

DACUM Research Chart for Electrical Maintenance Engineer

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Tasks

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	1	2	3	4	5	6	7	8	9	10
Ensure work safety	Review equipment documents for safety	Check work environment for safety work	Explain work permit to subordinates	Ensure usage of tools and personal safety equipment	Inform subordinates about work safety	Contact with fire department for warm work	Ensure power disconnected			
Troubleshoot electrical systems	Review technical documents for fault finding	Explain the work order to technicians	Identify measurement equipment	Test equipment for fault finding	Contact with other departments for service in their own fields	Contact with vendors for further technical assistance	Determine the damaged parts to be repaired/replaced	Request materials for the work to be done	Deliver finished work to operation department	Prepare final reports on troubleshooting
Test electrical equipment	Review technical documents of equipment to be tested	Prepare testing equipment	Test equipment according to procedures	Record measured data	Compare test result with reference	Repair measuring and protection equipment	Adjust measuring and protection equipment			
Organise spare parts and materials	Check spare parts list for missing items	Prepare proposal form for spare parts	Determine minimum/maximum of spare parts	Issue direct purchase orders	Confirm the vendors quotation for spare parts	Report on production of material equipment (facilities etc.)	Participate in committee (e.g. self sufficient committee)			
Overhaul electrical systems and equipment	Review overhaul program (e.g. Pre-Overhaul Program)	Review data sheets of equipment	Estimate manpower and materials	Request materials for overhaul	Contact with other departments for services	Assign work according to work orders	Supervise work progress	Participate in daily meeting	Prepare final reports for overhaul	
Perform electrical projects	Review project documents (commenting, planning)	Estimate material, time and manpower needed	Explain the work to be done to technician	Check the materials received through technical services	Inform technical service unit for supervising	Coordinate with other departments (getting permission, welding etc.)	Draw "as-built" draft to be send to technical service department for revision	Inform Head of Dept. for finishing of project (getting approval)	Power-on system under supervision	
Supervise Contractor's work	Review the daily reports of contractors	Confirm the required materials by contractors	Evaluate the performance of contractors based on work orders and Quality System	Identify the incomplete parts of contractors work (including mistakes)	Inform the contractor on the performance of personnel (through Head of Dept.)	Participate in meeting with contractor	Cross-check the monthly report against work performed for payment			
Manage Personnel Affairs	Review reports of technician and workers	Arrange for rest of personnel	Solve personal problems of personnel (e.g. behaviour)	Write reports about personnel to department	Arrange for overtime work	Propose for promotion or punishment	Comment on appraisal form of subordinates	Report about accidents of personnel	Nominate personnel for work in other departments, plants etc.	
Continue further Training	Identify the personnel for training courses	Comment on training courses	Train subordinates in cooperation with Training Center	Study on books, catalogs, journals etc.	Participate in training seminars/courses	Assist Training department for Development of translation of catalog)	Visit companies, fairs (for further education)			
Ensure management systems (quality, environment, safety etc.)	Explain quality systems to subordinates (quality, environment, safety)	Assist preparation of procedures (quality environment etc.)	Check the work and work process against quality procedures	Comment on procedures/instructions for changes corrections etc.	Participate in committees (quality environment, safety)	Prepare for auditing (check documents, organize staff meetings etc.)				

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Worker Behaviours	General Knowledge and Skills	
<ul style="list-style-type: none"> • Clever • Safety conscious • Organized • Patient • Self control • Team player • Open minded • Technical oriented • Flexible • Logical • Creative • Reliable • Effective communicator • Methodical • Trustworthy • Hardworking • Serious • Honest • Good manners • Quality conscious 	<ul style="list-style-type: none"> • English • Planning • Knowledge of PLS • Communication skills • Computer office programmes (eg. word, excel) • Electrical standards rules • Hazardous area classification • Generation protection • Industrial power electronics • Electrical software • Inverter, UPS • Electrical safety regulation • Variable-speed drive system • High voltage systems • Electrical insulation materials • Report writing • Decision making • Transformer • Earthing system • Energy saving • Control of personnel 	<ul style="list-style-type: none"> • Test protection devices • Supervising skills • Short circuit calculation • Condition monitoring • High voltage engineering • Knowledge of innovation • Drawing skills • Problem solving • Electrical distribution system • Electro magnetic • Measurement equipment • Motors • Communication skills • Management skills • Industrial psychology • Battery system • Team working • Internet • Time management • Hard working • Open minded • Mathematic • Knowledge of transfer • Organizational talent
Tools & Equipment		Future Trends/ Concerns
<ul style="list-style-type: none"> • Insulation tester • Earth tester • Sequenced phase indicator • Oil breakdown tester • High pressure tester • Multimeter • Relay tester • Winding machine • Oven • Injection current equipment • Power supply equipment • Cable fault locator • Thermometer • Vibrometer • LCR meter • Computer 	<ul style="list-style-type: none"> • Calculator • Humidity meter • Tachometer • Chronometer • High voltage phase meter • Bearing heater • Lux meter • Load bank • Toolbox • Tool box for battery test • Impedance battery tester • Variable voltage transformer(3- and 1- phase) • Micrometer • Loss insulation tester • Oil moisture meter • Oil treatment machine 	<ul style="list-style-type: none"> • Learn to use of new control systems (by software, hardware etc.) • Downsizing companies (privatisation) • More computer skills needed • Development of new plants • Lack of spare parts (for old technology) • Increase of use of conditionnel monitoring system • More further training is needed • Needs for more qualified and skilled personnels • New technology, new equipments in use • New software programmes in use • More possibilities to visit other contries to learn new technology