



Sapthagiri College of Engineering

(Affiliated to Vigneeswaraya Technological University, Belagavi & Approved by AICTE, New Delhi)
#14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru – 560057
Phone: 080-28372800/1/2 www.sapthagiri.edu.in Fax: 080-28372797

Date: 29/05/2017

To,
The Principal,
Sapthagiri College of Engineering
Bangalore-560057

Sub- Sanction of Research grant for the research project “Study on Transient Stability on IEEE 14 Bus System using Mi-Power”

In pursuance of the proceedings of the research committee and approval of the Principal through his letter dated 19/05/2017, the management in its meeting has decided to sanction the research grant. The management is pleased to sanction Rs.4,75,000/- (**Rupees four lakhs seventy five thousand only**) for the Electrical & Electronics Engineering department for carrying out the project, “Study on Transient Stability on IEEE 14 Bus System using Mi-Power”, by Prof. A.Dhamodaran as per the recommendation of RDECI.

The Principal is directed to facilitate the sanction of the amount and follow all the necessary procedure of the accounts and submit the utilization certificate after securing the same from the researcher.

Executive Director
Sri G.D. MANOJ
Executive Director
Sapthagiri College of Engineering
BENGALURU - 560 057.

Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057



Sapthagiri College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi)

#14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru - 560057

Phone: 080-28372800/1/2

www.sapthagiri.edu.in

Fax: 080-28372797

To,

Date: 19/05/2017

The Executive Director,

Sapthagiri College of Engineering

Bangalore-57

From,

The Principal,

Sapthagiri College of Engineering

Bangalore-57

Sub- Requisition for research grant for the research project.

With reference to the above subject, I hereby inform you that RDECI has approved the research project "Study on Transient Stability on IEEE 14 Bus System using Mi-Power" submitted by Prof. A.Dhamodharan of Electrical & Electronics Engineering department after scrutinizing the research proposal.

Therefore, it is requested that an amount of Rs.4, 75,000 (**Rupees four lakhs seventy five thousand only**) may please be sanctioned for carrying out the above said research project.

Thanking you,

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560057

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560057



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Phone:080-28372800/1/2

www.sapthagiri.edu.in

Fax: 080-28372797

Date: 30/05/2017

To,
The Convener,
R&D, Entrepreneurship Committee & Incubation Center (RDECI),
Sapthagiri College of Engineering
Bangalore-560057

Sub- Sanction of Research grant for the research project Reg.,

The management of Sapthagiri college of engineering has sanctioned the Research grant of **Rs.4,75,000 (Rupees four lakh seventy five thousand only)** for the research project "Study on Transient Stability on IEEE 14 Bus System using Mi-Power" to be carried out by the department of Electrical and Electronics Engineering.

[Handwritten Signature]
Principal

[Faint stamp: Sapthagiri College of Engineering, 14/5 Chikkasandra, Hesaraghatta Main Road, Bengaluru - 560057]

Copy To,
All Departments

[Handwritten Signature]
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Sapthagiri College of Engineering- Bangalore 57

Department of Electrical and Electronics Engineering

Date: 16-5-2017

To,

The Principal
Sapthagiri College of Engineering
Bangalore

Through HOD & RDECI

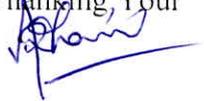
From

Mr. A. Dhamodaran
Department of Electrical and Electronics Engineering,
Sapthagiri College of Engineering

Subject: Request for financial assistance to carryout research Project.

With respect to above subject, a Project Proposal is being submitted herewith for the approval, for the academic year 2017-18. The project is on "Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER" and a detailed proposal is being attached herewith. The research proposal and budget split-up has been enclosed herewith. It is hereby requested that the Research proposal may please be approved and the amount for the research may please be sanctioned.

Thanking Your

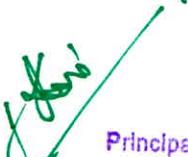


RDECI :



HOD /EEE

PROF & HOD
Department of Electrical & Electronics Engineering
Sapthagiri College of Engineering
Bangalore - 560057.



