

## STUDSVIK SCANDPOWER WELCOMES CEO AND PRESIDENT ROBERT WHITTLE

Studsvik is pleased to welcome Rob Whittle as the new CEO and President of Studsvik Scandpower, Inc. effective April 12th, 2021. In this role, Rob leads the worldwide Studsvik Scandpower business area which provides the global civil nuclear energy industry with unparalleled service and State-of-the-Art nuclear simulation software.

He is a member of Studsvik parent company's Executive Management Group.

"Robert Whittle has been working more than 30 years with business development and innovation of software. He also has significant executive experience of growing revenue which is ideal for this position. I am pleased to welcome Robert to Studsvik," says Camilla Hoflund, CEO of Studsvik.

Rob has a wealth of experience with positions such as VP of Licensing at GE and Director of Worldwide OEM Business Development at Motorola. Rob most recently served as the President of Astron Aerospace which is developing a revolutionary new and efficient rotary engine for aircraft as well as many other applications. Rob has global experience with high-tech software companies and has worked for several years in the nuclear industry at Los Alamos National Laboratory.

"I'm excited to join Studsvik because the people are incredible and Scandpower has amazing growth potential."

Rob lives in Cedar Hills, Utah with his wife, Joy but will be based out of the Idaho Falls office. He is an avid skier and canyoneer and enjoys fly fishing when time permits.

Feel free to contact your Studsvik Scandpower representative to plan an introductory meeting (In-person or virtual) with Rob to provide feedback on Studsvik Scandpower products and services to fresh ears!

## GARDEL WEBINAR PLANNED FOR JUNE 22, 2021 10:00AM – 11:00AM EDT

[REGISTER HERE](#)

Based on requests from customers in a survey distributed in October 2020, Studsvik Scandpower's next webinar will cover a real-world application of its GARDEL core monitoring system. The topic for the Webinar is "Using GARDEL to Plan for Re-start Following a Plant Trip." Studsvik will send a notice with a registration link as soon as the event is scheduled. Presentations and videos from the previous Webinars, "CASMO5 & SIMULATE5 Upgrades and Enhancements" (June 2020), and "Transient Analysis Using S3K/S5K" (December 2020), are available on the [Studsvik Scandpower Support Site](#).

## MARLA SPENT FUEL MANAGEMENT AT GRAND GULF

**MARLA reduces the time required to plan pre-outage pool maintenance by 50% at Entergy's Grand Gulf.** Grand Gulf implemented and started benchmarking fuel movement tasks with Studsvik's MARLA software. MARLA is point-and-click, graphical optimization software for tracking and managing all SNF at a plant site. Initial reports from Grand Gulf indicate a time savings of 50% in developing the plan to locate all fresh fuel assemblies received and reconfigure the spent fuel pool to open B.5.b acceptable rack locations to store discharged fuel assemblies from the core. The combination of new fuel receipt and B.5.b planning typically takes 3 – 4 weeks depending on the amount of fresh fuel and the amount of discharged fuel. MARLA's automation and optimization algorithms cut that time in half, leaving more time for a thorough review that all procedural requirements were met.

## CMSBUILDER: BETTER MANAGE CORE DESIGNS THAT ARE EASY TO SEE

SSP's core design interface tool, **CMSBuilder**, is geared toward efficient visualization and rapid expert assessment by core design engineers seeking perfection in core performance. Derived from the popular XIMAGE tool, CMSBuilder leverages the effectiveness of the CMS codes, allows the user to specify the combination of CASMO and SIMULATE versions for analysis, can run on practically any computing platform, and provides flexibility needed to integrate into reload design processes. Recent updates to CMSBuilder reflect customer feedback and suggestions from real-world usage in PWR core design, including multi-cycle projections. Development activities are nearing completion for BWR lattice and core design capabilities, and extension to hexagonal core geometry is being explored in order to leverage the CMS5-HEX/VVER code suite. What better time to contact SSP to learn more about CMSBuilder, and consider joining the group of early adopters influencing its development and refinement?

CMSBuilder inquiries may be sent to Phil Sharpe, +1-910-880-5669, [phil.sharpe@studsvik.com](mailto:phil.sharpe@studsvik.com).

## IN DEVELOPMENT: S5K KINETIC TRANSIENT CODE

As presented at last UGM, SSP has been actively working on the development of SIMULATE5-K (S5K), a best estimate transient code with an advanced neutronic core model, based on SIMULATE5 (S5), coupled with a detailed thermal-hydraulic channel model. The new development aims to remove various S3K modeling assumptions concerning the vessel components and allowing flexibility describing the condition of the coolant in these regions. Moreover, S5K offers fully compatible neutronic and thermal hydraulics modeling capability between the steady-state and transient calculations and S5K will be able to take full advantage of the very detailed S5 models developed by the user. S5K can also optionally be linked with VIPRE (sub-channel) and systems codes: RELAP, TRACE, RETRAN, and APROS.

