Workshop on
REAL TIME SIMULATION OF POWER SYSTEMS ON RTDS

15th June 2022

आयोजक / *Organised By*

विद्युत प्रणालियों प्रभाग/ Power systems Division

केन्द्रीय विद्युत अनुसंधान संस्थान

CENTRAL POWER RESEARCH INSTITUTE

(भारत सरकार की सोसाइटी, विद्युत मंत्रालय / **Govt. of India Society, Ministry of Power**)

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About the Workshop

Power system simulation studies can involve nearly any network configuration from a very small study of a single source and load model through to models that represent the fundamental dynamics of an entire utilities network. Real Time Digital Simulation tools provide an efficient means for evaluating the performance and functionality of control and protection equipment under realistic conditions. State of the art Real Time Digital Simulation Facilities are available at CPRI, at its Bangalore Complex considering the technological developments in the field of real time power system simulation to meet the needs of the electrical industries. Fully digital technology allows accurate and reliable simulations of transient phenomenon in electric network both for closed loop equipment testing and off-line simulation studies. The digital simulators consist of custom hardware and software specially designed to perform electromagnetic transient simulations. Accurate power system component software models over a large frequency range to represent most of the complex elements present in physical power systems are available in simulators. Real time simulators are used by all the world's major protection and control equipment manufacturers, as well as by leading electric utilities, educational institutions and research facilities around the world.

The Workshop on Real Time Digital Simulation of Power systems is aimed at providing theory and modelling concepts of power system components in real time simulation for various applications.

Topics

The following topics will be covered in the workshop:

- Real time digital simulation of power systems
- Modelling of power system components in RTDS simulator
- Small time step modelling of power electronic devices in RTDS
- Modelling of hardware interface in RTDS
- Modelling of Renewable Energy Sources in RTDS.
- Modelling of Micro Grid
- Modelling of Electric vehicles
- Cyber security applications
- Demo of hardware in loop simulation

Who should attend?

The training programme is intended for practicing engineers from utilities, academicians, manufacturers and researchers in power systems.

Registration*

Registration Fee (General)	:	Rs. 5,900/- per participant
For Full time Students only	:	Rs. 2,950/- per participant
For Faculty members of Educational Institutions	:	Rs. 4,130/- per participant
For Govt. Utilities/Electricity Boards	:	Rs. 4,130/- per participant

Group discount For the other Organisations/Industries:

- 10% on General Registration Fee is applicable if 3 participants are participating from the same organisation /Industries.
- 20% on General Registration Fee is applicable if 4 or more participants are participating from the same organisation /Industries.

* Registration fee mentioned is inclusive of 18% GST

The registration fee for this workshop shall be made in advance by the way of NEFT/RTGS transfer. Bank transaction charges if any shall be borne by the respective delegate or organisation. The registration fee includes delegate kit with course material, tea/coffee, snacks and lunch during the workshop. As the seats are limited, registration will be on first come first serve basis. Registration form, complete in all respect shall be sent to the programme coordinator along with the registration fee. Kindly use separate form for each participant, downloaded/photo copy of registration form is acceptable.

Date and Venue

The workshop will be held on 15th June 2022 at CPRI, Bangalore
Venue: Power Systems Division

Travel and Accommodation

- Bengaluru is well connected by Road, Rail and Air.
- Participants have to make their own travel arrangements.
- Guest house accommodation on twin share basis can be provided on chargeable basis subject to availability.

Power systems Division

Power Systems Division with its state-of-the-art facilities and latest software tools offers a wide range of power system simulation services, including real time performance analysis of various types of controllers such as FACTS, HVDC, SVC and protection relays. It has been conducting power system studies for the past two decades for its own needs and at the request of utilities and manufacturers. To carry out such studies the division possesses Real Time Digital Simulators from M/s RTDS & M/s Opal RT and various Power System Analysis Software Packages. Power Systems Division is also carrying out the Protection system studies and Protection audit for utilities. Furthermore, the Division is accredited by ISO: 9001-2008.

CPRI Profile

Central Power Research Institute (CPRI) set up in 1960 by the Government of India, functions as a National organization for applied research in power sector and also serves as an Independent Laboratory for testing and certification of power equipment. CPRI is a member of STL (Short Circuit Testing Liaison) of Europe and is accredited by M/s ASTA of UK. CPRI also provides consultancy services on various facets of power sector. CPRI has expertise in the area of Simulation, Diagnostics, System Analysis and Testing. CPRI laboratories have modern equipment needed for Power system simulation, Short circuit testing, Diagnostics of equipment, Materials engineering, Seismic qualification etc. CPRI has experienced faculty in different subjects of power sector with practical experience in their areas of interest as well as extensive experience in presenting courses/seminars. Over the period, CPRI officers have gained lot of practical knowledge concerning to testing and operational problems of the industry. CPRI is a leading provider of Training and Continuing Education to Utilities, PSUs across the country for the past 50 years. CPRI is continuously setting new standards in training and continuing education from basic theoretical information to practical hands-on electrical equipment training. CPRI courses have made substantial impact on the level of training and education to India's electricity utilities, manufacturing companies, transmission and distribution companies. By upgrading the occupational skills of technical workers, CPRI training courses have improved the career path of many electrical personnel as well as contributed towards improvement in electricity efficiency, plant productivity, and electrical system reliability and to the overall competitiveness of Indian industry.

Registration form shall be sent by E-mail/ Fax / Post to

Dr J Sreedevi

(Program Coordinator)

Power systems Division

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(Govt. of India Society, Ministry of Power)

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Dr. J. Sreedevi, is graduated in Electrical & Electronics Engineering from Sri Venkateswara University Tirupati in 1991 and post graduated in System Science & Automation from IISc Bengalure in 1994. She has Ph.D from Visvesvaraya Technological University, Belagavi in 2021. She is Joint Director in Power Systems Division of Central Power Research Institute (CPRI), Bengalure. She has 28 years of experience working in the field of Power System modelling and Simulation. She rendered consultancy services for various utilities and industries in the areas of power flow studies, transient stability studies, voltage stability studies, short circuit studies, reactive power compensation studies, Islanding/parallel operation, load shedding studies and harmonic filter design studies. She has expertise in carrying out Sub Synchronous Resonance(SSR) studies for series compensated lines. She has competence in hardware in loop testing of relays, FACTS controllers, load shedding controllers on Real Time Digital Simulator. She has knowledge of modelling the renewable energy sources and carry out studies on grid integration of renewable energy sources. Executed the Research & Development projects in the areas of HVDC transmission, Flexible AC Transmission Systems and grid integration of renewable energy sources and phasor measurement units. She has presented several papers in national and international conferences. Her research interests are HVDC & FACTS controllers, renewable energy sources.