Principal

Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057



Principal

Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

1

RESEARCH PROPOSAL

A. GENERAL INFORMATION

1	About the project	
A	Title of the project	: Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER
B	Subject area as per instruction	: Power system
2	Details of Principal Investigator	
A	Name	: Mr.A. Dhamodaran
B	Qualification	: M.Tech in Electrical Power systems (Ph.D)
C	Designation	: Assistant Professor
D	Department	: Electrical and Electronics Engineering
E	Years of teaching/research experience	: 17
F	Email ID	: adhamodaran@sapthagiri.edu.in
G	Cell Number	: 9620540352
H	Details of the Head of the Department	
I	Name of the Head of the Department	: Dr. K.N. Ravi
J	Email ID	: hodeee@sapthagiri.edu.in
K	Cell Number	: 9449940873


Signature of the Investigator


Signature of Head of the Department

PROF & HOD
Department of Electrical & Electronics Engineering
Sapthagiri College of Engineering
Bangalore - 560057.


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangaluru - 560 057


Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

B. DETAILS OF THE PROJECT PROPOSAL

1.	Title of the Project Proposal	:	Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER
3.	Objectives of the proposal	:	<ol style="list-style-type: none"> 1. To analyze the behavior of the synchronous machine in particular angular position of the rotor with respect to time after the fault occurs in the system 2. To study the effect of the fault clearing time on the transient stability of an IEEE 14 bus system.
4.	Background of the project	:	Transient instability has been the dominant stability problem on most systems and has been the focus of much of the industry's attention concerning system stability.
5.	Methodology (Please include flow sheet, if required)	:	An IEEE 14 bus test system is considered for the study of transient stability. The transmission line data, generator data, bus data, transformer tap setting data and shunt capacitor data of the IEEE 14 bus test system are also taken into consideration. A load flow study on the IEEE 14 bus system is to be carried out. Transient stability study is to be carried out using MI POWER software to determine the rotor angle. With the help of these values, the swing curve is to be plotted. The machine stability are to be stated from this
6.	Milestones with time schedule & work plan	:	<ol style="list-style-type: none"> 1) Transient stability study 3 months(Aug 2017 – Feb 2018) 2) Enhancement of voltage profile 3 months (May 2018-July 2018)
8.	List of equipment required in phases (If Any)		Up gradation of MI-POWER software Rs.4,75,000 apprx


 Principal
 Sapthagiri College of Engineering
 Chikkasandra, Hesaraghatta Road,
 Bangalore-560 057

9.	Relevance, importance & application of the project	:	The transient stability analysis gives the necessary information required for the power system operator to take remedial actions at the occurrence of a fault before any part of the system is damaged.
10.	Novelty/Uniqueness of the project proposal	:	It helps in the design of equipment's which will satisfactorily operate even after a fault.


Principal Investigator


HOD

PROF & HOD
of Electrical & Electronics Engineering
Sapthagiri College of Engineering
Bangalore - 560057.


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangaluru - 560 057


Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

Sapthagiri College of Engineering- Bangalore 57

Department of Electrical and Electronics Engineering

Subject: Sanction of the fund for the Research Project.

2- 6-2017

The committee hereby informs that the following projects have been approved for the academic year. The report and the outcome of the project have to be submitted to the committee after the completion of the project. The utilization certificate shall have to be given along with the final report.

Sl. No	Principal Investigator	Department	Project entitled	Amount Sanctioned
1	Mr. A. Dhamodaran	EEE	Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER	4,74,750/-



Convener

PROF & HOD

Department of Electrical & Electronics Engineering
Sapthagiri College of Engineering
Bangalore - 560057.

Copy To,

Principal

HODs of All Departments

IQAC


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangalore - 560 057



Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

To,

15/06/2017

Principal,

Sapthagiri College of Engineering

Bangalore-560057

Through HOD



Subject: Request for Project approval and sanction of fund for the Project.

Sub: Procurement of Instruments Reg..

With reference to the letter received from R& D committee regarding approval of research project, we hereby request you to kindly sanction the procurement of the following equipments/Instruments for the research project entitled "Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER". Kindly consider this favorably and please do the need full.

