

Aimen Berkane

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Instrumentation Engineer

Siemens PLC & SCADA Integration | Instrument Calibration & Maintenance

Technically proven and detail-driven Instrument Engineer with hands-on experience in PLC programming (Siemens – TIA Portal, Step 7), instrument calibration, and SCADA/DCS system integration, developed through impactful internships at Sonatrach and SNC LAVALIN. Successfully re-engineered an air dryer's control system—optimizing PLC logic and HMI interface—to resolve backpressure issues and boost air quality output by 20%. Independently executed loop checks, valve maintenance, and HART-based calibration, improving measurement accuracy and reducing downtime during plant testing by 15%. Adept in reading P&IDs, interpreting wiring diagrams, and performing preventive maintenance in compliance with industrial safety standards (ISA, IEC). Known for structured diagnostic thinking, rigorous attention to detail, and collaborative execution under pressure. Trilingual in Arabic, English, and French, with a fast-learning mindset toward evolving industrial protocols and technologies.

WORK EXPERIENCE

Sonatrach - *GL3Z Liquefaction Complex, Arzew, Algeria*

20/03/2022 – 31/03/2022

Instrumentation Intern

Supported instrumentation and control activities during scheduled maintenance at a major LNG production unit.

- Improved signal reliability by 15% through hands-on calibration of pressure and flow transmitters using HART communicator and multimeter.
- Performed loop checks and signal tracing between field devices and DCS panels to validate post-maintenance integrity.
- Analyzed P&IDs and wiring schematics to support fault diagnostics under supervision.
- Gained exposure to large-scale instrumentation workflows and commissioning support practices.

SNC Lavalin - *Hadjret En Nouss Power Plant, Tipaza, Algeria*

26/03/2023 – 06/04/2023

Instrumentation Intern

Supported the commissioning and control validation of the cooling water system, ensuring compliance with IEC 61511 safety standards.

- Simulated ESD logic using TIA Portal and Step 7 for cooling water flow and temperature faults, ensuring proper fail-safe shutdown and alarm responses.
- Suggested deployment of Triconex triple-redundant logic controller to improve fault tolerance—recommendation considered during system risk review.

- Configured alarm thresholds for temperature and pressure to ensure optimal cooling system performance and prevent system failure.

Sonatrach - *GL1K Liquefaction Complex, Skikda, Algeria*

20/02/2024 – 20/03/2024

Instrumentation Intern

Led the control system redesign for the compressed air dryer unit, resolving air quality degradation and control instability—work later formalized into an engineering thesis.

- Diagnosed and resolved backpressure and synchronization issues in air dryer unit, identifying faulty check valves and cam timer defects.
- Designed and implemented a new pneumatic valve control system using Siemens PLCs, with logic programmed in TIA Portal and fully integrated into the SCADA/HMI interface (WinCC).
- Programmed fail-safe shutdown logic and alarm responses for ESD scenarios, enhancing safety compliance with IEC 61511 standards.
- Boosted compressed air quality by 20%, and reducing system downtime by 15%.

EDUCATION

University of Hydrocarbons and Chemistry - *Boumerdes, Algeria*

Master's Degree – Instrumentation in the Petrochemical Industry, July 2024

Bachelor's Degree – Automation of Industrial Processes: Automatic Control, July 2022

PROFESSIONAL SKILLS

- Proficient in Siemens TIA Portal and Step 7 for PLC logic, simulation, and diagnostics.
- Experienced in SCADA/HMI integration, ESD alarm setup, and real-time monitoring.
- Skilled in reading P&IDs, loop diagrams, and ISA/IEC 61511-compliant docs.
- Familiar with HART communicators, multimeters, and pneumatic valve calibration.
- Strong communicator and team player with focus on safety, documentation, and reliability.

LANGUAGE COMPETENCIES

- Arabic: Native proficiency in speaking, reading, and writing.
- English: Fluent in speaking, reading, and writing, with professional technical experience.
- French: Professional in speaking, reading, and writing, with strong technical terminology.