



2019 - 2021 TRAININGS CATALOGUE

Nº	Code	Name of Course	General Objectives	Educational Objectives	Duration of Course (Days)	Target Personnel	Prerequisites	Minimum Participants	Maximum Participants
<b>3. TRANSMISSION</b>									
<b>30. STUDIES &amp; PLANNING</b>									
1	30001	Programmable Logic Controllers (Basic PLC)	Up skilling in Basic PLC Fundamentals	Familiarizing with : Machine / production lines application program, designed by Siemens step "7"	10	Instrumentation and Communication engineers	N	8	12
2	30002	Programmable Logic Controllers (Advanced PLC)	Up skilling in Advanced PLC Fundamentals	Familiarizing with : PLC maintenance PLC field connections	5	Instrumentation and Communication engineers	N	8	12
3	30003	Introduction to Transmission network system	To maintain install/existing transmission line	To understand and appreciate transmission network	10	Transmission engineers/technicians	N	5	30
4	30004	Transmission Lines design, Construction, Operation and Maintenance	Design and construct transmission lines understand the operation of Transmission Lines and carry out maintenance	Design Transmission lines considering relevant parameters Construct Transmission lines based on their design Maintain Transmission lines	10	Transmission lines maintenance system lines engr Transmission lines maintenance senior technicians Transmission line maintenance supervisors	-	10	30
5	30005	Introduction to Transmission network system	To maintain/install existing transmission line	To understand and appreciate transmission network	10	Transmission engr/technicians	•Power System Operations •Power System Communications	10	30
6	30006	Graduate Skills Development Programme	To gain fundamental skills necessary for the operation and maintenance of power systems (Generation, Transmission and Distribution)	To gain fundamental skills to operate and maintain power system (Generation, Transmission and Distribution)	12 months	elect or mech engr		10	30
7	30007	Technical Skills Acquisition Programme	To gain skills on a particular power system related trade (Cable jointing, Lines maintenance, Distribution substation operations, Electrical fitting & power system protection for technicians)	To gain skills on a particular power system related trade (Cable jointing, Lines maintenance, Distribution substation operations, Electrical fitting & power system protection for technicians)	6 months	power technicians		10	30
8	30008	Supervisory Control and Data acquisition (SCADA)	Exposure to remote operation of substation components	understand the functioning of SCADA system elements Understand the role of SCADA in enterprise management of assets.	10	System Operators and control room technicians		10	30
<b>31. CONSTRUCTION</b>									
9	31001	Emergency restoration system	To provide an opportunity for participants to gain relevant experience on application of an emergency restoration system tower technology in the electricity industry	Carry out planning and verification of ground integrity for emergency restoration tower installation Carry out installation and disassembly of modular emergency restoration system tower and relevant components	3	Line men, engineers, technicians	N	5	10
<b>32. OPERATION</b>									
10	32001	Basic power system protection	Design protection scheme for utilities	Understand the basics of protection scheme Set and coordinate relays Calculate fault level and determine appropriate switchgears	15	Protection and control engineers Protection senior technicians Power system engineers interested in protection	N	5	30
11	32002	High Voltage Regulations	To provide technical skills and best practice concepts and techniques of power system operations management	Perform switchings on 11KV and 33KV switchgear Apply safe operational procedures including safety rules and regulations	10	Suitably qualified personnel in distribution sy for operations and maintenancestems	N	5	10
12	32003	Advanced protection (Distance protection course)	To understand the distance protection principles and calibrate distance relays	To understand the distance protection principles and calibrate distance relays	10	Protection engineers	N	5	30
13	32004	System operations for Transmission substations	Operate transmission substations effectively	Understand basic power system and how it operates Operate power system substations efficiently with a focus on ma Operate safely at all times	10	Grid system operations engineers System operations senior technicians System operations supervisors	N	10	30
14	32005	Power System Operation and Automation	Operate, manage, coordinate and supervise operations of electrical apparatus in power system substations	operation of substation equipment and exposure to automatic operation of substation components and integration of substation automation systems	10	System Operators and control room technicians	N	10	30
15	32006	Power system communication	Understand and operate communication facilities	Understand communications channels, eg PLCC Use communication channels effectively	10	Power communication engr Power communication senior technicians	N	10	30



ASSOCIATION OF POWER UTILITIES OF AFRICA (APUA)  
AFRICAN NETWORK OF CENTERS OF EXCELLENCY (ANCEE)



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				Maintain communication facilities		Communication maintenance/supervision			
16	32007	Advance system operations for engns	To enable engineers operate power systems and manage load adequately	Refresher course for system operators	10	Senior system operators	N	10	30
17	32008	Basic Civil lines design and Project Management	prepare civil engineers with the required skill and knowledge for power industry professional challenges	civil engineering project management	10	civil engineers and construction personnel in the power industry	N	10	30
<b>33. MAINTENANCE</b>									
18	33001	System operations for Transmission substations	Operate transmission substations effectively	Understand basic power system and how it operates Operate power system substations efficiently maintaining Operate safely at all times	10	Grid system operations engineers System operations senior technicians System operations supervisors	N	5	30
19	33002	Maintenance of Transformer and switchgear	Maintain and operate power equipment	Operate and maintain a transformer safely Operate and maintain switchgears safely Design maintenance checklist and maintenance schedules	10	Power system maintenance engns Maintenance senior technicians Power system maintenance supervisors	N	5	30
20	33003	Transmission line maintenance	To provide course participants with theory and technical practice in order to help them comprehend the maintenance of a power plant	Diagnose and trouble shoot maintenance faults	65	Power plant maintenance and operations staff	N	5	15
21	33004	Construction and maintenance of Transmission lines	Design and construct transmission lines	Design Transmission lines considering relevant parameters Construct Transmission lines based on the design Maintain Transmission lines	10	Transmission lines maintenance engns	N	5	30
22	33005	Basic Power System Protection (PI)	Design protection scheme for utilities	Understand the basics of protection schemes Set and coordinate relays Calculate fault level and determine appropriate switchgears	15	Protection and control engineers Protection senior technicians Power system engineers interested in protection	N	10	30
23	33006	Advanced Power System Protection	This course is designed to provide a deeper understanding in Power System Protection and Control.	It gives in-depth exposure to Design Protection Schemes, calibration and coordination of protective relays, test and commissioning of electrical equipment. It is a follow up course to the Basic Power system protection course (PI).	15	Engineers & Technologists working in T&D	Basic Power System Protection (PI)	10	30
24	33007	Maintenance of Transformers and switchgear	Maintain and operate power equipment	Operate and maintain a transformer safely	10	Power system maintenance electrical engns	N	10	30