

Report of Tutorial on ‘Protection and Safety on Power systems with Highly Renewable Distributed Energy Resources’

Date: 04th April, 2019 | **Venue:** MC601, Seminar Hall, Main Building, Marwadi University

Marwadi University had organized a one-day tutorial on ‘**Protection and Safety on Power systems with Highly Renewable Distributed Energy Resources**’ under the umbrella of IEEE Gujarat Section on 04th April 2019.

Participants: 42 participants (PG students, Research Scholars and Faculties from institutes across Gujarat)

Objective:

To bring industry, academia and researchers on common platform, to discuss current trends in Protection of Power System with integration of Distributed Energy Resources and to create awareness about the impact of Renewable Energy Sources in the local grid.

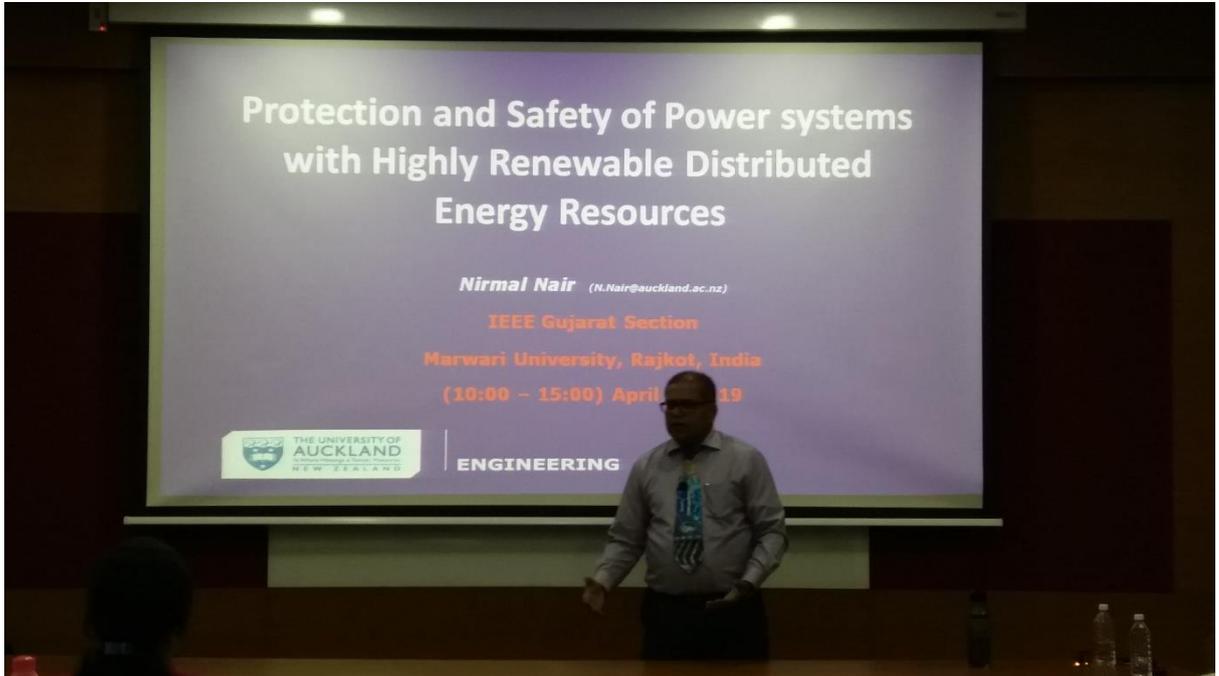
Brief Description of Tutorial:

Date: 4th April, 2019 | **Venue:** MC601, Seminar Hall, Main Building, Marwadi University.

It was discussed that integration of different technologies and varying scales of renewable generation across interconnected transmission and distribution grids has accelerated resulting in pressure on ensuring safety and operational integrity of existing reliable power system operation. In this context, one of the critical aspects impacted is the practice of power system protection and safety which this plenary had addressed. Existing knowledge of traditional safety and protection philosophies, schemes, practices and related system impacts has continued to be revisited to factor unique DER fault/abnormal characteristics and how they are electrically seen by the existing AC system and Intelligent Electronic Devices (IEDs) protection devices. This plenary had highlighted global transformative power system protection/safety concepts that helped understand challenges that highly distributed DER penetration causes and identify possible solutions using existing and newer technologies.

Outcome of Session:

- Power System Protection design for distribution system considering reliability as well as resilience
- Challenges in achieving effective sensitivity and selectivity for grid protection schemes with DER
- Case study on Improvisation in standard of Low Voltage Ride Through (LVRT) in context of New Zealand Grid for integration of Wind Energy Conversion Systems
- Case study on Black out and restoration process for various blackouts reported across the globe
- Insight into the challenges in restoration/resynchronization process with high penetration of renewables



Introduction of the tutorial session by Prof. Nirmal Nair



Discussion on Profile of DER across the region in New Zealand context



Group Photo of Prof. Nirmal Nair with delegates across Gujarat