018)

To support the use of RSICC software by multi-national organizations and international collaborations, RSICC now offers our customers the option to request a Single User Multi-Organization Software License Agreement. The Single User Multi-Organization Software License Agreement addresses issues regarding the “re-export” of software and data packages obtained from RSICC because under Federal export control regulations our customers cannot “re-export” the code to another person in another country.

This agreement is intended to allow our customers to specify additional foreign locations for which they may be approved to utilize RSICC software. In general, the default option will be the standard single user license agreement for the country in which the customer resides and is employed. The following defines the requirements for use of this license agreement.

This SUMO software license agreement is only available for individuals that receive software directly from RSICC. In addition, the point of contact (host or system administrator) at the additional foreign

location(s), must be licensed directly from RSICC and must agree to abide by the policies associated with host/server/cluster systems that are summarized following this announcement.

To apply for this license the customer must first register with RSICC and provide full and complete information. When submitting their request, the customer must provide the following information in the COMMENTS section of the request form for each applicable package:

- full name and email address of the point of contact (POC),
- the full name of the organization at which the software will be used, and
- the complete address (no post office boxes) of the organization under which additional access is being requested.

Individuals that would like to utilize this service must have a valid reason for needing this access and provide such justification to RSICC in the END USE statement as well. If this information is not included in the END USE statement, then the customer's request will only be considered for the standard single user license agreement.

When processing the request, RSICC staff will verify that the designated POC(s) has a valid license for the same version of software that is being requested by the applicant and verify that the POC obtained the package directly from RSICC. If the POC, did not obtain the package directly from RSICC, the POC will need to register with RSICC, apply and be approved for the package before the applicant's request can be processed.

The requests will be reviewed for each designated location and a decision will be rendered as to whether a license is granted. If an organization or location is denied, then the customer will be notified and may be limited to the standard single user license agreement for their own organization.

Exceptions:

Persons that have any citizenship of or are in countries that are not listed in Appendix A of 10 CFR 810 are not permitted to utilize the Single User Multi-Organization License Agreement.

Fees:

The customer making the request for the single user multi-organization software license will be required to pay the cost recovery fee for each location at which they are approved. In addition, the POCs at the other foreign locations that have not obtained the software directly from RSICC will have to obtain the software from RSICC and pay the applicable fee.

HOST/SERVER/CLUSTER GUIDANCE

(Last updated November 1, 2022)

Software obtained from RSICC is export controlled under the jurisdiction of the U.S. Department of Energy, 10 CFR 810, or the U.S. Department of Commerce, 15 CFR 730-744. Additionally, RSICC distributes this software under guidance issued by the U.S. Department of Energy's Office of Nonproliferation and Arms Control. The distribution and use of RSICC software is restricted and controlled under these regulations and guidelines. Individuals that request the software must be cleared through both an export control and a nonproliferation review process prior to the individual being granted a license to receive software for a specific end use.

The software distributed by RSICC is licensed to individual requestors (Licensee) under a single-user license agreement while employed at the organization listed on the license forms and cannot be

transferred to any other individual or entity. The Licensee is responsible for the control, management and protection of the software. The Licensee is responsible for compliance with U.S. export control requirements (laws and regulations) and the terms of the license agreement. This includes preventing access to the software by any individual or entity (including IT staff) as such access may be deemed an export control violation. Individual Licensees should protect the software, documentation, and installation accordingly. Neither the software nor manuals should be posted to the Internet or otherwise be made publicly available. Any and all system administrators that are assisting with the installation and maintenance of a licensed code(s) or that would otherwise have access to a licensed code(s) that is placed on a stand-alone system and/or server/cluster must also be licensed for the exact version of the software that is placed on these systems. Individuals whose duties are only that of a System Administrator are not authorized to be users of the licensed codes(s). **Those individuals serving only as system administrators are NOT charged the cost recovery fee for processing their requests.**