Thanking you,

Yours Faithfully,


(A. Shanmugan)
Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangalore - 560 057

To,

Research and Development cell,
Sapthagiri College of Engineering
Bangalore-560057

Through HOD

From

Mr. Dhamdaran
Department of Electrical and Electronic Engg
Sapthagiri College of Engineering
Bangalore-560057

Sub: Submission of report and utilization details

With reference above cited subjected I am hereby enclosing project report entitled Studies on "Transient stability and enhancement of voltage profile on IEEE 14 bus system using MI-POWER" and utilization certificate. This for your kind information, please.


HOD/EEE


(A) Dhamdaran


PRINCIPAL

The MI-POWER software worth of Rs. 474750/- procured (Invoice number...24112) is being utilized for research project Studies on Transient stability and enhancement of voltage profile on IEEE 14 bus system.

Copy,

Principal


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangaluru - 560 057


Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057
Auditor



**POWER RESEARCH & DEVELOPMENT
CONSULTANTS PRIVATE LIMITED,**

5, 11th Cross, 2nd Stage, West of Chord Road, Bangalore - 560 086

Tel: +91-80-23192159, 23192168, 23192209 Fax: 23192210

E-mail : prdc@vsnl.com

KST : 71628873

CST : 71678876 dtd 6-5-95

Employee's Provident Fund Code No.KN/BN/19905

SERVICE TAX Regn. No.: AABCP3291JST001

IEC N.: 0703013891

PERMANENT A/c No. : AABCP3291J

TIN No: 29340028246 Dtd:01.04.2003

TAX INVOICE

INVOICE NO: 24112

DATE: 29.06.2017

SECOND COPY

Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangalore - 560090

P.O. NUMBER	P.O.DATE	D.C. NO.	D.C.DATE	NATURE OF JOB
SSECT:HO:GNH:1245:SH:SCE:INW:104 0:2017	28.06.2017	SOFTWARE SUPPLY

SL.NO.	DESCRIPTION	QTY	UNIT PRICE	AMOUNT IN INR
1	SOFTWARE SUPPLY	4,50,000.00
NARRATION :				
1. Supply of MiPower Software (Up-gradation of existing 10 users to latest version and Additional 10 users license with the latest version)				
2. 100% of the order value (Rs.4,50,000/-) after Installation and Training				
3. Vat at 5.5 % extra				
SUBTOTAL				4,50,000.00
VAT @ 5.5%				24,750.00
TOTAL				4,74,750.00

Words: (Rupees Four Lakh Seventy Four Thousand Seven Hundred Fifty Only)

TERMS :

1. Make all DDs payable to : Power Research & Development Consultants Private Limited, Bangalore.
2. 24% Interest is applicable if the bill is not cleared within 15 days.

Our Bank Account Details

IFSC CODE:

Beneficiary's Bank:

Beneficiary's Account Number:

Beneficiary's Account Name

Beneficiary's Address

CNRB0000886

Canara Bank, Mahalakshmi Layout branch, Bangalore - 86

0886261010300

Power Research & Development Consultants Pvt. Ltd.

#5, 11th Cross, West of Chord Road, II Stage,

Bangalore - 560086, Karnataka, INDIA

[Signature]
Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta R.
Bangalore-560 057

[Signature]
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta R.
Bangalore - 560 057

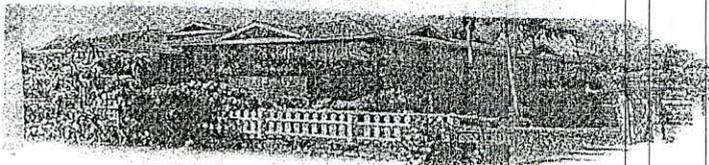
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta R.
Bangalore - 560 057

[Signature]
Prepared by

[Signature]
Checked by

for POWER RESEARCH & DEVELOPMENT
CONSULTANTS PVT.LTD.





