

Qualification File

Revised Application Documentation: Version 3 Final /4 March, 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Deputy Director General (Apprenticeship Training)
Government of India,
Ministry of Skill Development and Entrepreneurship
Shram Shakti Bhavan, Rafi Marg
New Delhi-110001

NSDA Reference

To be added by NSDA

*** Note: The training and Apprenticeship verticals of Directorate General of Employment & Training (DGE&T) Ministry of Labour & Employment, has been transferred to the Ministry of Skill Development and Entrepreneurship as per the recent Government order.**

Name and contact details of individual dealing with the submission

Name: Dr. T. C. Saravanabava
Position in the organisation Deputy Director General (AT)
Address if different from above

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List of documents submitted in support of the Qualifications File

1. Competency-based curriculum (Annexure 1)

SUMMARY

Qualification Type	National Certificate in Modular Employable Skills																																				
Qualification Title	ELECTRICIAN INDUSTRIAL (INDUSTRIAL ELECTRICAL SECTOR) under Skill Development Initiative Scheme (SDIS) in Modular Employable Skills (MES) format																																				
Classification code	Blank																																				
Body/bodies which will assess candidates	National Council for Vocational Training (NCVT)																																				
Body/bodies which will award the certificate for the qualification	National Council for Vocational Training (NCVT)																																				
Body which will accredit providers to offer the qualification	National Council for Vocational Training (NCVT)																																				
Legal and/or other basis of the qualification	NCO/ NOS/ Industry consultation i) NCO-2004: 7137.10 ii) NCO-2004: 7137.20																																				
Occupation(s) to which the qualification gives access	Industrial wiring & its concepts Control panel wiring concept Industrial motor and controls Transformer connection and its concept DG set and accessories																																				
Proposed level of the qualification in the NSQF.	Level 3																																				
Notional Learning Hours	<p>Electrician Industrial will be able to identify wires, cables, perform cable jointing & do cable connections, able to operate motors, transformers & their controls, able to operate & maintain diesel generator set, maintains storage batteries, able to perform industrial wiring & control panel wiring & trouble shoot the circuits, able to plan & install pipe earthing, plate earthing & test them.</p> <p>Training is covered in 04 semesters, each with 26 weeks of duration.</p> <p>Time distribution amongst the components/ subjects is as under:</p> <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Broad Practical components to be covered</th> <th>Duration (in Hrs)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>OSH & Safety Practices</td> <td>10</td> </tr> <tr> <td>2.</td> <td>Personnel & Material Safety</td> <td>10</td> </tr> <tr> <td>3.</td> <td>IntrodSuction to Electricity and Basic tool & accessories</td> <td>80</td> </tr> <tr> <td>4.</td> <td>Symbols, diagrams & Rules</td> <td>40</td> </tr> <tr> <td>5.</td> <td>Earthing</td> <td>40</td> </tr> <tr> <td>6.</td> <td>Industrial wiring & its concepts</td> <td>120</td> </tr> <tr> <td>7.</td> <td>Control panel wiring concept</td> <td>100</td> </tr> <tr> <td>8.</td> <td>Industrial motor and controls</td> <td>100</td> </tr> <tr> <td>9</td> <td>Transformer connection and its concept</td> <td>100</td> </tr> <tr> <td>10</td> <td>DG set and accessories</td> <td>100</td> </tr> <tr> <td>11</td> <td>Soft & Entrepreneurship Skill</td> <td>100</td> </tr> </tbody> </table> <p><i>Note: Total notional hours is not exact multiple of a number of semesters</i></p>	Sl. No.	Broad Practical components to be covered	Duration (in Hrs)	1.	OSH & Safety Practices	10	2.	Personnel & Material Safety	10	3.	IntrodSuction to Electricity and Basic tool & accessories	80	4.	Symbols, diagrams & Rules	40	5.	Earthing	40	6.	Industrial wiring & its concepts	120	7.	Control panel wiring concept	100	8.	Industrial motor and controls	100	9	Transformer connection and its concept	100	10	DG set and accessories	100	11	Soft & Entrepreneurship Skill	100
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Entry requirements/ recommendations.	Passed 8 th Class + 14 years of age																																				
Progression from the qualification.	<ol style="list-style-type: none"> The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher. This qualification shall enable the trainee to find employment as a skilled worker. 																																				
Planned arrangements for RPL.	<ul style="list-style-type: none"> Testing centres are registered by States on the same line as 																																				

