

## Some Nuclear News Featuring RELAP5-3D from January - March

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April, 2018

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*Some articles written in January through March 2018 show RELAP5-3D is heavily involved in the progress being made in the Nuclear Industry.*

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These articles present recent uses of the RELAP5-3D code in important initiatives in the nuclear industry. The articles are summarized and presented in reverse chronological order. See the full article for complete details.

The articles also reinforce the continued and expanding application of RELAP5-3D in the worldwide nuclear industry.

### Findings in the Area of Nuclear Power Reported from Institute of Advanced Studies (Fourier analysis of the RELAP5/3D adaptive time-stepping scheme)

March 2, 2018

<https://www.energycentral.com/news/findings-area-nuclear-power-reported-institute-advanced-studies-fourier-analysis-relap53d>

#### SUMMARY

This article from San Jose dos Campos, Brazil, gives a high-level overview and links to research by the Institute of Advanced Studies in the Area of Nuclear Power on the Fourier analysis of the adaptive time-stepping scheme used by RELAP5-3D for the calculation of a natural circulation loop. The research is funded by the Brazilian air force. The FFT (Fast Fourier Transform) and RMSD (Root Mean Square Deviation) procedures were applied also to study agreement between the RELAP5-3D calculations and experimental data when two-phase flow instabilities occur in the transient. The effect of four different maximum timestep sizes were employed with RELAP5-3D to study their effect on accuracy of the temperature calculation.

### Westinghouse bailout fuels hope for India's nuclear energy sector

Jan 10, 2018, 04:38 IST

<https://timesofindia.indiatimes.com/india/ray-of-hope-for-westinghouse-nuclear-reactors/articleshow/62433138.cms>

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*RELAP5/SCADAP is used to analyze nuclear power plants in India.*

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#### **SUMMARY**

With the sale of Westinghouse, the bankrupt energy company, to Brookfield Business Partners, a Canadian investment major, the long delayed project to build AP-1000 nuclear power plants in India will be able to commence. The project has been on hold since 2017 when the company filed for bankruptcy. This will boost India's nuclear energy production considerably. RELAP5 had been used in the design and analysis of the predecessor AP600 and in the AP1000 work.

### **U.S. Nuclear Regulatory Commission Approves Key Safety Aspect to NuScale Power's Advanced Reactor Design**

January 09, 2018 08:00 AM Eastern Standard Time

<https://www.businesswire.com/news/home/20180109005325/en/U.S.-Nuclear-Regulatory-Commission-Approves-Key-Safety>

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*NuScale successfully demonstrates approach that allows its SMR to be safe without need for electrical power. NOTE: The Safety Analysis for the NuScale licensing submittal was performed with a Commercial Grade Dedicated version of RELAP5-3D.*

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#### **SUMMARY**

NuScale submitted an application for a new SMR (Small Modular Reactor) to the USNRC (United States Nuclear Regulatory Commission). After careful consideration, the USNRC has decided that the novel safety design approach eliminates the need for class 1E power, the regulatory standard set for the design of safety-related nuclear power plant electrical systems. All other US nuclear power plants are required to have class 1E power supplies to ensure safety. Thus, the USNRC, in its newly released Safety Evaluation Report, approved NuScale's Licensing Topical Report, "Safety Classification of Passive Nuclear Power Plant Electrical Systems" because the company established that a design can be safe without relying on outside safety-related electrical power.