System administrators and/or hosts should implement standard and customary account access and/or file permissions such that only the licensed individuals may access the program. This should include identity and access management, such as multi-factor authentication, to ensure software is kept secure from unauthorized access. Please note that the single-user license agreement is code and version specific. The Licensee must be licensed for the specific version to which they are granted access. For example, an individual with a license only for MCNP5 should not be permitted access to MCNP6.1. Additionally, some individuals are only licensed for the executable versions of the code(s), and the system administrator(s) must ensure that such individuals do not have access to the source code. Therefore, it is recommended that the source code be removed after installation of the program(s) and furthermore procedures must be implemented such that control software is not lost via decommissioned storage media.

Network, server, parallel, cluster, or similar installations outside of the United States may not be within a country NOT listed in Appendix A of 10 CFR 810 nor occur at facility identified as an entity under 15 CFR 744.

RSICC software may be hosted on a server, cluster or high-performance computing system with the following conditions:

1) Each server/cluster operator must designate one individual responsible for oversight of the use of RSICC software on the server/cluster. This individual will be responsible for communicating and reporting to RSICC on an annual basis regarding the users of the cluster/server.

2) Each and every system administrator that would have access to any form (source or executable) must register, request, **and** be approved for the software with RSICC for the version to which they would have access.

3) An authorized and approved system administrator may install and maintain the software and must ensure that the software is not distributed or shared with those who do not have a specific license for the version to which they would have access. System administrators are required to utilize protocols that limit access to the software. Users should only be granted access and use of software to which they have a specific license, e.g. users that have a license for SCALE 6.1 should NOT be granted access to SCALE 6.0 or SCALE 6.2.

4) System administrators are not permitted to provide access to RSICC software to individuals **NOT** located within the same country as the server/cluster **unless the Licensee has an approved Single User Multi-Organization License Agreement from RSICC.**

5) Individuals with citizenship or multiple citizenships that include a country not listed in Appendix A of 10 CFR 810 may be granted access to RSICC software on a server/cluster, if the individual has been approved for access to the software by the U. S. Department of Energy's Office of Nonproliferation and Arms Control.

6) Under no circumstances should an individual with citizenship or multiple citizenships that include a country **NOT** listed in Appendix A of 10 CFR 810 be granted access to RSICC software on the server/cluster, if that individual has **NOT** been approved by the U.S. Department of Energy's Office of Nonproliferation and Arms Control. Additionally, under no circumstances should an individual located at an entity identified under 15 CFR 744 be granted access to RSICC software on the server/cluster.

7) Individuals that have been only granted access to RSICC's secure cloud server **MAY NOT** be granted access to any other server/cluster.

8) When a Licensee requests access to RSICC software on a server/cluster, the system administrator must follow the following process:

(a) The system administrator will require that the Licensee provide proof of a license by requiring that the Licensee provided an electronic copy of either the Single User License Agreement or the Single User Multi-Organization License Agreement. **System administrators cannot provide access to anyone located in another country unless that individual has an approved Single User Multi-Organization License Agreement from RSICC and the organization of the system administrator is listed on the SUMO License Agreement.**

(b) The system administrator must ensure that the Licensee's current installation/affiliation is the same as that on the license agreements.

(c) If the Licensee's current installation is NOT the same as that on license agreements, then access should be denied until the Licensee has updated license agreements with RSICC. This will require the Licensee to update their registration with RSICC and submit a new request with RSICC. The Licensee should not be granted access to the software until they have been authorized. Please note that some approvals are location and organization specific.

9) The system administrator will maintain records of the Licensees that are utilizing the server/cluster and send a record to RSICC (rsic@ornl.gov) that include the Licensee's full name, RSICC customer identification number, installation, and the codes to which the Licensee has access on the system. This information must be provided when the system administrator makes the first request to RSICC to provide such services and must be updated annually by sending updated information to RSICC no later than November 30 of each calendar year. The record should include the customer's full name, RSICC customer number, customer installation as well as request numbers and software package name and identifier for which they are accessing on the cluster.