Increased fuel burnup associated with longer cycles and the evidence of fuel failures in highly burned fuel when subjected to rapid power surges, has led to recent revisions in the fuel safety limits for reactivity insertion accidents (PWR CRE and BWR CRD). For example, in June 2020, the USNRC released the Regulatory Guide 1.236. The S5K methodology to address RG 1.236 is currently being developed and improvements to the pin-by-pin fuel temperature and enthalpy calculations will be introduced to satisfy the new regulatory requirements as much as possible. The S5K Neutronic model is an extension of the two-group ANM RAMONA5 kinetics model. The transient multi-group, three dimensional neutronic equations are derived consistent with the static analytical nodal model implemented in S5. An arbitrary number of neutron and delayed neutron precursor group can be used. The treatment of the temporal dependence yields a fixed source problem that can be solved utilizing the already existing fixed-source methodology. The axial and radial homogenization models in S5 have been extended to the transient domain in S5K using the time frequency transformation that converts the time dependent equations to a pseudo-static equation.

The S5K thermal-hydraulic and fuel pin models are a direct extension of the S5 models. Each assembly in the core is described as an active channel plus several parallel internal bypass channels (water rods). In addition, for Boiling Water Reactors (BWRs), the common bypass is explicitly modeled. The S5K power deposition model is consistent with the S5 model: the energy source (i.e., fission plus decay heat) are deposited inside the fuel pellet, in the active coolant, in the water rods, common bypass etc.

A major milestone of the project was achieved in April 2021, with an internal beta version release. This initial S5K version can perform simple PWR/BWR transients like, control rod movements, inlet coolant temperature transients, inlet flow transients, and pressurization transients. An external beta release is expected in the second half of 2021.



## DID YOU KNOW...

...That SIMULATE5 now has the ability to screen the core for evaluation of the Alternative Radiological Source Term (AST) by comparing the computed pin linear heat generation (LHGR) versus the limits set by either US NRC Reg. Guide 1.183 or Draft Reg. Guide 1199. Available in the latest release of SIMULATE5 v1.21.00 this capability is sure to be a time saver for you!

## THE 2021 STUDSVIK SCANDPOWER USER GROUP MEETING IS SCHEDULED FOR SEPTEMBER 21-23

We are pleased to announce the 2021 Studsvik Scandpower's International Users Group Meeting will be a hybrid in-person and virtual meeting.

The Users Group Meeting is the forum where users of Studsvik Scandpower's software meet and exchange information. Informal presentations on software applications and experiences with our software products are welcomed. Studsvik Scandpower's experts will be available for discussions and will present updates on software development and new products.

The meeting will start on Wednesday, September 22 and end on Thursday, September 23.

The meeting times will be 9:00 AM Pacific US Daylight Time (06:00 Eastern US Daylight) to 5:00 PM Pacific Daylight Time both days.

More information on the hotel location and discounted room rates coming soon. Please visit our webpage: [ugm.studsvikscandpower.com](http://ugm.studsvikscandpower.com)

## SUPPORT SITE OFFERS EXTENSIVE RESOURCES

In addition to its use as a portal for technical support, the Studsvik Scandpower Support Site offers extensive resources including technical papers and presentations. The CASMO section alone hosts more than 100 papers. User Manuals, Methodology Information and Changes Documents also are available. In addition, the Site hosts presentations from more than a decade of User Group Meetings. It's all at: <https://support.studsvikscandpower.com/hc/en-us>

## ON THE CALENDAR

- Webinar – "Using GARDEL to Plan for Re-start Following a Plant Trip." June 22, 2021 at 10:00 AM – 11:00 AM EDT
- Mathematics & Computational Methods Conference 2021 (ANS) (Oct.3-7, 2021, Raleigh NC) R. Ferrer and J. Hykes will present "Improved Rational Approximation for Spatially Dependent Resonance Shelf-Shield in CASMO5," and "Parallel Computing in CASMO5"
- Top Fuel 2021 – (Oct. 24-28, 2021, Santander, Spain) – Ulrik Svensson, Gerardo Grandi, David Schrire, Kyle Johnson, and Daniel Jädernäs will present "Modelling Lithium Uptake in PWR Fuel Cladding Oxide"
- Be on the lookout for Studsvik Scandpower's papers at Physor 2022

## HELPFUL LINKS

- [Software Updates \(January 2021\)](#)
- [S3K Webinar \(December 2020\)](#)
- [CMS5 Webinar Video \(June 2020\)](#)
- [2020 UGM videos \(October 2020\)](#)
- [2020 UGM presentations \(October 2020\)](#)
- [Studsvik Scandpower Technical Support](#)