

DACUM Research Chart for Electrical Plant Maintenance Technician

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A	Perform preventive maintenance -Type A -Type B -Type C	A-1 Check electrical equipments visually (e.g. Motors, earthing system, battery etc.)	A-2 Clean electrical equipment (e.g. Motors, switchgear, panels etc.)	A-3 Fasten moving parts (e.g. Terminals, busbars, contactors etc.)	A-4 Check switches in test situation (e.g. High and low voltage switches etc.)	A-5 Test earth system (e.g. Clearing, fastening, measuring etc.)	A-6 Carry out start up (e.g. Motors, generators, UPS, transformers etc.)	A-7 Perform temperature test (e.g. Motors, transformer, contactors etc.)	A-8 Perform noise test (e.g. Rotating devices)	A-9 Carry out insulation test (e.g. All electrical equipments)	A-10 Measure resistance (e.g. Cabers winding, earthing etc.)	A-11 Comment on vibration test of rotating devices (e.g. Motors, generators etc.)		
B	Troubleshoot electrical system	B-1 Check the drawings	B-2 Prepare insulation tools and measuring equipments for troubleshooting	B-3 Check the wiring system	B-4 Prepare materials to be needed (e.g. Spare parts)	B-5 Change the materials failure	B-6 Start up the system after troubleshooting	B-7 Prepare report on fault finding						
C	Test the electrical equipments	C-1 Check the procedure of test	C-2 Repair the measuring tools (e.g. Megger, avometer etc.)	C-3 Identify the resource of the problems	C-4 Check the protection relays (e.g. Overload relay) (*this task can be performed by inspection Dept. in some company)	C-5 Test new electrical equipments (e.g. New relay)	C-6 Test stand by equipments (e.g. Incommer, motor etc.)	C-7 Prepare test report						
D	Perform electrical project	D-1 Review the project documents	D-2 Comment on the project documents (verbal, written)	D-3 Prepare the materials for the project to be performed	D-4 Prepare daily time-schedule for the project	D-5 Determine the manpower needed for the project (including main-hour)	D-6 Illustrate the panels and electrical equipments	D-7 Supervise the work done by contractors in terms of project	D-8 Check the logic diagrams of the project	D-9 Carry out precommissioning of the project with related groups (e.g. Maintenance, Process Groups etc.)	D-10 Start up project	D-11 Obtain the project confirmation from Engineering Dept.		
E	Overhaul electrical equipments	E-1 Obtain the scheduled work program from Planning Dept. (including time schedule)	E-2 Determine manpower needed for overhaul (including individual etc.)	E-3 Prepare tools and materials for overhaul (e.g. Spare parts etc.)	E-4 Provide emergency power supply (e.g. diesel generator)	E-5 Provide general cleaning for all equipments	E-6 Check electrical equipment visually	E-7 Repair damaged equipments	E-8 Replace damaged equipments (e.g. Conductor, signal lamps etc.)	E-9 Fasten the moving parts	E-10 Check all interlock systems (e.g. Between high and low voltage)	E-11 Supervise the work done by contractors in terms of overhaul	E-12 Start up sequence of systems	E-13 Carry out restarted projects
F	Perform safety work	F-1 Explain safety rules to subordinates (By meeting, individual etc.)	F-2 Explain environmental rules to subordinates (e.g. By meeting, individual etc.)	F-3 Participate fire-fighting maneuver organized by Safety Department	F-4 Identify dangerous works	F-5 Place safety signs	F-6 Check safety tools for electrical works (e.g. Plugs, cutters, screw-drivers etc.)	F-7 Supervise the subordinates in terms of observing the rules of safety, procedures and cleanliness of work environment)	F-8 Ensure the usage of required personal safety tools (by rules and standards)	F-9 Get acquainted with first-aids (e.g. Participate in meetings, study on documents etc.)				
G	Continue further training	G-1 Study on technical documents (e.g. Books, catalogues etc.)	G-2 Identify training needs (for themselves and for subordinates)	G-3 Train subordinates and operational workers	G-4 Participate in seminars, courses, workshops etc.	G-5 Propose training themselves and subordinates	G-6 Get acquainted with management systems (e.g. Quality, safety, environment etc.)	G-7 Comment on training time schedule prepared by Training Department						
H	Organize work	H-1 Assign works to subordinates	H-2 Obtain work orders/work permits	H-3 Check personnel presence/absence	H-4 Comment on promotion/pushment of personnel	H-5 Write reports (administrative, accident etc.)	H-6 Confirm purchasing of materials	H-7 Contact with other departments (e.g. Engineering, Procurement, Warehouse, other maintenance groups etc.)	H-8 Coordinate between foreman and workers	H-9 Deal with personnel problems	H-10 Prepare holiday schedule of personnel (*)- in some company, technician only comments on	H-11 Comment on performance of subordinates (appraisal form)		

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Worker Behaviours		General Knowledge and Skills
<ul style="list-style-type: none"> • Creativity • Patience • Responsibility • Discipline • Flexibility • Team player • Open minded • Accept criticism • Punctuality • Self reliance • Positive thinking • Technical oriented • Save consciousness • Dependant • Confidentiality 		<ul style="list-style-type: none"> • Knowledge of safety rules • Knowledge of quality rules • Knowledge of environmental rules • Knowledge of electrics • Knowledge of standards in electrics • Mathematics • Technological development (tools, equipments, methods, materials etc.) • Knowledge of first-aids • Knowledge of professional terminology • English language • Computer, Internet • Dealing with unexpected events • Communication skills • Planning skills • Organizing skills • Team work skills • Learning skills • Supervising skills • Drawing skills • Teaching skills • Problem solving skills • Report writing skills
Tools & Equipment		Future Trends / Concerns
<ul style="list-style-type: none"> • A.v.o-meter • Megger • Pressure tester • Earth tester • Phase meter • Phase rotation • Bridge tester • Clamp ammeter • Thermometer • Tachometer • Torque wrench • Frequency meter • P.f. meter • Injection current tester • Fault finding cable • Oscilloscope • Terminal press • Heat gun • Sound scope • Bender 	<ul style="list-style-type: none"> • Hole saw • Fuse puller • Winding machine • High voltage phase meter • Grease pump • Winch machine • Oil dielectric tester • Oil circulation machine • Hydro meter • Rotor tester • Tool box • Soldering gun • Hilti drill • Hilti gun • Humidity meter • Portable torch • L.C.R tester • Bearing puller • Bearing heater • Cad weld 	<ul style="list-style-type: none"> • Privatisation (downsizing) • Low salary • Lack of spare parts for old technologies • Computer/Internet are in high priority • Competition in terms of quality and price • Lack of motivation for subordinates • Overseas training needed (further training) • Increase of technical ability (company) • Limitation of technician promotion grades • Automation • Replacing modern management with traditional management • Updating manuals/catalogues needed