

The RETRAN/VIPRE Newsletter

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November 2005 RETRAN and VIPRE User Group Meeting Held in Palo Alto

The fall 2005 RETRAN/VIPRE User Group (RUG) Meeting was hosted by EPRI in Palo Alto, California. Mr. Gregg Swindlehurst, Steering Committee Chairman, welcomed the attendees and opened the meeting, which was attended by EPRI, eight U.S. utilities, one U.S. commercial vendor, four international organizations, and CSA.

The meeting was held during the same week as the EPRI-sponsored FALCON user group meeting resulting in a good representation for both code groups.

The user group meeting was split between RETRAN and VIPRE project management issues and technical presentations. CSA presented a summary of the status of the RETRAN project for 2005, including the current membership roster, project revenue from membership fees, and year-to-date expenses. The code maintenance work performed for the year was discussed along with work scope items for the remainder of the year.

Preliminary budget, fee structure, and candidate work scope items for 2006 were identified. The 3% user group fee increase approved in the May 2005 RVUG meeting was translated to a funding formula that was approved by the membership.

CSA distributed a handout and presented a six-year plan for RETRAN development tasks.

A summary of the VIPRE project was also presented by CSA. It included revenues from maintenance fees and carryover from EPRI maintenance for

prior years, year-to-date expenses, and a summary of the work completed. CSA identified potential tasks for development work for 2006. Members were asked to provide additional work scope items of interest so they can be finalized.

As part of a joint meeting with the FALCON user group, Suresh Yagnik of EPRI presented an overview of FALCON (Fuel Analysis and Licensing Code).

Utilities made formal and summary presentations of RETRAN and VIPRE activities:

- Two presentations were made by staff members from Duke Energy.
 - The first presentation dealt with the UFSAR Chapter 15 Margin Recovery.
 - The second presentation discussed Simulation/Evaluation of Oconee Nuclear Station Unit 3 8/31/05 Reactor Trip Event.
- A presentation was made by Iberdrola that addressed the RETRAN-3D analysis of Cofrentes NPP CRDA, Cold and Hot Conditions.
- TXU presented the Uncertainty of Initial RCS Temperature on Transient Analysis.



Gregg Swindlehurst, Duke Energy

- Westinghouse presented the RAVE methodology application for AP1000 plant design.

Sama Bilbao y Leon was unanimously elected by the membership to replace Todd Flowers as a Steering Committee Member.

Current Steering Committee members are:

Gregg Swindlehurst, Duke (Chairman)
 Andres Gomez Navarro, Iberdrola
 Sama Bilbao y Leon, Dominion
 David Huegel, Westinghouse
 Adi Irani, ENN

The spring RVUG meeting will be held in Ogden, Utah, in early May.

Thanks to EPRI for their hospitality and willingness to host the RVUG Meeting.

New Organizations Join RVUG



Noburu Katayama and Takauki Negishi, GISC

Two organizations have joined the RVUG in 2005. Genden Information System Company (GISC) is currently interested in using RETRAN-3D to support the Tokai 2 plant and will be very active in the near future. Mr. Hiroshi Kawai of GISC attended a RETRAN training session in Idaho Falls, Idaho, in 2005. Two individuals from GISC attended the November 2005 RVUG meeting in Palo Alto. Dr. Noburu Katayama and Mr. Takauki Negishi traveled from Tokyo, Japan, to attend the RVUG meeting and the associated FALCON meeting at Palo Alto.

Arizona Public Service has joined both the RETRAN and VIPRE user groups in 2005. APS will use the codes to support the Palo Verde units.

FPL has joined the VUG for 2005. They plan to use VIPRE-01 for their Seabrook unit in support of their AOA evaluation effort.

KEPRI Group Sponsors RETRAN Training

A KEPRI RETRAN training session was held in Daejeon, Korea (Republic), on October 4-6, 2005. The sessions were held at the training facilities of KAERI International Nuclear Training and Education Center.

The session was sponsored by KEPRI and 15 individuals from the KEPRI organization attended. KEPRI also invited representatives from the Korea Institute of Nuclear Safety (KINS), the Korean Nuclear Licensing Authority.

The three-day session consisted of a combination of RETRAN theory lectures combined with sample problem sessions designed to give the individuals some practical "hands-on" experience with the RETRAN code.