	<p>for VTPs. Candidates desire to get the skills certified have to apply on line or through Testing Centres. Assessing Bodies /assessors will be allotted automatically by the IT application. This facility is being provided on the web-portal of SDI scheme. Until then following procedure will be adopted for direct assessment:</p> <ul style="list-style-type: none"> • Assessing Bodies are responsible for registration of candidates for testing. It may do so directly or through its designated centres or VTPs. • Candidates are allowed to get registered themselves either directly on the portal or through Testing Centre concerned. • Assessing Bodies apply online list of candidates to be assessed to respective RDAT who, in turn, acknowledge the same by allotting ABN. RDAT make schedule of trade test, including date, time, list of candidates and location of designated Testing Centre under intimation to AB. • AB inform in advance about the courses, candidates list, and requirement of raw material to Testing Centre in advance. • ABs are responsible for preparation of question papers both for theory and practical test based on the approved criteria etc. 		
<p>International comparability where known.</p>	<p>1. Existence of any official document suggesting the comparability of the qualification with the qualifications in other countries is not known.</p>		
<p>Formal structure of the qualification</p>			
<p>Title of unit or other component: Electrician</p>	<p>Mandatory/ Optional</p>	<p>Estimated size (learning hours)</p>	<p>Level</p>
<p>Practical</p>	<p>Mandatory</p>	<p>600</p>	<p>3</p>
<p>Soft & Entrepreneurship Skills</p>	<p>Mandatory</p>	<p>100</p>	<p>3</p>

Please attach any document giving further detail about the structure of the qualification – e.g., a Curriculum or Qualification Pack.

Give details of the document here:

Competency-based curriculum (Annexure 1)

ASSESSMENT

Electrical Winder/Unit/Component: Details are attached. (Annexure 3)

Name of assessment body:

DGET empanelled Assessing Bodies (ABs)

If there will be more than one assessment body for this qualification, give details.

Refer Appendix I.

Criteria for selection of Assessment body

Minimum Eligibility Criteria

- The applicant shall be a legal entity, registered in India.
- The applicant should have in last two years carried out competency / skill assessment for minimum 1000 persons or should have trained minimum 1000 persons and got tested by some agencies such as NCVT, Sector Skill Council, State, board/ council and reputed industry Association. Organizations having experience in testing of competencies would be preferred.
- In case more number of applications is received, preference will be given to those organizations that have trained/assessed larger number of persons.
- The applicant is not a Vocational Training Provider in the same sector and in same State in SDI scheme but it can be VTP in other States, other Sectors or other scheme.
- The applicant shall have access to technically qualified personnel of repute and integrity in different industrial trades and technology.
- The applicant shall develop dedicated human resource for handling the processes in SDIS assessment process.
- The applicant shall declare its linkages with other organization(s), if any to ensure independence and avoid any conflict of interest.
- Institutions/ Firms blacklisted by any Government Department shall not be considered in this RFP.
- The Applicant shall provide the information and supporting documents towards their claims.
- Initially provisional empanelment will be awarded to the organizations based on the evaluation of eligibility of the Assessing Body based on the criteria.
- Based on the module and sector that will be handled by the assessor, the assessing body shall send its assessor for competency evaluation in the institutions which will be notified by DGE&T time to time. The assessor will be assessed to ascertain the competency to carry out competency based assessment under SDIS.
- Final empanelment would be granted subject to the Assessing Body fulfilling the following conditions of getting the competencies of 2 assessors of each module per State evaluated in the institutes notified by the DGE&T. Testing charges for evaluating the competencies of the assessors will be borne by the Assessing Bodies.

