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## Skill based Development Program on Transformers

June 7-20, 2010  
Ahmadabad, Gujarat  
India

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**CENTAL INSTITUTE FOR RURAL ELECTRIFICATION (CIRE)  
(Organized in Association with IEEMA)**

**SCHEDULE OF CAPACITY BUILDING PROGRAMME ON TRANSFORMERS FOR  
AFGHAN TECHNICIANS**

<b>DATE</b>	<b>TIME</b>	<b>SCHEDULE</b>	<b>RESOURCE PERSON Details (S/Shri)</b>
07/06/2010	09.00 to 09.30	Registration and Time table distribution/discussion	
	09.30 to 10.30	<p style="text-align: center;"><u>Inauguration</u></p> <p><b>Welcome Address:</b> Mr.Ramesh Kode, Head of Institute, Central Institute of Rural Electrification (CIRE), Hyderabad</p> <p><b>Opening Remarks &amp; Inaugural Address:</b> Mr. Sudhir Vadehra, Senior Consultant, SARI/Energy, New Delhi</p> <p><b>Course Introduction and Overview:</b> Prof. V G Patel, Transformers &amp; Rectifiers Company, Ahmedabad and Mr. J Pande, Indian Electricals and Electronics Manufacturers' Association (IEEMA), New Delhi.</p> <p><b>Vote of Thanks:</b> Ms. Vinita Kathuria, Manager – Outreach &amp; Events, PA Consulting Group, New Delhi</p>	
	10.30 to 13.00	Class-room session: <b>Basics of Electricity and Safety</b> <ul style="list-style-type: none"> <li>➤ What is Electricity?</li> <li>➤ How it is generated?</li> <li>➤ Where it is stored?</li> <li>➤ Where it is used and how it is used?</li> <li>➤ Accidents, Electrical shocks, Electrical safety and house-keeping.</li> </ul>	Prof.V G Patel
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training
08/06/2010	09.00 to 11.00	Class-room session: <b>Fundamentals of Transformers</b> <ul style="list-style-type: none"> <li>➤ Invention of transformer and general information about transformer.</li> <li>➤ Usefulness and significance of transformer.</li> </ul>	Prof.V G Patel

		<ul style="list-style-type: none"> <li>➤ Important aspects of transformer manufacturing.</li> <li>➤ Specification of distribution transformers &amp; 33/11 KV Power Transformers</li> </ul>	
	11.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
09/06/2010	09.00 to 11.00	Class-room session: <b>Transformers Connections and Parallel Operation</b> <ul style="list-style-type: none"> <li>➤ Basic three phase transformer connections, parallel operation of transformers</li> <li>➤ Transformers losses and efficiency</li> <li>➤ Transformer fittings and accessories.</li> </ul>	Prof.V G Patel
	11.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
10/06/2010	09.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
11/06/2010	09.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on

			training schedule enclosed
12/06/2010	09.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
13/06/2010		<b>Field Visit</b>	
14/06/2010	09.00 to 11.00	Class-room session:  ❖ Evaluation of the participants by Quiz, multiple choice questions. ❖ Transformer fittings and accessories (Contd...)	Prof.V G Patel
	11.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
15/06/2010	09.00 to 11.00	Class-room session:  <b>Drying out of Transformers &amp; Transformer Oil Testing</b> ❖ Drying out of transformers ❖ Type of gasket materials, benefits and problems, schedule of when to replace. ❖ Testing of transformer oil: various kinds of equipment that can be used (portable field devices, laboratory devices, laboratory services that can be contracted for. ❖ Testing of transformer oil: Parameters need to be tested for (Dielectric, Water content, Acidity). ❖ Filtration techniques of the transformer oil.	Prof.V G Patel
	11.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed

	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
16/06/2010	09.00 to 11.00	Class-room session:  <b>Distribution Transformers - Erection, Commissioning and Associated Problems</b> ❖ Distribution transformer. ❖ Erection and associated problems with Distribution Transformers. ❖ 33/11KV Power Transformers - Salient features, erection and commissioning.	Prof.V G Patel
	11.00 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
17/06/2010	09.00 to 11.30	Class-room session: <b>Testing, Maintenance and Failure Analysis of Transformers</b> ❖ Tests on transformers. ❖ Transformer maintenance. ❖ Causes of troubles and failures in power transformers and preventive actions. ❖ Trouble Shooting.	Prof.V G Patel
	11.30 to 13.00	<b>Hands-on training as per the workshop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	<b>Hands-on training as per the work shop schedule for 5 groups.</b>	As per the hands on training schedule enclosed
18/06/2010	09.00 to 13.00	Visit to T & R 765 KV State of the Art Transformer manufacturing plant at Moraiya.	Prof.V G Patel
	13.00 to 13.45	Lunch break	
	13.45 to 17.00	❖ Few tens of questions and answers on transformers. ❖ Queries / doubts / questions / clarification	Prof.V G Patel

		required from audience.	
19/06/2010	08:00 to 11:00	<ul style="list-style-type: none"> <li>❖ Evaluation of the participants by Quiz, multiple choice questions.</li> <li>❖ Feed back and suggestions for betterment of programme.</li> <li>❖</li> </ul> <p style="text-align: center;"><b><u>Concluding Session</u></b></p> <p><b>Valedictory and Closing Remarks:</b> Mr. Sabyasachi Pattanaik, Sr. Technical Advisor-SARI/Energy, PA Consulting Group, New Delhi.</p> <p><b>Certificate Distribution:</b> Mr. Vinod Behari, ED (HR), REC, New Delhi</p> <p><b>Vote of Thanks:</b> Mr. G. Shanker, Chief Manager (Finance), CIRE, Hyderabad</p>	
	11.00 to 3.00	Travelling from Ahmadabad to Delhi	
	03.00 to 7.00	Travel from Delhi to Agra. On the way, power sector field equipment will be shown	
20/06/2010	10.00 to 14.00	Travel from Agra to Delhi. On the way, they will be shown field distribution equipment such as L.T., HT lines & Transformers	
21/06/2010	7.30 to 9.30	Interaction with the participants on the training programme	