Server/cluster operators that agree to comply with these conditions may install RSICC software on the server/cluster that are within their corporate/institutional ownership, physical control, and the individual country identified.

USE OF RSICC SOFTWARE ON COMMERCIAL CLOUD SERVICES

(Last updated September 1, 2024)

Many customers have asked about the use of RSICC-distributed software such as MCNP® and SCALE on a commercial cloud system. If you intend to use a commercial cloud solution for RSICC software, please ensure that the chosen solution meets with the following:

RSICC may only support cloud solutions where the cloud service is physically within the jurisdiction of the United States of America, and provides information security objectives /impact levels meeting guidelines consistent with Level 4 from current DoD Cloud Computing Security Requirements (<https://public.cyber.mil/dccs/dccs-documents/>). Cloud services that meet this requirement have U.S. persons as system administrators.

The AWS GovCLOUD (US) (<https://aws.amazon.com/govcloud-us/>) and the Microsoft Azure Government (<https://azure.microsoft.com/en-us/explore/global-infrastructure/government>) cloud services are options that meet the DOD IL4 requirements. Various RSICC customers in the U.S. have used the AWS GovCloud (US) and Microsoft Azure Government (US) services. There are other commercial cloud services that also meet the Level 4 DOD Cloud Computing Security Requirements. Hoonify (<https://www.hoonify.com/>) is the only private server operator in the U.S. that provides access to the MCNP® Monte Carlo code. Staff at Hoonify comply with RSICC's server/cluster requirements and ensure that all users of their server have a valid RSICC license. Some RSICC customers have availed themselves of Hoonify's services. It is important to remember that only persons licensed in the U.S. can access these systems for use of RSICC software.

The following are guidelines for controlling access to the software on such commercial cloud servers. The employee that is responsible for working with the cloud service to install the software must be licensed. If this person is not an end user but a systems administrator/manger we will waive any fee for the software that they might need. After installation, the source code for the package should be removed since some of the users may only be licensed for the executable version of the software. The individual that manages an employee's access to the cloud service should ensure that everyone that is given access is licensed. We request that you keep a record of the persons given access to the cloud service with verification of each person's license. The primary point of contact for the organization that authorizes access for company employees to the cloud service should provide RSICC with an annual report each November of the users of the cloud service.

END USE STATEMENT

(Last updated January 1, 2025)

Customers are strongly encouraged to provide full and complete information regarding the intended end use of the software being requested. End use statements that specify that the code is for research, training or educational activities are not sufficient. RSICC's regulators need to know explicitly for what purpose you intend to use the codes and detail needs to be provided. Requests that lack sufficient detail will be rejected. Please include the type of calculations that you intend to perform e.g., criticality, reactor physics, shielding, dose, etc. and for what types of applications e.g., reactor shielding design, fusion shield design, nuclear medicine, reactor design, etc. For reactor simulation uses, the customer should include a description of the reactor type and the intended use of the reactor such as commercial, maritime, or space reactors. Use of software distributed by RSICC may be restricted under U.S. Federal export control regulations for maritime or space applications.

Students that submit requests to RSICC are strongly encouraged to consult their professor or academic advisor as to what purpose they intend to use the codes for their classes and/or their research. Professors are also encouraged to provide such guidance to their students since the professor is responsible for identifying the activities of the students under their tutelage. Professors are encouraged to write an end use statement for their students that describe both the intended use of the code and the applications for

which the code will be applied. Providing this information will help expedite the processing of the request and speed up delivery of the software.

REGISTRATION REQUIREMENTS

(Last updated September 13, 2023)

During the registration process, individuals are required to provide the name of the institution at which they will use the software, an institutional mailing address and an institutional e-mail address. RSICC's regulators require us to obtain an address associated with the individual's organization. If you are working remotely, you may include an alternate mailing address as a comment during the registration process. Please note that you cannot provide an alternate mailing address that is in a country different than that for the organization with which you are affiliated. RSICC cannot register a customer for access to software in a country different than that of the organization with which the individual is affiliated as the single user license and export control agreements are specific to the country in which the organization is located.