Will the assessment body be responsible for all assessments and for all candidates?

Yes. The assessing body is responsible for all assessments and for all candidates.

Explain how assessment for the qualification will be carried out and quality assured to achieve consistency.

(1) Assessment process:

The assessment process under SDI Scheme aims to test and certify the competency of the persons through Assessing Bodies who seek certification of their skills acquired informally or the persons who have been trained at the registered VTPs. The competency assessment of the candidate is being done the Assessor Competency Evaluation (ACE) qualified assessor of the independent Assessing Bodies (AB) which is not involved in training delivery, to ensure an impartial assessment. In the assessment process of SDIS, identification of competency, ways to measure the competency and deciding on the type of evidence that has to be collected are the responsibility of the Assessing bodies whereas administering the assessment and collecting the evidence and reporting the results are the responsibility of the assessors. The assessment process consists of following components:

Theory Test:

- It must assess the knowledge which is essential for a person to do the job. Without this knowledge, the person cannot be able to do the job.
- The questions shall be normally of objective type involving selection of correct response rather than writing sentences.
- The question paper should contain sketches/ diagrams/ photographs/ drawing to overcome the problems of reading comprehension.
- The test shall be of short duration.

Practical Test: It shall be able to test

- Manipulative skills to handle tools and equipment.
- Speed in doing work.
- Accuracy maintained
- Quality in workmanship.
- Sequence of performance.
- Economical use of material.
- Neatness & housekeeping.
- All the competencies prescribed in the course curriculum.

The Assessment Parameters adopted during assessment:

- Knowledge of equipment, limitation of use of tools and equipment, and methods & procedure.
- Understanding of functioning of equipment & tool, criteria to be used in selecting tools for given job, and the process of measurement.
- Skill in finishing to required measurement, handling measurement & calculations, handling tools and equipment with ease, finishing neatly.
- Abilities to take corrective steps, use correct work habits, take measurements, complete the job within stipulated time, and adopt safe practices.
- Attitude towards the work, accurate & precise work and co-workers and supervisor.

(2) Duration of Test:

The duration of test vary according to the task. Theory test shall of 1 hour duration and practical test for engineering trade shall be 6 to 8 hours minimum and non-engineering it shall be of 4 hours minimum. Assessing Bodies while preparing practical test shall ensure that candidate shall be tested on all the competencies prescribed in the course module.

The marking pattern and distribution of marks for the qualification are as under:

Terminal competency	Maximum marks
Application of knowledge	30
Care for tools & equipment	15
Economic use of materials	15
Safety consciousness	10
Speed	10
Accuracy	15
Quality of workmanship	20
Amount of work	15
No. of attempts	10
Attitude	10
Total maximum marks for Practical	150
Maximum marks for theory	50

(3) **Minimum pass mark:**

Minimum passing marks for Practical is 60%

Minimum pass marks for theory is 40%

(4) **Testing and certifications process for the course:**

Pre- Assessment

- RDAT allot batches to the Assessing Bodies on rotational basis depending on the presence of assessing body in that region sector wise and the assessing body in coordination with VTP and assessor should confirm and schedule the assessment.
- The Assessing Body confirm the date of assessment in consultation with VTP and communicate to the RDAT/State.
- The Assessing Body forms a panel of ACE qualified assessors of high repute and integrity SDIS sector wise and location wise.
- The assessment of the candidates is done by the Assessing Bodies in designated Testing Centre (TC). The Testing Centre where the assessment is carried out and Testing Centre can be VTP also. The Assessing Body select the TC based on the location, accessibility and the infrastructure facilities available for conducting the test.
- The Assessing Body provide details of selected TC along with skill areas in which assessment can be done at the TC, to the RDAT and respective States/UTs.
- The Assessing Bodies depute ACE qualified assessors for assessments whose details are furnished by Assessing Bodies to DGE&T in advance.
- Assessing Body has to communicate to the Testing Centre following:
 - Details of the candidates to appear for assessment in various MES courses.
 - Details of Assessors selected with their contact details.
 - Requirement of infrastructure, raw material etc.
 - Testing charges to be reimbursed to Testing Centre

