PROJECT CASE STUDY

Modernization of SAMIR Refinery — Mohammedia, Morocco

Location	Mohammedia, Morocco
End Client	SAMIR (Société Anonyme Marocaine de l'Industrie du Raffinage)
In Association With	Khatib & Alami
Duration	3 years
Role	Construction Supervision, Operational Philosophy Development, Engineering Support
Scope	Modernization of tank farms, loading and unloading facilities, and firefighting system; rehabilitation and new construction of 27 storage tanks (up to 45,000 m^3); operational philosophy for oil movements and tank utilisation; updated Process Flow Diagrams

PROJECT BACKGROUND

The Mohammedia refinery and terminal, operated by SAMIR, is one of the principal downstream facilities on Morocco's Atlantic coast and a strategic node in the country's petroleum supply chain. The modernization programme targeted three of the most operationally critical areas of the site: the tank farm, the loading and unloading facilities, and the firefighting system. The combined objective was to bring storage, product transfer, and emergency response infrastructure to current international standards while expanding operational capacity and improving overall facility safety.

SCOPE OF SERVICES

• **Construction Supervision — Storage Tanks** — full construction supervision of the rehabilitation and new construction of 27 storage tanks of different sizes and types, with individual tank capacities up to 45,000 m^3.

• **Loading and Unloading Facilities** — supervision of the modernization works on the product loading and unloading infrastructure, raising throughput capacity and operational efficiency.

• **Firefighting System** — supervision of the upgrade of the refinery firefighting infrastructure to meet international safety standards.

• **Operational Philosophy — Oil Movements and Product Transfer** — prepared the operational philosophy for upgrading oil movements across the site, with particular focus on preventing product contamination during transfer. The work demonstrated that minor, well-targeted modifications can deliver substantial improvements in product quality — especially for sensitive products such as low-sulfur grades, where cross-contamination has a direct commercial and compliance impact.

• **Operational Philosophy — Storage Tank Utilisation** — prepared the operational philosophy for optimal usage of the storage tank fleet for refined products, accompanied by recommended piping modifications to support the new operating logic.

• **Process Flow Diagrams** — updated the Process Flow Diagrams of the affected systems to reflect the new operational philosophy and the recommended piping modifications.

• **Engineering Support** — on-site engineering coordination across the multidisciplinary scope, ensuring compliance with the design, applicable codes, and refinery operational constraints

throughout the works.

KEY OUTCOMES

• **27 Storage Tanks Delivered** — supervised the rehabilitation and new construction of 27 storage tanks of varying sizes and types, with a combined storage capacity exceeding 500,000 m^3 across the modernized tank farm.

• **Firefighting Upgraded to International Standards** — brought the facility firefighting infrastructure into line with current international safety standards, materially enhancing the protection of personnel, assets, and surrounding environment.

• **Product Quality Protection** — the new operational philosophy for oil movements, implemented through targeted piping and procedural modifications, prevented product contamination during transfer — with the strongest impact on sensitive products such as low-sulfur grades, where contamination directly affects commercial value and compliance.

• **Operational Throughput Improved** — modernized loading and unloading facilities delivered higher throughput and operational efficiency, supporting the refinery's wider production and dispatch programme.

• **Multi-Year On-Site Engineering Presence** — sustained construction supervision and engineering coordination across the three-year programme, ensuring continuity of technical oversight from start to handover.

DISCIPLINES COVERED

Storage Tank Engineering • Mechanical • Piping • Process • Operational Philosophy and Procedures • Process Flow Diagrams • Firefighting Systems • Electrical and Instrumentation • Construction Supervision • Refinery Operations Coordination

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