REQUESTING PRIOR VERSIONS OF SOFTWARE

(Last updated January 1, 2025)

RSICC retains older versions of software that we distribute in our archives; however, our software list contains the most recently released version of the software. Customers can request older versions of the software by including a comment when submitting their request stating the versions of the software that are needed. Customers will be charged a cost recovery fee for each version of a package that is requested.

CONFERENCES, TRAINING COURSES, SYMPOSIA

CONFERENCES

15th International Conference on of the Croatian Nuclear Society

The Fifteenth International Conference on Radiation Shielding (ICRS15) will be held May 31 – June 3, 2026 at the Hotel Kolovare, Zadar, Croatia. The conference is organized by the Croatian Nuclear Society. Those interested can find additional details at: <http://www.nuclear-option.org>

15th International Conference on Radiation Shielding

The Fifteenth International Conference on Radiation Shielding (ICRS15) will be held December 25 – 29, 2026 at the Lotte Hotel Jeju, Jeju, South Korea. The conference is organized by the Korean Association for Radiation Protection. Those interested can find additional details at: <http://icrs15.org/>

TRAINING COURSES



LANL MCNP6 Class Schedule

Individuals interested in attending or that have registered for these classes are encouraged to contact the organizers regarding any delays or cancellations.

Website: <https://mcnp.lanl.gov/classes.html>

October 6 – 10, 2025	Intermediate MCNP6 Non-US citizens must register by July 18, 2025	\$1,800
October 27 – 31, 2025	Introduction to MCNP6 Non-US citizens must register by August 8, 2025	\$600
December 1 – 5, 2025	Variance Reduction with MCNP6 Non-US citizens must register by September 12, 2025	\$1,800

See the website for more information.

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SCALE Training Courses at ORNL

SCALE is a modeling and simulation suite for nuclear safety analysis and design that provides a comprehensive, verified and validated, user-friendly tool set for criticality safety, radiation shielding, reactor physics, spent fuel characterization, and sensitivity and uncertainty analysis (<https://www.ornl.gov/scale>).

The SCALE training courses are taught by developers and expert users from the SCALE Team. These courses provide a review of theory, description of capabilities and limitations of the software, and hands-on experience running problems of varying levels of complexity.

All attendees for the SCALE training courses must be licensed users of SCALE 6.3. Licenses can be requested from [RSICC](#) in US and [RIST/NUCIS](#) in Japan. If you plan to attend, you are recommended to request a software license at least two months prior to the start of the training course.

Registration is now open for the next block of SCALE training courses, offered in-person at Oak Ridge National Laboratory, October 6–24, 2025.

You can register from the SCALE website at <https://www.ornl.gov/content/training-person-ornl> or via this direct link <https://utconferences.eventsair.com/scale-fall-2025/register/Site/Register>.

The currently scheduled training courses are listed below.

Course Name and Date	Location	Registration fee
October 6–10, 2025 (Mon-Thurs: 8am-5pm and Fri: 8am-12pm EDT) - SCALE/ORIGEN Standalone Fuel Depletion, Activation, and Source Term Analysis. An example of the agenda can be viewed here .	ORNL Oak Ridge, TN, USA	\$2,500*
October 13–17, 2025 (Mon-Thurs: 8am-5pm and Fri: 8am-12pm EDT) - SCALE/TRITON Lattice Physics and Depletion. An example of the agenda can be viewed here .	ORNL Oak Ridge, TN, USA	\$2,500*
October 20–24, 2025 (Mon-Thurs: 8am-5pm and Fri: 8am-12pm EDT) - SCALE Criticality Safety and Radiation Shielding. An example of the agenda can be viewed here .	ORNL Oak Ridge, TN, USA	\$2,500*

**Full-time university students can register at a reduced rate of \$1,200. For each course over one, professional registration fees are discounted \$250, and student registration fees are discounted \$120. Payment must be received at least one week prior to attending the training course.*

For more information regarding these courses, visit the SCALE website at <https://www.ornl.gov/scale/learning> or send an email to scalehelp@ornl.gov.