Preparation of assessment tools and prerequisites:

- The assessment tools contain components for testing the knowledge, application of knowledge and demonstration of skill. The knowledge test is objective paper based test or short structured questions based. The application of knowledge is verified based on questioning or seeking response for a case. Demonstration of skill is verified based on practical demonstration by the candidate by using competency checklist.
- The type of assessment tools to be used for assessment are to be prepared in advance by the assessing body in accordance to the guidelines as prescribed below:
 - Define the performance objective – This is based on the course objectives and competency in workplace as prescribed by MES curriculum. The written tests and practical tests assess all the competencies mentioned in course curriculum.
 - In case of practical test, the operations which are to be observed in case of process test (how a particular task is being carried out) are clearly mentioned and the specifications of the final product in case of product test (the task in itself).
 - List of tools, infrastructure, and equipment to carry out the assessment are prepared based on the test instruments that are planned to be used.
 - Written directions are given to the candidates before the task is attempted.
 - Scoring system, observational checklist and rating scale is prepared for each competency which is going to be assessed.
 - The checklist and rating scale have sufficient space to record observations.

Pre-assessment activities for Assessor at the Testing Centre

- Verification of student credentials: The assessor check the application form submitted by the candidates and verify the photo pasted on the forms with candidates who are taking assessment in accordance with checklist at [Annexure1](#).
- Verification of testing centre for adequate infrastructure, tools and equipment: The assessor verifies the availability of infrastructure, tools and equipment for carrying out both theory and practical assessments. The minimum requirement prescribed under the MES modules is used as benchmark.
- Verification of qualification of instructor: The assessor verifies the qualification and experience of the instructors in the training centre
- Attendance verification: The assessor checks the attendance register of candidates and instructors until the time biometric attendance system is put in place. Once the biometric attendance system is in place, the biometric attendance of assessors along with that of trainees/candidates has to be captured during the assessment at the start as well as end of theory and practical test.
- Attendance during assessment: The assessor takes the attendance of all the students who

appear for assessment after the successful verification of the student credentials and before the start of the assessment. The assessor also provides his/her attendance during start and end of the practical and theory test.

- Pre-Assessment checklist: The assessor fill the pre-assessment checklist along with the start time and end time of assessment after verifying all the above tasks as per checklist at Annexure2.
- Verification of the documents related test carried out by VTP/ Testing Centre (TC) for candidates who were not able to produce document in support of having passed the qualification.

Assessment activities

- Before the start of assessment, read out the instructions to the students.
- The written test & practical test is for fixed duration as prescribed.
- It is ensured that individual attention is given to all the candidates during the practical test.
- The assessor takes photographs during the assessment process of all the students in the testing centre, the students during theory and practical tests, practical lab/workshop showing the equipment to be used for assessment, the assessor along with the students appearing for the assessment.

Post-assessment activities

- The assessor consolidates all the theory and practical test papers and ensures that all the mandatory information is filled. The total score for each student should be calculated and recorded in Result sheet as given in Annexure.3.
- The assessor send the attendance sheet, Result sheet, answer papers by courier/post to the assessing body immediately after the completion of assessment
- Uploading outcome of the assessment and photos in portal by assessing body
- Assessing body upload the results within one week of the assessment date.
- Photos taken by the assessors during assessment are sent to respective RDATs through e-mail only. Non dispatch of photos of assessment to RDAT makes assessment void. Re-assessment of such batch is done by the Assessing Bodies on their own expenses.
- Details of assessors as per Annexure.4 are emailed to RDAT at the time of uploading the outcome of the assessment. Outcome of the assessment is not accepted in case details of assessors are not emailed to respective RDAT. This procedure is applicable till automatic selection of assessors is provided on the web-portal of SDIS.
- Maintaining assessment records
- Publishing of results and Certificate issue
- RDAT verifies the outcome of the assessment, details of assessors, photos and print and sign the certificates for successful candidates and send it to the respective candidates. In case of direct candidate's assessment, the Certificates are sent to the Assessing Body.
- Certificates which will be issued carry photograph of the trainee, name of VTP, start date & end date of training and duration of training once the systems for the same are put in place.
- The certificate is issues under the aegis of NCVT.

