



QUALITY INFRASTRUCTURE FOR RENEWABLE ENERGY SOURCES & ENERGY EFFICIENCY
IN LATIN AMERICA AND THE CARIBBEAN

Concept and Program

Training on “On-Site Calibration Of Voltage Measurement Transformers And Current Measurement Transformers”

17 to 19 July 2016. NRC Labs, Ottawa, Canada.

Background

The Organization of American States OAS, the Sistema Interamericano de Metrología (SIM), the Comisión Panamericana de Normas Técnicas (COPANT), the InterAmerican Accreditation Cooperation (IAAC), and the Physikalisch-Technische Bundesanstalt (PTB), have agreed to cooperate in the regional project Quality Infrastructure for Energy Efficiency and Renewable Energy Sources in Latin American and the Caribbean. The objective is to strengthen the capabilities of the regional quality infrastructure organizations of SIM, COPANT and IAAC and of their national members in providing services for the fields of energy efficiency and renewable energy sources and to promote mutual coordination in order to support the implementation of the respective national energy policies.

The increasing integration of renewable energy sources to the energy grids demands a better supervision and control of the stability and flow of power in HV networks. This control requires reliable measurements at critical nodes of the grid in the high voltage and high current range. On site calibration of High Voltage (HVT) and High Current (HC) Transformers is necessary and critical to have good measurements.

During a technical seminar that took place in Montevideo, Uruguay during October 2014, the participating national institutes of metrology in SIM confirmed their need and interest in strengthening their technical competence in measuring methods to be able to provide on-site calibration of HV and HC Transformers. In that workshop, different aspects of calibration of high voltage transformers and high current transformers were presented. However, in situ calibration of such instruments is conceptually similar but the setting up of the measurement system is quite different. This is the reason why this new workshop is complementary of the first workshop.

Objective(s)

To provide the knowledge necessary to carry out on-site calibrations of HV and HC transformers.

Target Group

- Metrologists with the respective competence and mandate working in SIM institutes which have or are about to conclude the process of installing the necessary capacities and equipment to perform the on-site calibration of HV and HC transformers.
- Metrologists of SIM institutes which have the necessary ability to understand English.



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Expected Impact Energy sector, Transmission & Distribution agencies, Grids operators and users will benefit from support by SIM metrology institutes that have increased their competences in the on-site calibration on-site calibrations of HV and HC transformers.

Contribution to project goal (indicators) The activity will contribute to increase the number of high voltage and high current services from NMIs in the SIM region with leading technical capabilities.

Methodology

- Input lectures,
- plenary discussions,
- practical experience

Contents

1. Introduction to on-site calibration
 - Instruments used in the calibration
 - Setup of the on-site measurements
 - Health risks of the operators
 - Uncertainty of the measurement
2. INTI experience on HVT and HT calibration in situ
3. UTE experience on TV and CT calibration in situ
4. On-site calibration. Practical Experience

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Invited Experts Ing. José Luis Casais (INTI)
 Alejandro Santos (UTE)
 Dr. Harold Parks (NRC)

Implementing Partners SIM, PTB International Technical Cooperation.

Responsibilities and inputs of the implementing partners and/or target group

Implementing partners	Responsibilities and inputs:
SIM/Working Group	<ul style="list-style-type: none"> • Conceptual input • Coordinate selection of participants • Organization of the event
National NMIs	<ul style="list-style-type: none"> • Active participation • Provision of necessary information
PTB International Technical Cooperation	<ul style="list-style-type: none"> • Conceptual input • Financial support for the program (support for travel costs for participants from developing countries (hotel, travel costs for the technical experts)
Hosting Institution	<ul style="list-style-type: none"> • Technical experts, equipments for practical experiences,

Program

DAY	TIME	ACTIVITY
Sunday 17th	9:00 to 11:00	Introduction to on-site calibration Instruments used in the calibration Harold Parks (NRC)
	11:00 to 11:30	Coffe Break
	11:30 to 13:00	Setup of the on-site measurement Security conditions Dr. Harold Parks (NRC)
	13:00 to 14:00	Lunch
	14:00 to 17:00	Security conditions Uncertainty of the measurement Dr. Harold Parks (NRC)
Monday 18th	9:00 to 11:00	INTI experience on TV and CT calibration in situ (Part 1)



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		Ing. José Luis Casais (INTI)
	11:00 to 11:30	Coffe Break
	11:30 to 13:00	INTI experience on TV and CT calibration in situ (Part 2) Ing. José Luis Casais (INTI)
	13:00 to 14:00	Lunch
	14:00 to 17:00	UTE experience on TV and CT calibration in situ Alejandro Santos (UTE)
Tuesday 19th	9:00 to 12:00	On-site calibration Dr. Harold Parks (NRC)
	12:00 to 13:00	Lunch
	13:00 to 17:00	On-site calibration Dr. Harold Parks (NRC)