NIRMAL CHANDRA

Director – Electrical Design Engineering | Solar PV, BESS, EV Charging, Commercial Power | Design Automation & AI Tooling

Agra, Uttar Pradesh, India · nirmalfx3@gmail.com · +91 78951 91101 · nirmalchandra.com · linkedin.com/in/nirmalfx3

PROFESSIONAL SUMMARY

Electrical design leader, 17 years across solar PV, battery energy storage, EV charging and commercial power — designed to US codes (NEC/NFPA 70, Title 24) and California utility standards (PG&E, SCE, SDG&E).

Built three teams from the ground up: a 35-person renewables design branch, an India general-construction group delivering in Revit/BIM, and a dedicated renewables QC function.

Wrote the standards, review gates and training that made them repeatable — average design score at the QC gate moved from 8.0 to 9.4.

Escalation point for electrical technical problems across multiple business lines; fifteen years delivering on US hours from India.

Builds design-automation tooling in his own time — NEC calculation engines, single-line-diagram generators and code-audit tools — now being readied for residential designs, with commercial and utility-scale in development.

CORE COMPETENCIES

Design: Electrical systems design · Solar photovoltaic design (utility, C&I, rooftop, ground-mount, trackers) · Battery energy storage (BESS) · EV charging infrastructure · Power distribution · Lighting and emergency power design

Codes & Standards: NEC / NFPA 70 · Title 24 Parts 6 & 11 (CALGreen) · CBC / IBC · CFC / IFC · ADA · Utility interconnection (PG&E, SCE, SDG&E)

Analysis & Documentation: Single-line and three-line diagrams · Wiring schedules and conductor sizing · Voltage drop, ampacity and derating · Overcurrent protection and grounding · Short-circuit analysis, protective device coordination and arc-flash studies

Leadership & Quality: Design team building and scaling · Engineering standards development · Design quality control and review gates · Technical training and competency frameworks · Offshore design delivery

Automation & Tooling: Design automation · AI-assisted software development · CAD and BIM management

PROFESSIONAL EXPERIENCE

CBRE (Pearce Services Inc. / Pearce Services Global Pvt. Ltd.)

Director — General Construction, EV & Renewable Energy QC | Aug 2023 – Present | Agra, India (remote delivery for US operations)

Pearce Services acquired Natron Resources Inc. in Aug 2023; CBRE acquired Pearce Services in Oct 2025. Director title retained through both transactions.

- Own electrical design delivery across three portfolios — General Construction, EV charging, and Renewable Energy quality control — serving US commercial, industrial and utility-scale projects.
- Established the Renewable Energy QC function: authored the review checklist, trained a dedicated QC team, and instituted scoring gates that raised the average design QC score from 8.0 to 9.4.
- Learned commercial power distribution code, Revit and utility requirements from a standing start in late 2022 — at half-time, alongside running the renewables team — after the acquired firm's founding engineers left, then took General Construction full time in 2023.
- Absorbed the project portfolios of three engineers as they departed between 2023 and 2025, and moved delivery from 2D AutoCAD to Revit 3D/BIM.
- Technical escalation point for junior engineers and project managers, including teams outside direct management; escalate in turn to the licensed engineers where a stamp or PE judgment is required.
- Designed and maintain engineering systems still in daily use: code-compliant Project Tables backed by databases, standard starter files and CAD block libraries, QC checklists, and a maintained code and vendor-specification library.
- Author the company's electrical design standards and the hiring technical-test screens used to assess incoming design talent.
- Codes applied daily: NEC/NFPA 70, California Fire Code (IFC), Title 24 Part 6 Energy Code, Title 24 Part 11 CALGreen, California Building Code (IBC), ADA.

Natron Resources Inc. / RadSol Design Pvt. Ltd. / Natron Energy Pvt. Ltd.

Aug 2011 – Jul 2023 | Chandigarh, Agra & Jalandhar, India (remote delivery for US operations)

Director of Engineering | Apr 2017 – Jul 2023

- Established a new design office and built its renewable energy design team single-handedly to 35 engineers between 2020 and 2023 — half the company's total headcount at the time — on a low-cost talent model: direct college hiring, technical-test screening, and full in-house training.
- Authored the Designer Handbook and training manuals that made entry-level hires productive without external training spend.
- Led the technical training program for new engineers and developed department-wide NEC expertise in the process.

