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Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi

New Delhi & Certified by ISO 9001:2015, <http://www.lbrce.ac.in>

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Report On Event Five-Day Online Faculty Development Program on “Industrial Integration of Renewable Energy Systems - Research Tools/Industrial Perspective”.

Event Type : Online Faculty Development Program

Program Date / Duration : 18th – 22nd May, 2020/(Five Days)

Resource Person :

1.Mr.D.Ramesh Babu, Sr.Engineer- Power, Cisco Systems INDIA PVT LTD. Bangaluru.

2.Mr.Siva Prasad, ADE, Narla Tata Rao Thermal Power Station, Vijayawada.

3.Dr.K.Harinadha Reddy, Professor & Vice Principal, LBRCE

4.Mr.A.Venkateswarulu, Retd., D.E, APGENCO

Name of Coordinators : 1. Dr.J.Sivavara Prasad 2. Mr.P.Ratnakar Kumar

Target Audience : Faculty Members

Total no of Participants : 180

Objective of the event: The main objective of this five day on line faculty development programme (FDP) is to discuss the Renewable Energy Technology, with Future Perspective of power electronics in Renewable Energy Systems (RES); Practical problems in the installation of RES, Battery Energy storage systems are discussed. This FDP will bring together faculty members from different engineering colleges and industrial fields to update their technical knowledge in the field of RES.

Outcome of event: In this Five day on line faculty development the participants were able to acquire theoretical and practical knowledge on Integration of Renewable Energy Systems– challenges in RES with grid connected systems.

Description / Report on Event: The Department of EEE conducted a Five-Day on line faculty Development Program on “Industrial Integration of Renewable Energy Systems - Research Tools/Industrial Perspective”, during: 18th – 22nd May, 2020 in online Zoom platform for national level faculty members.

Inaugural Session:

- The Chief guest Dr. K.Appa Rao Principal ,LBRCE inaugurated the Five day Online Faculty Development Program.
- Dr. K.Appa Rao in his inaugural address, encouraged the faculty to participate in these types of events to acquire additional skills required for the industry apart from regular academic and administrative works. Finally he congratulated the participants who have registered for this Five day Online FDP Program.
- Program Convenor, HOD of EEE, Prof.M.S.Giridhar in his address welcomed the Participants, Resource person and Chief Guest. In his welcome address he spoke on importance of Renewable Energy systems and integration to grid.
- Coordinator Dr.J.Sivavara Prasad welcomed and given a word about Industrial Integration of Renewable Energy Systems - Research Tools/Industrial Perspective.

First Day: Session is engaged by Mr. D. Ramesh Babu Garu, senior engineer, Power, Cisco pvt Ltd, Bangalore.He given complete overview about power semiconductor devices, various Power converters for Renewable energy systems. He also gave real time converter model designs. The total registered participants 180 and 100 attended for live session.

Second Day: This session is engaged by Dr.K.Harinadha Reddy, Vice-Principal of LBRCE.He given the importance of Distributed Generation, islanding detection and issues related to islanding. Problems and methods of mitigating issues between DG and utility Grid. He also discussed some ongoing research problems to the participants in the area of integration of renewable energy systems.

Third Day: This session is engaged by Mr Siva Prasad, ADE, Dr.NTTPS, sir given the presentation on "power generation and maintenance". He explained the state wide thermal, hydro and renewable power generation capacity and upcoming power plants and their availability of generation concept. Also discussed the coal dumping and functioning and maintenance of various parts of the power plant.

Fourth Day: Resource person Mr. D. Ramesh Babu Garu. Senior engineer, Power, Cisco pvt Ltd, Bangalore discussed about the issues and Challenges in power electronics converters used in Integration renewable energy systems to grid, it was also an interactive session with participants.