**Garry Gose, CSA, Presenting Lecture at
KEPRI Training Facilities**

PC Version of VIPRE-01 MOD2.2 Available

A new version of VIPRE-01 is available from CSA for VUG members using Windows XP. It contains Modifications 233 through 247, which include eight error corrections, modifications to remove platform dependencies and ease code maintenance, and six new code features. This version, designated as MOD2.2, satisfies the quality assurance requirements of 10CFR50 Appendix B.

The new features include:

- an option to generate a file to interface with the EPRI BOA code,
- improved input processing that identifies input errors that previously resulted in run-time errors,
- an option to read a new VIPRE Boundary Condition (VBC) file generated by RETRAN-3D,
- an extension to the nuclear rod model input that provides for detailed pellet nodalization with variable mesh size and burnup dependent material properties,
- an MDNBR iteration option on inlet temperature/enthalpy where volumetric flow remains constant,
- an option to allow input in GPM, and
- clean-up so user-selected output files are only generated if requested (restart, plot, microfiche, CHF summary, auxiliary edit).

The PC transmittal is comprised of a PC executable file, a license file, a batch file to run the code, sample problem input and output files, an automated compare program to test installations against baseline results, and Revision 5.0 of the documentation in Acrobat PDF format. Automated installation procedures are provided to install the code.



New Control System Capability Saves Time and Allows More Elements

RETRAN-3D MOD004.1 has some control system features that will be of interest to all users. There is no longer an upper limit of 999 to the number of control block elements. And now users can manipulate large sums and limits without adding a lot of complexity to the input model.

By using new control system input and new control block data records, 702XXXX and 703XXXX, up to 9999 elements can now be described. These can be used in combination with the original 702XXX and 703XXX data records so minimal impact on existing input models is seen.

New control block elements are available in RETRAN-3D MOD004.1 that allow users to model more with less, so to speak. The new "Super" blocks allow the user to work with arrays of inputs to perform algebraic operations. These blocks, Super Sum, Super Minimum, and Super Maximum, are designated by the symbols SSM, SMN, and SMX, respectively.

The blocks allow the user to describe a series of inputs and the output is the summation, the maximum, or the minimum of all the input data. The SSM, summation block simplifies input files because the user is no longer required to build a 'cascade' of summation blocks for multiple inputs as the original SUM of two inputs required.

The SMN and SMX super minimum and maximum blocks allow new flexibility in processing data. For example one can now find the maximum metal temperature in a core, the maximum pressure on any number of variations with just a few simple input additions.

About This Newsletter

RETRAN Maintenance Program

The RETRAN/VIPRE Maintenance Program is a program that provides for the support of software developed and maintained by CSA. The main features of the Subscription Service include:

- the code maintenance activities for reporting and resolving possible code errors,
- providing information to users through the User Group Meetings and this newsletter, and
- preparing new versions of RETRAN and VIPRE.

The RETRAN Maintenance Program now has 19 organizations participating in the program, including 13 U.S. utilities and 6 organizations from outside of the U.S. Ten U.S. utilities are currently participating in the VIPRE maintenance program. A Steering Committee, composed of representatives from the participating organizations, advises CSA on various activities including possible enhancements for the code and the scheduling of future code releases. Information regarding the Maintenance Program can be obtained from

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Newsletter Contributions

The RETRAN/VIPRE Newsletter is published for members of the Subscription Service program. We want to use the newsletter as a means of communication, not only from CSA to the code users, but also between code users. If this concept is to be successful, contributions are needed from the code users. The next newsletter is scheduled for July 2006 and we would like to include a brief summary of your RETRAN and VIPRE activities. Please provide your contribution to CSA, P. O. Box 51596, Idaho Falls, ID 83405, or to the email addresses below by July 3, 2006.

Contributors of a feature article will receive a RETRAN polo shirt. We are looking forward to hearing from all RETRAN and VIPRE licensees.

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The RETRAN web page is located at

<http://www.csai.com/retran/index.html>.

The VIPRE web page is located at

<http://www.csai.com/vipre/index.html>

Previous issues of the RETRAN/VIPRE Newsletter are available from the RETRAN or VIPRE web pages.

Steering Committee Members

Gregg Swindlehurst, Duke Energy (Chairman),
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Andres Gomez Navarro, Iberdrola, agn@iberinco.com
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Adi Irani, Entergy Nuclear Northeast, airani@entergy.com

Calendar of Events

User Group Meeting:
May 2006
Ogden, Utah
Details will be emailed
to Maintenance
Group Members