


PERSONAL INFORMATION

Mauricio González Agudelo

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Sex Male | Date of birth 26/10/1983 | Nationality Colombia

WORK EXPERIENCE
April 8th 2024– Currently

Electrical Specialist**Newfleds**

Project Terronera– Endeavour (Mexico)

- Engineering review (P&IDs, Single lines, control and instrumentation schemes)
- Electrical Construction, Pre-commissioning and Commissioning of the Process Plant (Crushers, Conveyors, GMD's, Thickeners, Tailing filtration, Water Treatment Plant)
- Supervision of Electrical Installation and commissioning of SAG and BALL mills provided by METSO (2.6 MW/ea – 4.6 kV, driven by TECO VFD's)
- Supervision of 13.2 kV distribution lines and Power plant and energization

Professional Expert Engineering & Construction – Electrical Coordinator**Enel Green Power**

Project PV La Loma (185 MWp) – La loma, Cesar

Project PV Guayepo (462,4 MWp) – Ponedera, Atlántico

- Construction of the project according to technical specifications, to meet safety requirements, ensure the quality of work and ensure compliance with the schedule
- On-site monitoring of contractors construction processes (BOP, Substation -Tline)
- Perform on-site documentary control of contractors
- Review the work procedures developed by the contractor
- Prepare daily reports on developments in the electrical area for the technical office

Photovoltaic Solar Energy

July 12th 2021 – April 3th 2021

Jan 1st 2018 – July 11th 2021

Independent Contractor

Photovoltaic Solar Energy engineering, consulting, construction and commissioning

Photovoltaic Solar Energy

Feb 2nd 2018 – May 2020

Electrical Specialist**Newfleds**

Project Buriticá – Continental Gold (Colombia - US\$ 1000 million)

- Electrical Construction, Pre-commissioning and Commissioning of the Process Plant (Crushers, Conveyors, GMD's, Thickeners, Merrill Crowe, Tailing filtration, Water Treatment Plant)
- Supervision of Electrical Installation and commissioning of SAG and BALL mills provided by METSO (2.6 MW/ea – 4.6 kV, driven by TMEIC VFD's)
- Supervision of 110 kV Power Line, 13.2 kV distribution lines and 110 kV/13.2 kV substation construction and energization

Mining and Metals

June 26th 2017 – Jan 25th 2018

Independent Contractor – Remote Work Trader**Solar Energy International (www.solarenergy.org)**

- Spanish Program Development support

Photovoltaic Solar Energy

Feb 5th 2017 – Aug 3rd 2017**External Consultor**
Solosolar

La Confianza Project 2,2 kW (Grid-direct) – Leticia, Amazonas, Colombia
 ▪ Installation and Commissioning

Photovoltaic Solar Energy**Solar Trust (www.solartrust.cl)**

Chulucanas Project 24 kW (Grid-direct) -Perú
 ▪ Installation and Commissioning
 Toconce Project (Several Stand alone systems of 1.2 kW each one) - Chile
 ▪ Support on Project Close-out

Photovoltaic Solar EnergyMay 22th 2014 – Feb 19th 2016**Electrical Engineer****Jacobs, Perú (Now Worley Parson)**

Expansion Toromocho Project (US\$ 1320 million)

- Develop Electrical and Control Design and Technical specifications for equipment as GMD's , motors for pumps, crusher, thickeners, electrical substations.
- Perform Electrical calculations including Ground Grid Systems, lighting, lightning, Cable Sizing
- Perform Electrical Studies for the project
- Develop Pre-commissioning, Commissioning and Turnover Execution Plan

Cerro Corona – Gold Fields - Protection Coordination Update – 13,8 kV Feeders

- Develop Electrical calculations
- Update One Line Diagrams.

Mining and Metals

Feb 24th 2014 – May 21th 2014

Commissioning Lead**Jacobs, Perú (Now Worley Parson)**

Akzo Nobel – Chilca Plant (US\$ 5 million)

- Commissioning and construction leading
- Management and schedule programming

Chemical Plant

Feb 3th 2014 – Feb 21st 2014

Commissioning Electrical Engineer**Jacobs, Chile (Now Worley Parson)**

Sierra Gorda Project (US\$ 4200 million)

- Electrical Commissioning Support for Mills, Flotation Cells, Crushers, tailings filters.

