

**VIJAY KUMAR**  
**ELECTRICAL DESIGN ENGINEER**

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Yellanki VariPalli, Kalakada (Mo.),  
Chittoor (Di.), Andhra Pradesh, INDIA.

Pin Code -517235.

**PROFILE OBJECTIVE: -**

Having 4.0+ years of good exposure in Electrical design and simulation. Completely dedicated to substations, power plant, railway, industrial and metro projects design & simulation. Having hands on experience in Earthing/Grounding, Lightning, EMF, LFI, Thermography, Wind, and Solar system.

**ACHIEVEMENTS: -**

- Developed a Risk assessment calculations sheet as per IEC 62305-2 & NFC 17 102, IEEE 998 for Lightning Protection System Design and Analysis for AIS, GIS, transmission lines and all the living being structures.
- NIDM member.
- Appreciation letter from DFCCIL for LPS design of 2x25kV TSS, SSP & SP substation.
- Appreciation letter from SJVN Nepal HEP power plant for earthing design.
- Time management award from Sterlite Pvt ltd for electrical site activity.
- Appreciation from UPL-2 for On-site LPS design.
- Published Modular cascaded H-bridge multilevel inverter with MPPT controller in ICRIEAT international conference.

**DESIGN AND SIMULATION: -**

- Railway network design and simulation: - (as per EN-50122-1&2)
  - DFCCI, Metro, tunnel railway network modeling and simulation by using CDEGS.
  - AC and DC traction power system - EMF check.
  - Electrical clearance study. - Stray current investigation
- Earthing simulation and Design: - (by CDEGS, AutoCAD, Argon, WinIGS & XGS Lab software as per IEEE-80 & 81, EN 7430, IS 3043, AS/NZS 4853)
  - HV and LV substation Grounding grid testing, design and simulation.
  - Soil resistivity testing and calculations. - Dangerous potential simulation.
  - Earth grid designs and validation. - LFI&EPR simulation over pipeline.
- Lightning calculations and Design: - (by CDEGS & AutoCAD software, as per BSEN/IEC-62305, NFPA 780, NFC 17 102, IEEE 998)
  - Risk assessment calculations. - LPS design & SPD Selection process.
  - Lightning current simulations
- AutoCAD Electrical: -
  - Analyzing all type of CAD designs. - Sectional drawings design.
  - Single line designs (SLD). - 3D designs.

**ORGANIZATIONAL EXPERIENCE: -**

CDEGS	: RESAP, MALZ, HIFREQ, MALT, SESCAD, FCDIST, FFTSES
Argon	: Lightning Protection System design.
ETAP	: Earth mat design & simulation and LV System studies.
AutoCAD	: Electrical & Mechanical- Drafting (2D and 3D).
PVsyst, VIRTUOSOLAR	: PV system design and 3D analysis.
QGIS	: Google map routing design.
DBYD	: To get electrical clearance for the risk assessment area.

## **JOB PROFILE: -**

- Working as an Electrical project engineer in JACOBS Engineering, Mumbai from October 2020 to till data.
- Worked as an Electrical design engineer in Manav Energy Pvt Ltd, Bengaluru since May 2017 to September 2020.

## **QUALIFICATION: -**

M.Tech - Power Electronics from NEC college under JNTUK (2014-2016), with 75%.

B.Tech - Electrical and Electronic Engineer from ANU (2010-2014), with 72%.

## **SIGNIFICANT PROJECTS: -**

### **Ongoing Projects-**

- Yarra Valley Water-Melbourne: Earth Potential Rise (EPR) and Low Frequency Induction (LFI) study of AC interference of transmission line over pipeline.
- Hallam railway station-Victoria: Insulation coordination study for 1500V DC network.
- Root cause analysis of DC traction leakage/stray current on GAS pipeline design of HCMT Pakenham depot.

### **Major Projects-**

#### **Project -1**

Project Title : DFCCIL railway network design and simulation.

Client : L&T.

Role : Project Design engineer.

Duration : Dec 2019 – Oct 2020(team size-5).

#### **Description:**

The study is including of Earthing & Bonding, Lightning Protection System, EMI-EMC, Insulation coordination and Clearance study.

Earthing & Bonding study is done in CDEGS to evaluate the rail & touch potential as per EN 50122, IEC 60479. The lightning protection system design is done to protect the TSS, SSP & SP protection from lightning. The EMC study is done to know the rail potential on signal cable to ensure the signal working under normal conation.

#### **Project -2**

Project Title : TAQA and SP (photovoltaic) substations earth mat design - Egypt.

Client : GE T&D.

Role : Design Engineer

Duration : June 2018 – Sep 2018(team size-3).

#### **Description:**

The TAQA and SP PV plant are exiting in Egypt. The study is with 2.5kA of DC fault current and high soil resistivity.

The earth grid proposed to lay under 0.5 m from G.L with 100 m by 100 m spacing of copper conductor to get all the parameters which is are Step potential, Touch potential, Cross section area of the grid conductor and Grid resistance under the permissible limits.

#### **Project -3**

Project Title : Lightning Protection system design for Al-Thumama stadium - Dubai.

Client : Jain and Partners.

Role : Design engineer.

Duration : Dec 2017 – May 2018(team size-3).

#### **Description:**

Al-Thumama Stadium is located in Dubai. Properties of the structure is 160m OD, 60m ID –

and 45m height. According to IEC-62305 & NFC 17-102, the structure is protected with Class-I of lightning protection system design.

The advanced lightning protection system of early streamer emission is used to protect the stadium from lightning.

**Responsibilities: -**

- Input data collection for design and simulation.
- Internal meeting with team to understand the project.
- Methodology preparation, Modeling, Design and simulation.
- Report preparation and publication.
- Client interaction and closer meeting.

**LIST OF PROJECTS HANDLED: -**

Off-site Projects:

- 2x660 MW Adhani Thermal Power Plant Earthing & Lighting audit validation.
- SJVN, Napel-900MW Hydro Electric Power plant earthing design.
- Rohatang (Atal) Tunnel: Earthing design.
- JMRC: Earthing and Bonding design and simulation.
- HVDC transition station Pugalur: Earthing design.
- NTPC Kahalgaon: 2340MW thermal power plant Earthing design validation and plant audit.
- KG-D6: Lighting Protection System audit and Design validation.
- Hong Kong-IWMF: Total plant Earthing design.

On-site Projects:

- Sterlite Ahmedabad: Earthing, Lightning and Instrumentation audit of plant.
- UPL-2: Lightning Protection System design on site.
- MCPI: Lightning Protection System design.
- Napel-Arun-3: Soil resistivity measurement for Earth mat design.

**PERSONAL PROFILE: -**

Date of Birth : 2<sup>nd</sup> Sep 1992.  
 Gender : Male.  
 Marital Status : Single.  
 Languages Known : Telugu, English. (Tamil, Kannada, Hindi)

**DECLARATION: -**

I hereby declare that the information furnished above is true to the best of my knowledge. I assure you that I will be responsible for its accuracy.

Place:

Date:

**(Y. VIJAY KUMAR)**