Will the assessment body be responsible for RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

Direct Assessment:

- Testing centres are registered by States on the same line as for VTPs. Candidates desire to get the skills certified have to apply on line or through Testing Centres. Assessing Bodies /assessors will be allotted automatically by the IT application. This facility is being provided on the web-portal of SDI scheme. Until then following procedure will be adopted for direct assessment:
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- Assessing Bodies apply online list of candidates to be assessed to respective RDAT who, in turn, acknowledge the same by allotting ABN. RDAT make schedule of trade test, including date, time, list of candidates and location of designated Testing Centre under intimation to AB.
- AB inform in advance about the courses, candidates list, and requirement of raw material to Testing Centre in advance.
- ABs are responsible for preparation of question papers both for theory and practical test based on the approved criteria etc.

ASSESSABLE OUTCOME WITH ASSESSMENT CRITERIA

ASSESSABLE OUTCOME ALONGWITH ASSESSMENT CRITERIA TO BE ACHIEVED AFTER EACH SEMESTER & COMPLETION OF QUALIFICATION

- i) The training shall be conducted as per syllabus defined in reference no: Section 10.
- ii) The trainee shall demonstrate the competencies which are defined below in assessable outcome and assessment criteria.
- iii) All the assessable outcomes are to be tested during formative assessment, various observation and viva-voce.
- iv) Assessable outcome of Soft skills & entrepreneurship shall be tested separately and also be applied in Theory and Practical examinations.
- v) These assessable outcomes and assessment criteria will serve as guide lines for Trainers and Assessors.

GENERIC ASSESSABLE OUTCOME:

ASSESSABLE OUTCOMES	ASSESSMENT CRITERIA
1. Recognize & comply safe working practices, environment aspect and housekeeping.	1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	1.2 Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures.
	1.3 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly according to site accident/injury procedures.
	1.4 Identify Personal Protective Equipment (PPE) and use the same as per related working environment.
	1.5 Identify basic first aid and use them under different circumstances.
	1.6 Take opportunities to use energy and materials in an environmentally friendly manner
	1.7 Avoid waste and dispose waste as per procedure
	1.8 Recognize different components of 5S and apply the same in the working environment.
2. Understand and practice soft skills, working with Computer and communicate with required clarity.	2.1 Recognize & practice soft skills in day to day work.
	2.2 Conduct appropriate discussions with within the team and report to higher authority.
	2.3 Present facts and circumstances and use appropriate terminology related to work.
	2.4 Conduct written communication.
	2.5 Use computers and access internet for day to day activity
3. Demonstrate knowledge of concept and principles of basic arithmetic calculation, co-ordinate system and apply knowledge of specific area to perform practical operations.	3.1 Apply basic arithmetic calculations for arriving dimensional parameters as per drawing.
	3.2 Use co-ordinate system for part programming.
4. Explain time management, entrepreneurship and manage/organize related task in day to day work for personal & social growth.	4.1 Ascertain appropriate time for the assigned task.
	4.2 Execute the assigned task within time frame.
	4.3 Manage own work within specified time.

	4.4 Explain importance & factors affect the development Of entrepreneurship.
	4.5 Identify service providers for developing entrepreneur/business establishment.