PURCHASE ORDER

SUPPLIER REF NO:PRDC/2017-2018/SCE/64	NO: SSECT-HO:GNH:1245/SHI:SCE:INW:1040:2017
Mail Dt : June 27, 2017	DATE: 28.06.2017
SUPPLIER	BILLING and DESPATCH TO:
Power Reserch & Development Consultants Private Limited	Sapthagiri College of Engineering
#5,11th Cross	
2nd Stage,	15, Chikkasandra,
West of Chord Road	Hesaraghatta Main Road,
Bangalore-560058	BANGALORE - 560090 INDIA
Contact Person : Mr.Nitish Kumar/Venkatesh	Contact Person : Mr.Principal
MB:+91 95352 53557/9845009162/080-23192210	28392801

SI	DESCRIPTION	No of User License	QTY	UNIT RATE	Rate of Tax	Tax Amount	HO Accounting	
							TOTAL AMOUNT	
1	MiPower 9.1 Version Software Basic Package							
	(i) Up-gradation of existing 10 users to the latest version	10						
	(ii) Additional 10 users license with the latest version	10	20	450000.00	5.50%	24750.00		474750.00
	MiPower*Modules							
	(a) GraphicalUserInterfaces	(d) PowerTRS-TransientStabilityStudy						
	PowerSystemNetworkEditor	Unlimiteddisturbances						
	FACTSDevices	MotorStartinganalysis						
	DatabaseManager	UserdefinedControlssystem(AVR,SVC,HVDC,ULTC)						
	BatchModelInterface	IEEEPSS						
	MultiGraphPlotter	Text+Graphicaloutputs						
	AutoCADInterface	(e) Renewables						
	AutoCADInterface	PVModelling						
	AutomaticSingleLineDiagramGenerator	WindModellingwith4differenttypesofWind						
	ReportGenerator	bins(WT1,WT2,WT3,WT4)						
	(b) PowerLFA-LoadFlowAnalysis	(f) MiPowerTools						
	Newton-Raphsonoption	Line/CableParameterCalculation						
	Fast-DeCoupledoption	ABCDParameterCalculation						
	Gauss-Seidelmethodoption	EconomicDespatch						
	Frequencydependentloadflow	YBus&ZBusFormation						
	Contingencyranking	SingleArea/MultiAreaLFC						
	EconomicDispatch	PowerAngleCurve						
	PresentWorthComputation	ReceivingEndPowerCircleDiagram						
	Real&Reactivepoweroptimization	InductionMotorCircleDiagram						
	CustomReports	CriticalClearingTime						
	(c) PowerSCS-Short-CircuitStudy	UnitCommitment						
	Multi-case/Multilandings/	TransformerSizing						
	Multigenerationversion	HydroThermalCoordination						
	Motorcontribution							
	EarthingandZigzagtransformer							
	ReactorSizing							
	Loop&Radialsystems							
	Travellingshuntfault							
	CustomReports							
	Grand Total							474750.00

Rupees: Four lakh seventy four thousand seven hundred fifty only

FOR SAPTHAGIRI COLLEGE OF ENGINEERING

Authorised Signatory
(Signature)

TERMS AND CONDITIONS

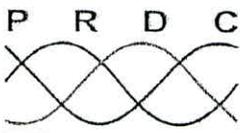
- 1 Please mention PO No & Indent No In your Invoice
 - 2 Delivery : Immediate
 - 3 Payment: 100% after Installation and Training and also subject to receipt of required satisfactory work completion report from our Engg College concerned
 - 4 Soft copy of the Software should be given. In the form of DVD/Pendrive
 - 5 Rates are also inclusive of all Taxes. Further No Additional charges for packaging/handling/forwarding/installation
 - 6 FREE training be given for all EEE staff for 3 days at our College premis. This training should also be provided at free of cost in case if it required at a later date
 - 7 Warranty: This offer covers 1 Year free warranty. Under free warranty support period, technical support can be provided over phone/fax/email on all working days of MiPower. Minor softwareupdates & bug fixes are to be supplied on CD media by courier absolutely free of cost
 - 8 Other Terms and Conditions as detailed In your quote referred above
- CC 1) EEE Dept, Engg College to verify, follow up and confirm the receipt of the Software and installation as per this PO through mobile office
2) Verify and Certify the bills and send the bills in original to HO with due certification as per this PO conditions for arranging payment as per the FORMAT

