

## Mohamed Tawfik

### Instructor

#### Work Experience:

OT & Cybersecurity | ICSS & Functional Safety | Instrumentation Engineer .

PETROBEL (Belayim Petroleum Company - ENI) - Zohr Gas Field

August 2017 - Present

OT & Cybersecurity Engineer.

- Directed the cybersecurity strategy for the Integrated Control and Safety System (ICSS) at Zohr gas field, ensuring robust protection of critical OT systems and maintaining operational resilience.
  - Developed and managed multi-tier network architectures and firewall configurations, while designing tailored OT security solutions to address real-time risks and improve operational safety .
  - Applied network segmentation strategies in alignment with IEC 62443 to enhance asset isolation and reduce lateral threat movement in industrial environments.
  - Designed and implemented security zones and conduits architecture to control inter-zone communications and enforce cybersecurity policies as per IEC 62443 guidelines
  - Conducted cybersecurity risk assessments for IACS systems to identify vulnerabilities, assign security levels, and develop appropriate mitigation plans.
  - Developed and maintained an incident response plan tailored for industrial systems, ensuring rapid detection, containment, and recovery from cyber incidents.
  - Expert in OT-IT convergence, delivering secure, end-to-end integration from field instrumentation to enterprise boundaries, and architecting defense-in-depth strategies that protect critical assets across the full industrial network stack.
  - Protected critical industrial infrastructure by deploying unidirectional gateways, ensuring operational data could be exported for monitoring without exposing OT networks to IT-side threats .
  - Managed Nozomi Networks for threat detection, network visibility, and anomaly monitoring.
  - Administered domain controllers (DC), GPOs, WSUS, and EPO client policies to ensure cybersecurity compliance.
  - Diagnose and resolve technical issues on operator and engineering workstations, enhancing system performance and maximizing uptime and reliability.
  - Maintained system backups and recovery plans via NAS servers.
  - Configured and managed NTP for network time synchronization, maintaining system consistency and supporting security operations.
  - Optimized remote access through terminal servers and RDP management.
  - skilled in securing OT environments in oil and gas, utilities, and manufacturing, utilizing robust cybersecurity protocols and incident response strategies to ensure operational safety and reliability.
  - Developed and enforced OT cybersecurity policies with cross-functional teams, promoting a culture of security awareness and risk management across the organization.
  - Good experience in risk management, vulnerability assessments, and security audits for OT systems, improving the security posture of critical assets.
  - Managed and optimized SIEM and SOAR solutions to monitor security events, detect threats, and reduce false positives, collaborating with SOC and incident response teams for rapid threat mitigation.
  - Utilized NPM tools to optimize network performance, troubleshoot issues, and deliver performance reports, ensuring reliable OT system operations.
  - Addressed OT-specific cybersecurity challenges such as patch management, device authentication, and securing legacy systems, maintaining control system integrity.
- ICSS & Functional Safety Engineer.
- Contributed to the engineering and installation of Zohr control and safety system upgrades, including

Foxboro Evo DCS and Triconex ESD systems.

- Reviewed and implemented new versions of CS and CCS software related to control platform to ensure system enhancements and stability.
- Managed the SIL verification process and conducted Site Acceptance Tests (SAT), Factory Acceptance Tests (FAT), and Cause & Effect (C&E) tests for safety-critical systems
- Supervised the installation, commissioning, and acceptance of ICSS components, ensuring adherence to project specifications and standards.
- Practical Experience in application of IEC 61511 and of alarm management life cycle.
- Knowledge of control of work principles, risk assessment, and management of change.
- Ensure system redundancy and fail-safe mechanisms to enhance safety.
- Monitor system status and check faulty cards and modules (System survey).
- Support operation, maintenance, and upgrades systems in case of improvement.
- MOC implementation and provide red marked document when has been implemented.
- Review ICSS FDS document.
- Troubleshooting PLC systems (S7400/300), ensuring continuous system improvement and reliability.
- Practical experience HIMAX safety instrumented system for BMS .
- Practical experience with SAP program.

Instrumentation Engineer.

- Review of engineering drawings and vendor documents VDRL.
- Commissioned new project phases, including loop tests, control narrative tests, and cause-and-effect tests, to ensure operational readiness.
- Enhanced system performance through proactive tuning and optimization of PID control loops for critical processes.
- preparation of loop drawings/ hookup drawings/ cable routing for modifications and upgrades.
- Check and investigate with Engineering teams all new expansions in Zohr gas field.
- predictive maintenance and calibration of shutdown valves.
- predictive maintenance and calibration of control valves.
- predictive maintenance and calibration of instrument equipment: pressure, level, flow and temperature transmitters.
- Knowledge of offshore system architecture and Subsea control system.
- Experience in industrial communication standards: HART, Fieldbus, and Modbus.

Commissioning Telecommunication Engineer

PETROBEL (Belayim Petroleum Company - ENI) - Zohr Gas Field

August 2017 - 2019

- Installed and maintained CCTV, access control, TETRA, PAGA, and broadband communication systems.
- Supported ICS team with control, safety, and cybersecurity network installations.
- Installed microwave links between onshore and offshore sites.
- Conducted FAT, SAT, and OTP for telecom systems and expansions.
- Led telecom commissioning activities and handed over documentation to operations.
- Responsible for Cyber security system dedicated to ICSS system in Zohr gas field.
- laying fiber cables inside zohr buildings and between control rooms.
- Knowledge of multi-tier architectures and firewall management.
- Hand over commission check sheets and site acceptance reports to the Operation team.

Network Engineer

Etisalat ISP

March 2015 - August 2017

- Investigate and troubleshoot all ISP network components.
- Check all core network routers and switches configuration and upgrade the old devices.
- Responsible for installation and maintenance Huawei equipment for 2G&3G and ISP network components