Mining and Metals

Jan 7th 2013 – July 8th 2013

Lead Electrical Preoperation Engineer**Fluor, Chile (www.fluor.com)**

Pascua – Lama Project (US\$ 8500 million)

- Precommissioning and Start up for Electrical Equipment for Crusher, GMD's, Flotation Cells, Tailings filters, Thickeners
- MCPlus (integrated construction and turnover management database system) implementation for pre-commissioning

Mining and Metals

Feb 15th 2011 – Aug 27th 2012

Lead Electrical Commissioning Engineer**Fluor, Chile (www.fluor.com)**

Escondida Ore Access Project (US\$ 554 million)

- Support and witness of FAT Test for electrical rooms, VDF's, Switchgear GIS (Siemens)
- Electrical Coordination Study review for all of the electrical system
- Develop Electrical Pre-commissioning Execution Plan
- Precommissioning and Start up for Electrical Equipment Low and Medium Voltage for Crusher and conveyors systems
- MCPPlus implementation for pre-commissioning

Mining and Metals

Jan 5th 2010 - Jan 8th 2011

Commissioning Electrical Engineer**Aker Solutions – Mining and Metals (Now Worley Parson)**

Esperanza Project (US\$ 2300 million)

- Electrical Coordination Study review for all of the electrical system
- Precommissioning and Start up for Electrical Equipment Low and Medium Voltage for substations, Crusher, conveyors, flotation cells, GMD's, thickeners, booster stations
- Supervision of electrical precommissioning of GMD's provided by ABB (SAG – 23 MW/23.2 kV, (2) BALL mills 19 MW/ea – 23.2 kV, Driven by ABB VFD's)
- Programming and testing for Distributed Control System
- Programming and testing Speed Drivers (ABB, Allen Bradley)

Mining and Metals

Feb 6th, 2009 - April 31st 2009

Commissioning Electrical Engineer**Coeur Mining, Mexico (www.Coeur.com)**

Palmarejo Project (US\$ 1000 million)

- Electrical Coordination Study review for all of the electrical system
- Commissioning and Start up for Electrical Equipment Low and Medium Voltage for substations, crusher, conveyors, GMD's, flotation cells, thickeners, refinery
- Supervision of electrical precommissioning of GMD's (driven by Siemens VFD's)
- Programming and testing for Distributed Control System
- Programming and testing Speed Drivers (Allen Bradley - PowerFlex)

Mining and Metals

June 2nd 2008 - Dec 23th 2008

Commissioning Electrical Engineer**Aker Solutions – Mining and Metals (Now Worley Parson)**

Cerro Corona Project (US\$ 750 million)

- Electrical Coordination Study review for all of the electrical system
- Commissioning and Start up for Electrical Equipment Low and Medium Voltage for substations, crusher, conveyors, GMD's, flotation cells, thickeners
- Supervision of electrical precommissioning of GMD's
- Programming and testing for Distributed Control System
- Programming and testing Speed Drivers (ABB , Allen Bradley)

Mining and Metals

Jan 29th 2007 - May 23th 2008

Project Electrical Engineer**Ingema S.A., Colombia (www.ingema-sa.com)**

San Cristobal Project (Bolivia) (US\$ 650 million)

- Electrical Coordination Study review for all of the electrical system
- Commissioning and Start up for Electrical Equipment Low and Medium Voltage for substations, crusher, conveyors, GMD's, flotation cells, thickeners, refinery
- Supervision of electrical precommissioning of GMD's provided by SIEMENS
- Programming and testing for Protection System (SIEMENS - SIPROTEC)
- Programming and testing for Distributed Control System
- Programming and testing Speed Drivers (ABB , Allen Bradley)

Chimbote Substation (Perú) (US\$ 0.5 million)

- Commissioning and Start up

Puerto Lopez Substation (Colombia) (US\$ 1 million)

- Programming and Functional Test for Control and Electrical Protection System

La Arboleda Substation (Bolivia) (US\$ 9 million)

- Commissioning and Start up for Yard Equipment and Electrical Protection System

Electrical Substations, Mining and Metals

July 19th 2004 – Jan 25th 2007

Design Engineer and Engineering Assistant**Ingeniería Especializada S.A.- IEB, Colombia (www.ieb.com.co)**

- Speed and voltage Regulator Design
- Electrical Study for Protection Systems
- Lightning Protection Systems Design
- Grounding Systems Design

Electrical Substations, Industrial Plant.

EDUCATION AND TRAINING

April 2022 – November 2022

MisionTIC 2022 – Training Program Software Development

UDEA – Universidad de Antioquia

February 2021

RETIE Generalities – Technical course

CIDET

- Generalities of Colombian Technical Regulation for Electrical Installations

November 2020

International Project Management PMI – PostgraduateCorporación Universitaria Asturias
Instituto Europeo de Posgrado

May 2016

SOLAR ENERGY INTERNATIONAL (SEI – Training)

Paonia, CO – USA

- Grid Direct Photovoltaic Systems (Residential and Commercial systems) – Design, Installation and Commissioning, Tools and Techniques for O&M
- Battery-Based Photovoltaic Systems- Design, Installation and Commissioning

Detailed Courses

- PV101 - Solar Training - Solar Electric Design and Installation (Grid-Direct)
- PV203 – Solar Training - PV System Fundamentals (Battery-Based)
- PV201L - Solar Training - Solar Electric Lab Week (Grid-Direct)
- PV301L - Solar Training - Solar Electric Lab Week (Battery-Based)