(Signature)
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta
Bangalore-560057

Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560057

PRDC COPY

POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT. LTD



विज्ञानेन ज्ञानानि जीवन्ति

#5, 11th Cross, 2nd Stage, West of Chord Road, Bangalore-86,
Corporate Identity Number (CIN) : U72200KA1994PTC015487
Ph No: +91-80- 23192159//23192209; Fax: +91-80-23192210
E-mail : prdc@vsnl.com; www.prdcinfotech.com

KST :71628873

CST :71678876

dtd 6-5-95

DELIVERY CHALLAN

NO: 2017-2018/13

DATE: June 29' 2017

PURCHASER'S NAME & ADDRESS		SUPPLIER'S ADDRESS	
To Sapthagiri College Of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bangalore - 560057 Karnataka Phone: 080-28372801,28372802,28372803 Kind Attn.: Dr. K. N. Ravi HOD Of Electrical & Electronics Engineering		Power Research & Development Consultants Pvt. Lt #5, 11 th Cross, 2 nd Stage, WOC Road Bangalore - 560 086. INDIA Ph No: +91-80- 23192159//23192209 Fax: +91-80-23192210 Email: prdc@vsnl.com	
PO. No. : SSECT:HO:GNH:1245:SH:SCE:INW :1040:2017	Dtd: 28.06.2017	Invoice/Credit Bill No.: 24112	Date: 29-06-2017

SL.NO.	ITEM DESCRIPTION	QTY IN NOS.	REMARKS
I	MiPower Software User Manuals		
	1. Load Flow Analysis	01	✓
	2. Short Circuit Study	01	✓
	3. Transient Stability	01	✓
	4. Free Programmable Blocks	01	✓
	5. Relay Coordination	00	
	6. Line & Cable Parameter Calculation	01	✓
	7. Dynamic Stability	00	
	8. Voltage Instability Analysis	00	
	9. Network Reduction	00	
	10. Harmonic Analysis	00	
	11. Long Term Demand Forecast	00	
	12. Sub Synchronous Resonance	00	
	13. Electro Magnetic Transient Analysis	00	
	14. Three Phase Load Flow Analysis	00	
	15. Ground Mat Design	00	
	16. Technical document	01	✓
	17. User Interface	01	✓
	18. VTU Blue Book	01	✓
	19. How to solve manuals	05	✓
II	Installation Manual	01	✓
III	CD No. - MiPower- 9169-20	01	✓
IV	USB- Network Lock No.: 3974 - 4153	01	✓
V	Authenticity Certificate	01	✓
VI	Universal Lock Secure Box No.:	00	
		TOTAL:	17

SHIP MODE: ✓ HAND DELIVERY / COURIER / REG. POST

NOTE: Only ticked items are applicable.

*Kindly return back the existing Network lock Nos. 3974-0946 in lieu of new Network lock No. 3974 - 4153

for POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT. LTD

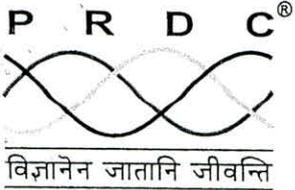
Received by (Signature with Seal)
Professor & HOD
 Department of Electrical &
 Electronics Engineering
 Sapthagiri College of Engineering
 BANGALORE - 560 057

Sapthagiri College of Engineering
 14/5, Chikkasandra, Hesaraghatta Main Road
 Bengaluru - 560 057



Kari

items subject to
 operation work
 one



Power Research & Development Consultants Private Limited

#5, 11th Cross, 2nd Stage, West of Chord Road, Bengaluru -560086, INDIA
Corporate Identity Number (CIN) : U72200KA1994PTC015487
Phone: +91 - 80 - 4245-5555 / 2319-2209 / 2319-2159 / 6715-6100
Fax: +91 - 80 - 4245-5556 / 2319-2210
E-mail: prdc@vsnl.com Website: www.prdcinfotech.com

Ref: PRDC/2017-2018/SCE/482

H. R. Venkatesh
General Manager – B.D

June 29, 2017

To
Sapthagiri College Of Engineering
14/5, Chikkasandra,
Hesaraghatta Main Road
Bangalore – 560057 Karnataka
Phone: 080-28372801,28372802,28372803
Fax: +91-80-28372797

Kind Attn.: Dr. K. N. Ravi - HOD Of Electrical & Electronics Engineering

Dear Sir,

Sub:– Supply of MiPower[®] Software to EEE Dept.

