

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Evaluation of Safety Instrumented System (SIS) existing plant I and II of Metor	Safety Instrumented System (SIS)	Metanol de Oriente, METOR, S.A.	Venezuela	2014	Oil & Gas
Emergency Shutdown System HIMA's PLC of MVCII Plant in Ana María Campos Petrochemical Complex.	Emergency Shutdown System Technical Assistance	Pequiven	Venezuela	2014	Oil & Gas
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	several	Venezuela	2014	Oil & Gas/ Food & Beverage/Consultant company
Diesel System HAZOP-LOPA Study and Consequence Analysis of Pepsi Cola Power Generation Plant in Barcelona.	HAZOP-LOPA Study and Consequence Analysis.	Pepsi Cola Venezuela, C.A.	Venezuela	2014	Food & Beverage
Diesel System Consequence Analysis, Equipment Separation Evaluation, Area Classification, Coverage Analysis and fire detectors mapping of Pepsi Cola Power Generation Plant in Villa de Cura.	Consequence Analysis.	Pepsi Cola Venezuela, C.A.	Venezuela	2013	Food & Beverage
HAZOP-LOPA Study of Pepsi Cola Emergency Power Generation Plant in Villa de Cura	HAZOP-LOPA Study	Pepsi Cola Venezuela, C.A.	Venezuela	2014	Food & Beverage
Chemical Injection Packages Integration and Commissioning Services and / or API Pit in the San Joaquin Operation Center COSJ	Support Services for Speed drivers integration of the Chemical Packages	PDVSA	Venezuela	2014	Oil & Gas
Province Plant F & G System Sensors Mapping Design	System Sensors Mapping Design	Instrumentos y Controles	Colombia	2014	Oil & Gas
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	PDVSA	Venezuela	2014	Oil & Gas
Integration of F & G Systems, SIS, UCS / CPC, IT Networks, CCTVP, Operations Centre and Collection System Campo Santa Rosa - Anaco Gas Project (PGA)	Detail Engineering, Application Development, Database and Deployment, System Configuration, Integration of System, Procurement of Materials, Assembly, Construction, Factory Testing, Site Testing, Training, Startup and Commissioning.	PDVSA/Odebrecht	Venezuela	2014	Oil & Gas
Basic and Detail for Electric System Adequacy and Firefighting Borburata Terminal Engineering.	Quantitative Risk Analysis (QRA)	TIVENCA Ingenieros Consultores	Venezuela	2014	Oil & Gas
Safety Engineering area Training Services, SIL verification and SIS validation for workers in the industrial safety management and occupational health (SIHO) PDVSA Gas, SA, 2014 period.	Training	PDVSA	Venezuela	2014	Oil & Gas
Clause Plant Improver virtual analyzers	Pilot - Dynamic Simulation.	PDVSA	Venezuela	2014	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Clause Plant Improver virtual analyzers	Pilot - Static Simulation. .	PDVSA	Venezuela	2014	Oil & Gas
Tia Juana III Compression Plant Operators Training Simulators. Phase II	Training Simulators	PDVSA	Venezuela	2014	Oil & Gas
Tia Juana III Compression Plant Operators Training Simulators. Phase I	Training Simulators	PDVSA	Venezuela	2014	Oil & Gas
CPO-09 Block Development, Conceptual Engineering.	Study (HAZID)	Instrumentos y Controles	Colombia	2014	Oil & Gas
Centrifugal compressors control diagram revision, diagnostic, and recommendations of Santa Inés Battle refinery project	Compression Control review, diagnostic and programming.	PDVSA	Venezuela	2014	Refination
1 Butene and Linear POLINTER's Plants, Detail Engineering	Quantitative Risk Analysis (QRA)	Nones y Nones C.A.	Venezuela	2014	Oil & Gas
Caño South-East Block Surface Facilities, Detail Engineering	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	Instrumentos y Controles	Colombia	2014	Oil & Gas
HIMatrix PLC turbine speed, compressor Antisurge, sequential turbocompresor configurations, Emergency Shutdown and F&G logics. Compatibility Installation, commissioning and startup.	Installation, tests and start up: HIMatrix PLC turbine speed, compressor Antisurge, sequential turbocompresor configurations, Emergency Shutdown and F&G logics. Compatibility Installation, commissioning and startup.	PDVSA / HIMA	Venezuela	2014	Oil & Gas