SPECIFIC ASSESSABLE OUTCOME:

ASSESSABLE OUTCOMES	ASSESSMENT CRITERIA
5. Draw, estimate & wire-up different types of industrial wiring. Test industrial wiring installation using meggar.	5.1 Measure Current, Voltage and Resistance of Single Phase and Three phase load.
	5.2 Verify the characteristics of series, parallel and its combination circuits.
	5.3 Identify the phase, neutral and earth in single and three phase supply.
6. Plan & install pipe & plate earthing. Measure earth resistance by earth tester	6.1 Install the pipe earthing and test it.
	6.2 Install the plate earthing and test it.
	6.3 Measure the earth electrode resistance using earth tester.
	6.4 Carry out improvement of Earth Resistance
7. Select, assemble, wire-up & test control panel for 3 phase AC motor.	7.1 Make straight twist, married and T (Tee) joint in standard conductors.
	7.2 Glanding and crimping of cables
	7.3 Trouble shoot of industrial wiring
	7.4 Demonstrate Control panel Assembly of various accessories
	7.4 Demonstrate control panel wiring
8. Explain and apply the types, constructional features, working principle of transformer. Test & maintenance of transformer.	8.1 Demonstrate connections for Direct-on-line (DOL) & Remote control of 3 phase Induction motor.
	8.2 Demonstrate Forward/Reverse starter & Star/Delta starter connections
	8.3 Connect, Start & Run 3phase slip ring induction motor
	8.4 Control 3 phase Induction motor using Drive & measure the speed
	8.5 Identify the terminals of transformer & find out polarity
	8.6 Connect & test 3 phase transformer in a given load
	8.7 Test the transformer oil with Oil testing kit
9. Operate DG set and its controls	9.1 Check the conditions for starting the DG set – check lubricant, coolant, etc
	9.2 Start , Run & load the DG set
	9.3 Identify the parts of Lead acid battery & test for its condition
	9.4 Practice on charging of Lead acid battery & test it.

**QUALIFICATION FILE SECTION 3
EVIDENCE OF NEED**

What evidence is there that the qualification is needed?

Skill Development Initiative on Modular Employable Skill (MES) has been developed in close consultancy with Industry, State Governments & Experts in pursuance of excellence in vocational training. MES is 'Minimum Skill Set' which is sufficient to get an employment in the world of work. MES allows skills up gradation/formation, multi entry and exist, vertical and horizontal mobility and lifelong learning opportunities in a flexible manner and allows recognition of prior learning.

What is the estimated uptake of this qualification and what is the basis of this estimate?**What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?**

The qualification is originally designed and approved by NCVT for the Modular Employable Scheme. NCVT has been entrusted with the responsibilities of prescribing standards and curricula for Skill Development Initiative Scheme (SDIS) in Modular Employable Skills (MES) format, advising the Government of India on the overall policy and programmes, conducting All India Trade Tests and awarding National Trade Certificates.

In the research and/or development, what steps were taken to identify potential barriers to access (eg related to education, race, caste, religion, gender or disability) and eliminate or overcome these?

There is no barrier imposed in taking up this training programme on the basis of race, caste, religion, gender or disability, except for the visually-impaired.

Has the qualification been through a formal approval procedure(s)?

(If so, explain the process and the outcome.)

1. The qualification was prepared by a core group having experts from Industry, DGET institutes, and ITIs.
2. It was approved by Mentor Council having representatives from Industry, Academic institutions and skill experts.
3. The qualification has been approved by the sub-committee of NCVT dealing with norms and courses.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

- In a recent initiative, a Mentor Council (MC) for the Power sector has been formed to review the curriculum of this qualification under the sector.
- CSTARI, the research wing of DGE&T, reviews and updates the qualification, in consultation with industries and other stakeholders, on a regular basis.
- NOS approved by NSDA will also be referred to from time to time.

What arrangements are in place to inform people about the qualification(s) and the advantages it offers?

- Central and State Governments & Private institutions issue notifications for admission to the qualification in print & e-media from time to time.
- State, Regional & National level skill competitions are organized on a regular basis to promote the qualification.
- Recently, under a new initiative, a 12 episode TV serial entitled as '*Hunnarbaaz*' has been telecast on National Channel & the same is available in YouTube.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here: Advertisements calling for employment. (Annexure 4)

Level of qualification:

NSQF Level 3

Summary of Direct Evidence (from learning outcomes):

The evidence of the competence obtained by:

- Conducting theory examinations,
- Conducting practical examinations,
- observing the trainees at work,
- asking questions and initiating formative discussions to assess understanding, and
- evaluating records and reports.