- Introduced EasyPower for electrical studies, bringing short-circuit and coordination analysis in-house.
- Ran structured mentorship and performance coaching, including weekend and after-hours training sessions delivered personally; multiple team members progressed into senior and lead roles.
- Built the team to run autonomously: delivery proceeded without daily oversight, escalating only clarifications and technical concerns — which is why the group transferred intact when I moved to General Construction.

Senior Project Manager | Jul 2013 – Apr 2017

- Created and maintained the project template set and document libraries used across the design department.
- Acted as cross-team technical resource for design problems and escalations.
- Designed battery energy storage systems from 2013, alongside the photovoltaic work.

Project Manager | Aug 2011 – Jun 2013

- Produced full CAD sheet sets for commercial, utility-scale and residential PV: site plans, array layouts, single-line and three-line diagrams, wire sizing, and structural details.
- Took ownership of the company's proprietary Excel electrical calculation engine used to generate NEC-compliant wiring schedules; added new calculation features and a warning system that flags any result in disagreement with code.

Across the Natron tenure: contributed to a team that designed 3,000+ projects across North America and international markets, from small commercial arrays to 40 MW utility-scale and single-axis tracker systems. Worked in PVsyst, SKM and EasyPower for simulation and electrical analysis.

NanoBright Solar Technologies Pvt. Ltd.

Assistant Electronics Engineer, R&D / CAD Designer | Jul 2009 – Aug 2011 | India

- Produced 2D and 3D CAD models for PV mounting structures, power plant layouts and wiring diagrams.
- Designed and installed solar PV systems, solar street lighting and solar blinkers.
- Developed LED billboard lighting products, prototypes and circuit test kits.

DESIGN AUTOMATION & ENGINEERING TOOLING

Personal engineering software projects, built in my own time to take repetitive work out of electrical design. Domain requirements, architecture and testing owned personally; code produced with AI-assisted development.

- **NEC Wiring Schedule Engine** — calculation engine covering the full NEC sizing chain: design current, temperature correction, conduit-fill adjustment, terminal temperature limits, conductor selection, overcurrent device sizing, equipment grounding conductor and voltage-drop verification. Validates every input, halts on missing data rather than assuming, and exports formatted multi-sheet Excel workbooks and print-ready PDFs. NEC tables held in one reviewed location so a new code edition is applied once department-wide.
- **Single-Line Diagram Generator** — generates complete, laid-out single-line diagrams directly from wiring-schedule data: equipment placed by level, conductors routed and tagged, note columns, string tables and title blocks populated. Writes standard DXF, splits large systems across sheets with cross-reference arrows, and includes an on-screen editor for engineering judgment before export.
- **Code Audit Engine** — rules engine applying PV-specific validation rules against design data.
- **Shared data contract** — single versioned JSON schema layer so the wiring schedule and the diagram derive from one equipment record, eliminating the drift between spreadsheet and drawing that drives submittal comment cycles.
- **Status** — working prototypes, not yet in production use. Residential designs first; commercial and utility-scale to follow as the remaining edge cases are resolved.

TECHNICAL SKILLS

CAD & BIM: Revit (electrical 3D modeling, BIM), AutoCAD 2D

Solar Simulation: PVsyst, Helioscope, Aurora Solar

Electrical Analysis: SKM PowerTools, EasyPower, ETAP

Lighting Design: AGi32, ElumTools (Revit photometric calculation)

Software Development: Python, FastAPI, Pydantic, SQLAlchemy, SQLite, openpyxl, ReportLab, ezdxf, pytest, React, TypeScript, Vite, Git

Data & Calculation: Advanced Microsoft Excel — database-driven electrical calculation workbooks and NEC-compliant wiring schedules

CERTIFICATIONS, AWARDS & EDUCATION

Certifications: Revit for Electrical Design Professional (LinkedIn, 2024) · Title 24 Part 6 Essentials, nonresidential and residential lighting (EnergyCodeAce, 2023) · Google AI Professional Certificate (Coursera, 2026) · Claude Code courses (Anthropic; Vanderbilt University, 2026) · AI Generalist Accelerator and AI for Business Leaders (Outskill, 2025–26) · leadership courses (Northwestern University; Google, 2026)

Pearce Proud Award, 2023 — for building and training the Agra, India design team and leading the company's transition from photovoltaics into general electrical construction, establishing a new division.

Diploma in Electronics, with Distinction — 2009