Detailed engineering for Carenero Distribution Plant truck loading rack adequacy / expansion	Study SIL/SIS	Incostas	Venezuela	2014	Oil & Gas
El Palito Refinery Expansion project, 3200 and 3300 Units	Study HAZOP-SIL	Y & V Ingeniería y Construcción	Venezuela	2014	Oil & Gas
Basic Engineering P-135 New Stations (Paez, Chiquillos & La Granjita) and Existing - OCENSA	Study HAZOP-LOPA	Instrumentos y Controles	Colombia	2014	Oil & Gas
Group 1 main equipment eplacement project (Puerto Salgar, Mariquita, Herveo & Fresno) - ODECA	Study HAZOP-SIL LOPA	Instrumentos y Controles	Colombia	2014	Oil & Gas
Project CTPO	Hazard Identification Analysis Study (HAZID)	Nones y Nones C.A.	Venezuela	2014	Oil & Gas
Truck loading farm enlargement at GNLQ	Fire & Gas Instruments location study Update.	Maxcontrol S.p.A.	Chile	2014	Oil & Gas
Accident Investigation in Province Plant	IYCSA Assistance - Accident Investigation Province Plant	Instrumentos y Controles	Colombia	2014	Oil & Gas
New EPC Isomerization Unit - Santa Cruz	Study HAZOP /Determination SIL of Processes & study HAZOP and Determination of SIL of package units	TECNICAS REUNIDAS GROUP	Bolivia	2014	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
New EPC Isomerization Unit - Santa Cruz	Quantitative Risk Analysis (QRA)	TECNICAS REUNIDAS GROUP	Bolivia	2014	Oil & Gas
Hazard and Operability Study (HAZOP) for the Ground State	Hazard and Operability Study (HAZOP)	Instrumentos y Controles	Colombia	2014	Oil & Gas
Diluent duct 20" increased production in Jose-Pto-Morichal.	Safety Integrity Level Study (SIL) and Safety Instrumented System (SIS)	Veninco	Venezuela	2014	Oil & Gas
New Compressor Plant Barúa VII Installation, PDVSA Petroquiriquire	Safety Integrity Level Study (SIL) and Safety Instrumented System (SIS)	TIVENCA Ingenieros Consultores	Venezuela	2014	Oil & Gas
New Catalytic Reforming Unit (NURC), Gualberto Villarroel Refinery, Cochabamba, Bolivia	Hazard and Operability Study (HAZOP) and Safety Integrity Level Study (SIL)	TECNICAS REUNIDAS GROUP	Cochabamba - Bolivia	2014	Oil & Gas
New catalytic reforming unit (NURC)	Quantitative Risk Analysis (QRA)	TECNICAS REUNIDAS GROUP	Cochabamba - Bolivia	2013	Oil & Gas
Ecopetrol Galán Field, Collection System and Stations	Hazard and Operability Study (HAZOP)	Instrumentos y Controles	Colombia	2013	Oil & Gas
Nitric Acid Plant for Fertilizers Production of Colombian Compost SA - ABOCOL	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	Instrumentos y Controles	Colombia	2013	Oil & Gas
Transportation System Design, using Multiphase Pumps for UBCP Cacique Chaima, Area between fields Cerro Negro- Morichal District	Risk Analysis "What if" type	Cepica	Venezuela	2013	Oil & Gas
El Palito Refinery existing units Expansion.	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2013	Refination
PDVSA Gas Anaco HIMA's Spare Parts	Sales of hardware HIMA HIQUAD	Bariven, S.A.- C/O. PDVSA Services, B.V.	Venezuela	2013	Oil & Gas
ALBA GAS El Salvador	Quantitative Risk Analysis (QRA)	IDS Consultores	El Salvador	2013	Oil & Gas
ESD and F&G Applications Development & Field Assistance for the 8 TMC of PDVSA AIT Occidente	ESD and F&G Applications Development & Field Assistance for the 8 TMC of PDVSA AIT Occidente	PDVSDA / HIMA	Venezuela	2013	Oil & Gas
ALBA GAS El Salvador	Safety Integrity Level Study (SIL)	IDS Consultores	El Salvador	2013	Oil & Gas
ALBA GAS El Salvador	Hazard and Operability Study (HAZOP)	IDS Consultores	El Salvador	2013	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Certified Specialist Assistance for SIL Validation of Margarita Field Project Phase II	Safety Integrity Level Study (SIL)	TECNICAS REUNIDAS Initec Plantas Industriales S.A.U.	Bolivia	2013	Oil & Gas
Ecopetrol National Bridge Pumping Station.	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	Instrumentos y Controles	Colombia	2013	Oil & Gas
Port Bay oil storage and liquid bulk terminal	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	Instrumentos y Controles	Colombia	2013	Oil & Gas