Ref: PO No: SECT:HO:GNH:1245:SH:SCE:INW:1040:2017 dated 28.06.2017

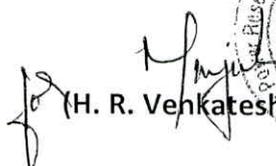
With reference to the above, we thank you for placing the order on us. Please find herewith enclosed following:

1. MiPower[®] Software package version – 9.1, C.D. No. 9169-20 – 1 No.
2. USB Network Hardware Lock for Twenty users licence (No. 3974 - 4153) – 1 No.
(Kindly return back the existing Network lock Nos. 3974-0946 in lieu of new Network lock No. 3974 – 4153)
3. MiPower[®] user manuals – 1 set
4. Delivery Challan in Duplicate (Kindly return the Delivery Challan super scribed as 'PRDC Copy' duly signed with seal and date as a token of receipt)
5. Authenticity Certificate.
6. Invoice No.24112 dated: 29-06-2017 for an amount of Rs.4,74,750/- (Rupees Four Lakh Seventy Four Thousand Seven Hundred and Fifty only) in Duplicate

Please feel free to contact the undersigned if you have any questions / clarification.

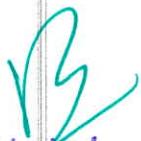
Thanking you again and assuring you of our prompt attention always,

Yours Faithfully,


(H. R. Venkatesh)

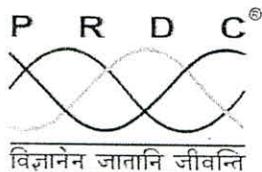


Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057


Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057

CLIENTS' COPY

POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT. LTD



#5, 11th Cross, 2nd Stage, West of Chord Road, Bangalore-86,
Corporate Identity Number (CIN) : U72200KA1994PTC015487
Ph No: +91-80- 23192159//23192209; Fax: +91-80-23192210
E-mail : prdc@vsnl.com; www.prdcinfotech.com

KST :71628873 } dtd 6-5-95
CST :71678876 }

DELIVERY CHALLAN

NO: 2017-2018/13

DATE: June 29' 2017

PURCHASER'S NAME & ADDRESS		SUPPLIER'S ADDRESS	
To Sapthagiri College Of Engineering 14/5, Chikkasandra, Hesaraghatta Main Road Bangalore - 560057 Karnataka Phone: 080-28372801,28372802,28372803 Kind Attn.: Dr. K. N. Ravi HOD Of Electrical & Electronics Engineering		Power Research & Development Consultants Pvt. Ltd. #5, 11 th Cross, 2 nd Stage, WOC Road Bangalore - 560 086. INDIA Ph No: +91-80- 23192159//23192209 Fax: +91-80-23192210 Email: prdc@vsnl.com	
PO. No : SSECT:HO:GNH:1245:SH:SCE:INW :1040:2017	Dtd: 28.06.2017	Invoice/Credit Bill No.: 24112	Date: 29-06-2017

SL.NO.	ITEM DESCRIPTION	QTY IN NOS.	REMARKS
I	MiPower Software User Manuals		
	1. Load Flow Analysis	01	
	2. Short Circuit Study	01	
	3. Transient Stability	01	
	4. Free Programmable Blocks	01	
	5. Relay Coordination	00	
	6. Line & Cable Parameter Calculation	01	
	7. Dynamic Stability	00	
	8. Voltage Instability Analysis	00	
	9. Network Reduction	00	
	10. Harmonic Analysis	00	
	11. Long Term Demand Forecast	00	
	12. Sub Synchronous Resonance	00	
	13. Electro Magnetic Transient Analysis	00	
	14. Three Phase Load Flow Analysis	00	
	15. Ground Mat Design	00	
	16. Technical document	01	
	17. User Interface	01	
	18. VTU Blue Book	01	
	19. How to solve manuals	05	
II	Installation Manual	01	
III	CD No. - MiPower- 9169-20	01	
IV	USB- Network Lock No.: 3974 - 4153	01	
V	Authenticity Certificate	01	
VI	Universal Lock Secure Box No.:	00	
TOTAL:		17	