Fifth Day: Resource person Mr.A.Venkateswarulu, Retd., D.E, APGENCO given overview of various renewable energy sources. He suggested some ongoing research problems to the

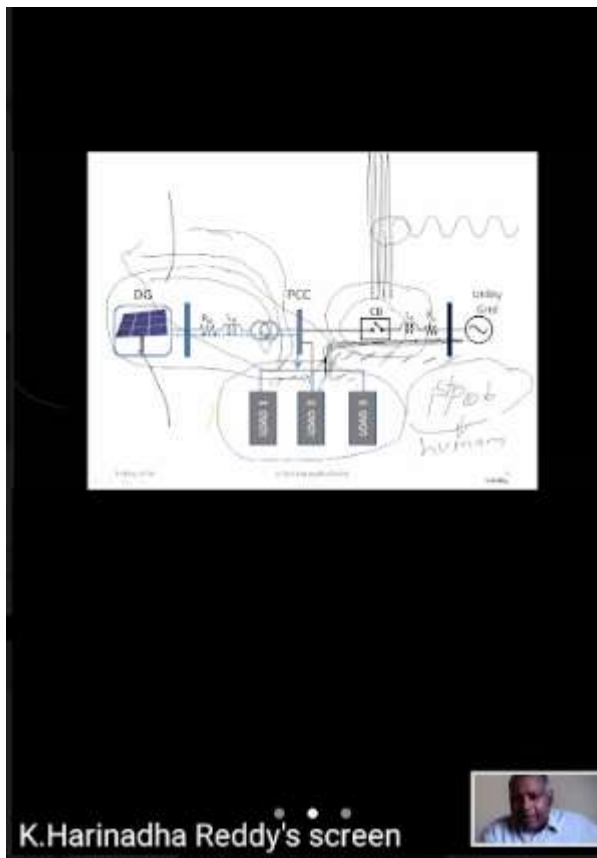
participants in the area of integration of renewable energy systems. He also gave real time converter model designs.

During the valedictory session Dr.K.Appa Rao ,Principal motivated the faculty members to make use of the things which are learned in these five days and improve research skills.

During the valedictory session coordinator Dr.J.Sivavra Prasad thanked all the dignitaries and participants and finally issued thee participant certificates with the help of google form.

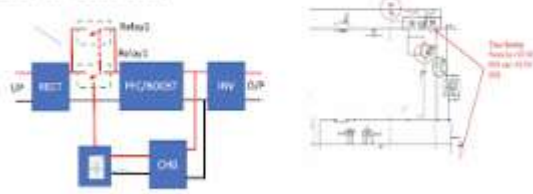
Feedback / Suggestions from the participants:

1. Conduct many more FDPs in the emerging areas of EEE.
2. The resource persons are having more practical knowledge.



Case Study 1 – PFC Section

- Failure Symptom: IGBT FAILS, E-CAP FAILS, PCB TRACE BURNT



Ramesh Darla's screen

The screenshot shows a presentation slide titled "NEES PROTO SET UP DIAGRAM". The slide contains a detailed block diagram of a power system. The diagram shows a "GRID" connected to a "GRID/GEN/INVERTER" block. The output of this block is connected to a "DC BUS" block. The DC bus is connected to a "DC/DC CONVERTER" block, which is connected to a "DC/AC INVERTER" block. The DC/AC inverter is connected to a "LAMP LOAD" block. The DC bus is also connected to a "BATTERY" block. The DC/DC converter is connected to a "CONTROL" block. The DC/AC inverter is connected to a "PROTECTOR" block. The slide also includes a list of "Target Customers":

1. Low Power application like Homes 1 to 20W
2. Medium Power applications like Small Offices and Schools 2 to 5kW
3. High Power application like Banks and Offices 10kW

Below the list, there is a section titled "NEES PROTO SET UP DIAGRAM" with a small diagram showing a "GRID" connected to a "DC/DC CONVERTER" block, which is connected to a "DC/AC INVERTER" block, which is connected to a "LAMP LOAD" block. The slide also includes a footer with the text "NEES PROTO SET UP DIAGRAM" and "NEES PROTO SET UP DIAGRAM".