

Establishment of New Test Facilities (out lay of Rs.356.10 crore) under XII Five Year Plan

Projects with details of project components

Sl. No	Name of the projects/project components	Cost (Rs. in cr.)	Duration in months	Objectives
1	Establishment of Transmission Line Tower Testing Station and Associated Test Facilities	90.00	48	<p>Creation of test facility for testing of full scale UHV transmission line towers for its extreme service conditions in the laboratory and validating the design.</p> <p>Creation of associated test facilities for testing conductors, insulators, Energy meters, Relays and other electrical equipments (Environmental testing).</p>
2	Augmentation of test facilities at STDS, Bhopal.	20.00	36	<ul style="list-style-type: none"> • Augmentation & Modernization of 1250 MVA Short Circuit Testing Station. <p>On completion of up-gradation of material handling facility, it will be possible to untank the large power transformers after short circuit test for physical inspection. The creation of additional routine test facility of Power/distribution transformers will increase the revenue earnings.</p> <ul style="list-style-type: none"> • Augmentation & Modernization of 100 MVA On Line Testing Station <p>Modernization of the services will address the update requirements of national and international standards and also will give additional facilities to the customers.</p> <ul style="list-style-type: none"> • Augmentation & Modernization of the supplementary test lab <p>Modernization of the services will address the update requirements of national and international standards and also will give additional facilities to the customers.</p> <ul style="list-style-type: none"> • Procurement of Spares/ Equipments required to run the

				<p>existing 1500 MVA Short circuit plant G1 & G2</p> <p>Procurement of the spares will help to upkeep the lab. in good working condition and will avoid unnecessary breakdowns.</p>
3	Augmentation of Pre-Qualification test facilities at CPRI.	11.50	24	<p>Project aims "Establishment of additional test circuit for Pre-Qualification test on power cables" at PQ Laboratory, CPRI, Bangalore.</p> <p>On completion of establishing the additional Pre-Qualification test facility, it will be possible to test Pre-Qualification test on two cables simultaneously. With the additional test facilities type testing of power cables rated up to 400 kV can also be taken up in Cables Laboratory.</p> <p>Other objective is to provide enhanced test facilities for Impulse Testing of Circuit Breakers, Power Transformers and other Power system Equipment and an R&D facility for the Development of EHV Switchgear and Power Transformers.</p>
4	Establishment and augmentation of short circuit test facilities at CPRI, Bangalore.	8.50	21	<p>Additional Short-circuit Transformer for new 50 MVA short-circuit test station</p> <p>On completion of additional Short-circuit Transformer for new 50 MVA short-circuit test station, a new 60 MVA short-circuit transformer will be added to the facility. The 11kV bus-bar system will be extended up to the proposed new Transformer. The LV bus-bar system will be installed from the transformer to the LV test bay. A new LT make-switch will be installed in this LV bay. New set of 11kV Reactors and resistors will be installed.</p> <p>Up-gradation of additional Short-circuit Transformer for new 50 MVA short-circuit test station will result in better services for customers and also to reduce the waiting period in testing as</p>

				<p>desired by the customers.</p> <p>Other objective is aimed at Enhancement of Test facility for Instrument Transformers.</p> <p>On completion of enhancement of test facility for Instrument transformers, it will be possible to conduct the accuracy test on Current Transformers of current rating up to 8000A & for Potential transformer accuracy test upto voltage class of 132kV. Precision CT-PT comparator with latest features will be used to meet the demands for testing 0.1S and 0.2S accuracy class CT where accuracy measurement at 1% primary current is also required. The creation of additional routine test facility of CT/PT will increase the revenue earnings.</p>
5.	Relocation and Augmentation of Thermal Research Centre (TRC), Nagpur and Expansion of the Nagpur Unit	48.00	24	<p>The existing laboratories e.g. mechanical engineering, engineering material with all their test facilities at the present TRC, will be re-established at the new location. In addition to the existing facilities under the augmentation plan in-situ creep analysis laboratory, metallurgical analysis, steel and concrete analysis, Advanced Non-Destructive Evaluation (NDE) facilities will be available in the relocated centre.</p> <p>Various other infrastructure planned include Administration and Accounts Office, Civil, Electrical Offices, Seminar Hall/Auditorium, Library, Canteen, Guest House, Staff Quarters, Training Centre, Trainee's Hostel, Recreation Club (Indoor and Outdoor).</p>
6.	Enhancing Test Facilities of Regional Oil Testing Laboratories including Relocation of RTL-Kolkata	21.10	24	<p>It is endeavor of CPRI to provide test facilities at strategically important regions of the country. In south central region of the country there has been a steady increase in the requirement of such laboratory. At present UHVRL does not have Transformer Oil test facility and hence proposed to add this facility with existing land and</p>

				<p>infrastructure.</p> <p>Transformer Oil Testing facility is being utilized by electricity boards for condition monitoring and annual maintenance of power equipment and is also the major revenue earning activity of oil test laboratories. Most of the equipment available have been extensively used for more than a decade and have become obsolete and needs replacement.</p> <p>It is essential to modernize the facility by adding latest state-of-art equipment to bring the laboratory on par with international laboratories. The mobile oil test facility which has been very extensively utilized by state electricity boards and utilities for last 15 years will be upgraded.</p>
7.	Establishment of 40 KA continuous current Temperature Rise test facility at HPL, CPRI, Bangalore	15.00	24	To create Temperature Rise Test facility for Power system equipment such as Isolated Phase Bus Ducts, Segregated and Non segregated Phase Bus Ducts, Pantograph Isolators ,Centre Break and Double Break Isolators of all Voltages up to 765 kV, Circuit Breakers, Power Connectors and Clampings, Conductors, Bushings, On Load Tap Changers for Transformers.
8.	Setting up Regional Testing Laboratory in Western Region	115.30	36	At present, the Industries and Utilities in the Western Region are being serviced from CPRI unit at Bhopal, Hyderabad and Bangalore. CPRI in it's endeavor to reach to the large number of customers, had proposed to set up a unit at Nashik. The unit encompasses short circuit test facility, Insulating oil test facilities and Energy Meter test facilities to start with. In the future, it has plans to expand by establishing other required facilities in a phased manner.
9.	Centre of Excellence for Non-Destructive Testing & Evaluation of Power Plant Components	8.00	24	In order to carry out the advanced Inspections facilities for condition assessment of critical components as part of Remaining Life Assessment (RLA) of Power Plant components, the present facilities are proposed to be

				upgraded to meet the current & future requirements in Non – Destructive (ND) evaluation.
10.	Establishment of Phasor Measurement Unit (PMU)System Testing and Calibration Laboratory	6.65	36	It is proposed to establish new facilities for testing and calibration of PMU. It will provide necessary facilities for testing and calibration of Phasor Measurement Unit as per IEEE C37.118, part 1, 2011 and IEEE PC37.242. It is proposed to provide infrastructure for carrying out various tests to compliance of Total Vector Error (TVE). The new facilities will be capable of checking the performance of PMU under steady state and dynamic conditions.
11.	Smart Grid Research Laboratory	11.05	24	To establish Smart Grid Research Laboratory comprising of Smart Grid Technology Centre (SGTC) and Interoperability Laboratory (Interop Lab). New facility is for carrying out validation tests and live demonstration bed for the stakeholders to evaluate the smart grid technology components and platforms.