SHIP MODE: ✓HAND DELIVERY / COURIER / REG. POST

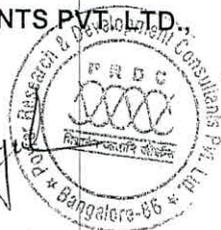
NOTE: Only ticked items are applicable.

*Kindly return back the existing Network lock Nos. 3974-0946 in lieu of new Network lock No. 3974 - 4153

for POWER RESEARCH & DEVELOPMENT CONSULTANTS PVT.LTD.

Received by (Signature with Seal):

Kari
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Road
Bangalore - 560057



B
Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057

SAPTHAGIRI COLLEGE OF ENGINEERING, Hessarghatta Main Road, Bangalore

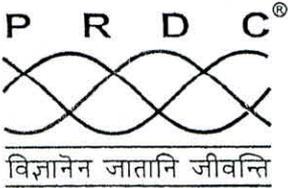
Vendor Bill Payment Slip

HO PO No:	S SECT: HO: GNH/1245: SA: SCE: INW: 1040/2017				Slip Dt	
Vendor Name:	M/S. POWER RESEARCH & DEVELOPMENT CONSULTANTS PRIVATE LIMITED				Date:	28-6-17
1) Vendor Bill No:	24112	Date	29-6-17	Amount	4,74,750	
2) Vendor Bill No:		Date		Amount		
3) Vendor Bill No:		Date		Amount		
4) Vendor Bill No:		Date		Amount		
5) Vendor Bill No:		Date		Amount		
Total Bill Amount				Rs	-	
Rupees in words:	Rs. Four Lakhs Seventy four thousand and Seven hundred and fifty only					
Stock Reg Ref:	Dept	Page No	SI			
	Dept	Page No	SI			
	Dept	Page No	SI			

"Certified that the items mentioned in the above referred bills have been accounted in the Stock Ledger and it is as per the HO PO terms. The Equipment/Items installed/working satisfactorily and recommended for payment as per PO terms"

Stores in charge		HOD		HOD		HOD
Auditor	Accounts	Director		Principal		Chairman

Principal
 Sathagiri College of Engineering
 Chikkasandra, Hessarghatta Road,
 Bangalore-560 057



Power Research & Development Consultants Private Limited

#5, 11th Cross, 2nd Stage, West of Chord Road, Bengaluru - 560086, INDIA
Corporate Identity Number (CIN): U72200KA1994PTC015487
Phone: +91 - 80 - 4245-5555 / 2319-2209 / 2319-2159 / 6715-6100
Fax: +91 - 80 - 4245-5556 / 2319-2210
Website: www.prdcinfotech.com

MiPower Installation Certificate

This is to certify that **MiPower® Ver.9.1** – Power system analysis package has been successfully installed at **Sapthagiri College of Engineering, Bangalore, Karnataka** on **20th September 2017**.

No. of MiPower installations: 20

Installed system details: Intel Core i3 - 3.9 GHz
4GB RAM
64 bit OS
1TB HDD

for Sapthagiri College of Engineering, Bangalore, Karnataka (Name, Seal & Signature)

Date : 22/09/17

for PRDC, BANGALORE (Seal & Signature)

DATE: 20/9/17

Basil M.T.
BASIL M.T.