Summary of other evidence (if used): Nil

QUALIFICATION FILE SECTION 4, EVIDENCE OF LEVEL (Continued)

LEVELLING SCORECARD

Learning outcome	Comment	Level-2	Level-3	Level-4
GENERIC OUTCOME				
1. Recognize & comply safe working practices, environment regulation and housekeeping	Trainees will acquire knowledge of the safe working practices, environment and housekeeping and will be responsible for implementation in his own work.		✓	
2. Understand and practice soft skills, OSH&E, working with Computer and communicate with required clarity.	Trainee will be able to communicate written or oral with minimum required clarity and practice in day to day work.		✓	
3. Demonstrate knowledge of concept and principles of basic arithmetic calculation and apply knowledge of specific area to perform practical operations.	Trainee will be able to do basic mathematical calculations viz., arithmetic and apply in practical applications.		✓	
4. Explain time management, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.	i) Trainees will have understanding of factual knowledge of time management, entrepreneurship. ii) The trainees will have understanding to manage personal finance and further growth to be an entrepreneur.		✓	
SPCIFIC OUTCOME				
5. Draw estimate & wire-up different types of industrial wiring. Test industrial wiring installation using meggar.	Trainees will able to estimate and wire-up of different types of industrial wiring in narrow range of application. Test industrial wiring by using appropriate tools under close supervision with quality concepts and proper safety.		✓	
6. Plan & install pipe & plate earthing. Measure earth resistance by earth tester	1) The trainee will demonstrate the skill of proper pipe & plate earthing.connection & taking readings. 2) The trainee will able to communicate with clarity. 3) The trainee will responsible for own work within defined limit.		✓	
7. Select, assemble, wire-up & test control panel for 3 phase AC motor.	Trainee will be able to demonstrate to assemble, wire-up & test control panel for 3 phase AC motor with some responsibility.		✓	
8. Explain and apply the types, constructional features, working principle of transformer. Test & maintenance of transformer.	The trainee will demonstrate the types and constructional feature of Transformer and maintenance of transformer in routine and repetitive application. The trainee will be done the work under close supervision.		✓	
9. Operate DG set and it's controls	The trainee will be able to demonstrate to operate the DG set, routine maintenance in narrow range of application.		✓	

**QUALIFICATION FILE SECTION 5
EVIDENCE OF RECOGNITION OR PROGRESSION**

In the course of the research and/or development was there any direct evidence that the qualification(s) will be recognised by particular bodies – eg for entry to work or further study?

The qualification enjoys the recognition of major employers in Government/Public/ Private sectors) which is reflected in their respective Recruitment Rules. Sample Recruitment Rules are enclosed.

List any agreements which have been reached with regulatory bodies on recognition.

NCVT itself is working as the regulatory body.

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

1. Qualifying trainee will obtain an NCVT Certificate in Electrician trade which places the trainee in a position to investigate requirements for progression to a National Apprenticeship Certificate or National Craft Instructor Certificate or Diploma in Electrical Engineering, as permitted by State Boards of Technical Education or any other qualification at NSQF level 5 as decided by NSQC.
2. The State of Gujarat has already declared that those who complete two year ITI course after passing 10th Standard and having passed NCVT with English as a subject would be treated at par with Gujarat Secondary Education Board's 12th Standard and could opt for higher courses.
3. The matter of granting the ITI qualification equivalence to 12th Standard has been taken up with the Ministry of Human Resources and an Expert Group has been formed in this regard to take the example of the Gujarat State to the National level.

SUMMARY

Please attach any documents giving further information about any of the topics above.
Give details of the document(s) here: (Annexure 4)

**QUALIFICATION FILE SECTION 6
EVIDENCE OF INTERNATIONAL COMPARABILITY**

List any comparisons which have been established.

Nil