Please email scalehelp@ornl.gov for any related question or suggestion.

SYMPOSIA

2025 CALENDAR

October 2025

TopFuel 2025: Nuclear Reactor Fuel Performance Conference, October 5 -9, 2025, Nashville, Tennessee, USA. Website: <https://www.ans.org/meetings/topfuel2025/>

November 2025

2025 IEEE Nuclear Science Symposium Medical Imaging Conference and Room Temperature Semiconductor Detectors Symposium, November 1 – 8, 2025, Yokohama, Japan. Website: <https://nssmic.ieee.org/2025/>

2025 ANS Winter Conference and Expo, November 9 – 12, 2025, Washington, D.C., USA. Website: <https://www.ans.org/meetings/view-wm2025/>

16th International Symposium on Fusion Nuclear Technology, November 9 – 14, 2025, Knoxville, Tennessee, USA. Website: <https://isfnt-16.ornl.gov/>

2026 CALENDAR

February 2026

3rd World Nuclear SMR and Advanced Reactor Congress 2026, February 10 – 21, 2026, London, United Kingdom. Website: TBD.

March 2026

33rd WiN Global Annual Conference, March 30 – April 4, 2026. Website: <https://win-global.org/annual-conferences/>

April 2026

World Nuclear Fuel Cycle, April 14 – 16, 2026, Monaco, Website: <https://world-nuclear.org/events/world-nuclear-fuel-cycle-2026>

PHYSOR 2026: International Conference on the Physics of Reactors, April 19 – 23, 2026, Turin, Italy. Website: <https://www.physor2026.org/>

Pacific Basin Nuclear Conference, April 22 – 24, 2026, Busan, South Korea. Website: <https://kapconf.com/en/>

Nuclear and Emerging Technologies for Space (NETS-2026), April 27 – 30, 2026, Dayton, Ohio, USA. Website: <https://www.ans.org/meetings/view-nets2026/>

May 2026

ICENES 2026: International Conference on Emerging Nuclear Energy Systems, May 11 – 12, 2026, Las Vegas, Nevada, USA. Website: TBD

15th International Conference of the Croatian Nuclear Society, May 31 – June 3, 2026, Zadar, Croatia. Website: <https://nuclear-option.org/>

2026 Annual Conference of the American Nuclear Society, May 31 – June 3, 2026, Denver, Colorado, USA. Website: <https://www.ans.org/meetings/view-398/>

15th International Conference of the Croatian Nuclear Society, May 31 – June 3, 2026, Zadar, Croatia. Website: <https://nuclear-option.org/>

June 2026

International Conference on Plasma Sciences, June 22 – 26, 2026, Lake Tahoe, Nevada, USA. Website: <https://icops.ieee.org/icops2026/>

July 2026

IEEE Nuclear and Space Radiation Effects Conference, July 20 – 24, 2026, San Juan, Puerto Rico, USA. Website: <https://www.nsrec.com/>

August 2026

GLOBAL 2026, August 16 – 20, 2026, Chicago, Illinois, USA, Website: <https://www.ans.org/meetings/global2026/>

2026 Nuclear Energy Conference and Expo, August 24 – 27, 2026, Dallas, Texas, USA, Website: <https://nuclearenergyconference.org/>

October 2026

15th International Conference on Radiation Shielding/ 23rd Topical Meeting of the Radiation Protection and Shielding Division, October 25 – 29, 2026, Jeju Island, South Korea. Website: <http://icrs15.org/>

November 2026

2026 IEEE Nuclear Science Symposium Medical Imaging Conference and Room Temperature Semiconductor Detectors Symposium, November 7 – 14, 2027, Granada, Spain. Website: TBD.