- PV202 - Solar Training - Advanced PV System Design and the NEC (Grid-Direct)
- MH101 - Micro-Hydro Training - Micro-Hydro Design & Installation
- PV303 – Advanced PV Multimode and Microgrid Design (Battery-Based)
- PV304 - Advanced PV Stand-alone System Design (Battery-Based)
- PV206 – Solar Business and Technical sales
- PV350L- PV systems – Tools & Techniques for O&M

November 2014 **ETAP 113 Power System Engineering I**

Lima, Perú

Topics

- One-Line Diagram, 3-Dimensional Databases, Data Exchange, Library Systems, Load Flow & Cable Sizing
- ANSI Short Circuit, Device Coordination, Protection & Sequence-of-Operation
- Arc Flash Hazard Analysis, Motor Acceleration Analysis & Parameter Estimation
- Underground Raceway Systems, Harmonics & Filter Sizing

March 2008 – April 2008

Automation, Instrumentation and Control – Siemens Postgraduate

Instituto Tecnológico Metropolitano, Medellín, Colombia

Topics

- PLC Siemens S7-200
- Motor control by Speed Drives and PLC
- Servomotors
- Automation Projects Management (Schedule, Budget, personal and equipment required)

January 2006 – December 2006

Automation Specialist

Universidad Pontificia Bolivariana, Medellín, Colombia

Profile

- Consultant in Automation projects
- Automatic Control designing for Industrial and Process Plants
- Sensor, actuators, equipment and tools selection for implementation in automatized process
- Technologic and professional mentoring.
- Representative and salesman of Services and equipment for automation Supplier companies

January 2000 – June 2005

Electrical Engineer

Universidad Nacional de Colombia, Medellín, Colombia

- Basic Engineering (Maths, Physics)
- Power Systems Evaluation and calculations
- Generation, Transmission and Distribution of Energy
- Electrical Substations, Transformers, Generators
- Control Systems for Automation
- Project evaluation, Control project, studies of Feasibility related with Energy, Power and Automation

PERSONAL SKILLS

Mother tongue(s) Spanish

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B2	B2	B1

Communication skills

- good communication skills gained through my experience as a commissioning engineer in direct contact with the client personal, HAZOP, constructability and pre-operations meetings.
- good teaching skills gained through my experience as Advanced Math Course Monitor in the university.

Organisational/managerial skills

- leadership (as Electrical Commissioning Lead, I was responsible for a team of 6 people)

Job-related skills

- good command of Safety Procedures (as Precommissioning engineer, I was responsible for LOTO (Lock Out Tag Out) procedure)
- good command of commissioning and start-up stages (as Commissioning Engineer, I was responsible for development of procedures, including electrical rooms energization, motor and equipment functional tests; execution of electrical and control pre-commissioning and commissioning activities for mining projects).
- good command of electrical test (as Project Electrical engineer, I was responsible for electrical test of yard equipment and protection Relay of Electrical substations)
- good command of electrical calculations (currently responsible for grounding, lighting, lightning, protection systems calculations of a Mining project)
- good command of design, construction and commissioning of photovoltaic systems such as grid-tied, stand alone and multimode systems (as Electrical Engineer in solar energy training and participating in solar projects in Colombia, Peru and Chile)

Computer skills

- good command of Microsoft Office™ tools (Word processor, spread sheet, presentation software)
- good command of Power Systems Software and Lighting Software gained as a designer engineer.
- good command of Omicron Equipent CMC256, CPC 100 gained as a Project engineer of Electrical substations.
- good command of Relay configuration, programming and test for brands such as Siemens (DIGSI), General Electric-Multilin (Enervista), Schneider-SEPAM (SFT2841), EATON gained as Project Engineer and precommissioning and commissioning electrical engineer of Mining Plants and electrical substations

Driving licence

- B1 (Colombia)

ADDITIONAL INFORMATION

Publication

- “Modelizado y control de un motogenerador” (*Modeling and Control of a Motogenerator*), Politécnica Magazine, 2007, Medellín
- “Pruebas de planta y sintonía para un controlador utilizado para medir la velocidad del viento dentro de un túnel” (*Tuning and Plant test for a controller used to measure the wind speed inside of a tunnel*), Politécnica Magazine, 2007, Medellín

Conferences

- Renewable energy and Mining Worldwide Workshop. II International Summit of Efficient and Renewable Energy for Mining, Lima, Perú, November 2016
- 2nd International Conference of Electrical and electronic engineering, II CIIEE, Universidad Nacional de Colombia, Bogotá, March 2003
- First Week Academics of Control Engineering, Universidad Nacional de Colombia, Medellín, April 2002
- VII Workshop Latin-American ETAP 2014, Lima , November 17th - 20th, 2014

Honours and awards

- Honour Grade in Electrical Engineering, Universidad Nacional de Colombia, 2005
- Photovoltaic Entry Level Exam - Passing Score Achievement – NABCEP
- Residential and Commercial Photovoltaic Systems Certificate – SEI, 2016
- Battery-based Photovoltaic Systems Certificate -SEI, 2016