K.S.
Professor & HOD
Department of Electrical &
Electronics Engineering
Sapthagiri College of Engineering
BANGALORE - 560 057

B
Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road
Bangalore-560 057

K.S.
Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta
Bangalore - 560 057

Training Completion Certificate

This is to certify that ~~3~~ ³ days training on MiPower® Ver. 9.1 – Power System Analysis Package has been held at Sapthagiri College of Engineering, Bangalore, Karnataka from 20th Sept 2017 to 22nd Sept 2017. All the modules were thoroughly explained during training period.

for Sapthagiri College of Engineering, Bangalore, Karnataka (Seal & Signature)

for PRDC, BANGALORE (Name, Seal & Signature)

BASIL MT

Training period: ~~3~~ ³ days.



List of Participants:

1. Mr. A. Dharmo dasan 6.
2. Mr. Mahanishnu. K. B. P. 7.
3. Mr. Shirasaj. A 8.
4. Mrs. Nandini D. B. 9.
5. 10.

Professor & HOD
Department of Electrical &
Electronics Engineering
Sapthagiri College of Engineering
BANGALORE - 560 057

Principal
Sapthagiri College of Engineering
Chikkasandra, Hesareghatta Road,
Bangalore-560 057

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
JNANASANGAMA, BELGAUM-590018



18

PROJECT REPORT ON
"TRANSIENT STABILITY STUDY ON IEEE 14 BUS SYSTEM
USING MI-POWER"

Submitted in the partial fulfilment for the award of the degree of
BACHELOR OF ENGINEERING
IN
ELECTRICAL AND ELECTRONICS

Submitted by

BLESSY PHILIP M	1SG14EE022
DIVYA M	1SG14EE026
ISHANI SHARMA	1SG14EE031
KAVYA J R	1SG14EE034

Under the supervision of

Mr. A DHAMODARAN
Asst. Prof. of EEE



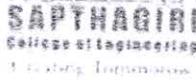
Dr. K N RAVI
Prof. & HOD of EEE



Principal
Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

For the academic year of 2017-18
DEPARTMENT OF ELECTRICAL AND ELECTRONICS
ENGINEERING

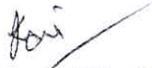
SAPTHAGIRI COLLEGE OF ENGINEERING
No. 148, Chikkasandra, Hesaraghatta Main Road, Bangalore-560057



Department of
ELECTRICAL AND ELECTRONICS ENGINEERING

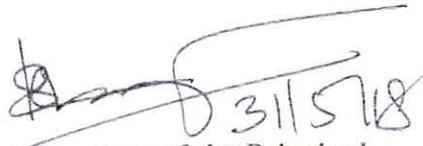
CERTIFICATE

Certified that the project work entitled "TRANSIENT STABILITY STUDY ON IEEE 14 BUS SYSTEM USING MI-POWER" is carried out by BLESSY PHILIP M bearing USN [ISG14EE022], DIVYA M bearing USN [ISG14EE026], ISHANI SHARMA bearing USN [ISG14EE031], KAVYA J R bearing USN [ISG14EE034], bonafide students of Sapthagiri College Of Engineering in partial fulfilment for the award of Bachelor of Engineering in department of Electrical and Electronics Engineering of Visvesvaraya Technological University, Belagavi during the academic year 2017-2018. It is certified that all corrections/suggestions indicated, for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for Bachelor of Engineering Degree.


Signature of the HOD

Dr. K N Ravi

In-charge & H.O.D


Signature of the Principal

Dr. K L Shivabasappa

Principal


Principal

Sapthagiri College of Engineering
Chikkasandra, Hesaraghatta Road,
Bangalore-560 057

with date

UTILIZATION CERTIFICATE

SI No	Particulars	Quantity	Amount
1	Mi- Power 9.1 version software	1	4,74,750
2	Miscellaneous		250
		Total	4,75,000

Certified that Sapthagiri college of Engineering has provided partial financial support of **RS 4,75,000/-** (Four lakh seventy five thousand only) towards Studies On Transient Stability and enhancement of voltage profile on IEEE 14 Bus System Using Mi-Power project conducted by Electrical and Electronics Department of Sapthagiri college of Engineering.

Certified that I have satisfied myself that condition on which the grant in aid sanctioned has been duly fulfilled and that I have exercised the following check to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of check exercised

1. Bills

Ken
Signature of the Principal with seal

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Signature of Auditor with seal



VB
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057