Software of the fuel control system: configuration, implementation and start up for the turbo pump in ULE 4 pumping stations. de la turbo bomba de las estaciones de bombeo ULE 4.	Configuration, implementation and start up	PDVSA	Venezuela	2013	Oil & Gas
Assessment, diagnostic and system security audit & Control Platform 4F	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	PDVSA	Venezuela	2013	Oil & Gas
Plant compressor Cacique Sorocaïma	Safety Integrity Level Study (SIL) and Safety Instrumented System (SIS)	Consultores Occidentales, S.A.	Venezuela	2013	Petróleo y Gas
Assessment, diagnostic and system security audit & Control Platform 4F	Hazard and Operability Study (HAZOP) & review of control strategies.	PDVSA	Venezuela	2013	Oil & Gas
Programmable logic controllers	Sales	PDVSA	Venezuela	2013	Oil & Gas
Detail Engineering for Integrated Monitoring and Control System of COSR and Seasons Collection.	Review, update and completion of detail engineering products	PDVSA/Odebrecht	Venezuela	2013	Oil & Gas
Technical Assistance and National Service with Hand Work for Pre-commissioning, Commissioning and Start of Turbochargers, Turbo Generator and Fuel Gas Systems Nitrogen and NPCA.	Service and support with domestic labor for testing, integration and connection of scheduled automatizadfos systems associated altagracias New Compressor Plant (NPCA).	PDVSA	Venezuela	2013	Oil & Gas
Alcohols of Uruguay - Bioethanol PAYSANDÜ Plant	Hazard and Operability Study (HAZOP)	UTE Abener Teyma Paysandú	Uruguay	2013	Oil & Gas
Batalla de Santa Inés Refinery Phase I Project	Safety Integrity Level Study (SIL) and Layers of Protection Analysis (LOPA)	Foster Wheeler Iberia	España	2013	Refination
Fire Detection System Fuel Distribution Plant Dominica Island	Detail Engineering, Application Development, Systems Configuration, Procurement, Assembly, Testing Factory, Site Testing, Commissioning and Start-up for the fire detection system.	PDV CARIBE	Dominican Republic	2013	Oil & Gas
Replacement of safety shutdown system Centralization of LPG controls	Safety Integrity Level Study (SIL)	Isla Refinery Curacao B.V./ PDVSA	Curacao	2013	Oil & Gas
Replacement of safety shutdown system Centralization of LPG controls	Hazard and Operability Study (HAZOP)	Isla Refinery Curacao B.V./ PDVSA	Curacao	2013	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Replacement of safety shutdown system DL3	Safety Integrity Level Study (SIL)	Isla Refinery Curacao B.V./ PDVSA	Curacao	2013	Oil & Gas
Replacement of safety shutdown system DL3	Hazard and Operability Study (HAZOP)	Isla Refinery Curacao B.V./ PDVSA	Curacao	2013	Oil & Gas
Sentinel Software Acquisition System Turbine Speed Control ULE - Amuay	Licensing Acquisition Control Algorithms for Control System Turbine speed ULE - Amuay	PDVSA	Venezuela	2013	Oil & Gas
Control System Replacement RR ENTRONIC FT-100 in West PDVSA facilities	Programming, Integration, Logic Control, Testing Factory, Site Testing, Training and Commissioning and Start to Bachaquero Compression Plants Bachaquero 1, Bachaquero 2 y Centrolago 1.	PDVSA	Venezuela	2013	Oil & Gas
Study Integrity Level (SIL) and Layer of Protection Analysis (LOPA) for the project Bicentennial	Study of Safety Integrity Level (SIL) by Protective Coatings Analysis (LOPA), development of SRS and SIL verification for Bicentennial Project	Bicentenario / I&C	Colombia	2013	Oil & Gas
Combustible / Toxic Gas detection system for Chichimene's station expansion	Safety Integrity Level Study (SIL)	PDVSA	Venezuela	2013	Oil & Gas
PIGAP II Plant Valve Detour System	Hazard and Operability Study (HAZOP), Safety Integrity Level Study (SIL), and Layers of Protection Analysis (LOPA)	PDVSA	Venezuela	2012	Oil & Gas
Basic and Detail Engineering for Infrastructure and Early Production Facilities (PT30/50)	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2013	Oil & Gas
Basic and Detail Engineering for Early Production Facilities and Infrastructure (PT30/50)	Safety Integrity Level Study (SIL)	PDVSA	Venezuela	2013	Oil & Gas
Risk and Safety Engineering Combined Heat and Power Plant Dead Sea (Israel) (HAZID, HAZCON, HAZOP & FMEA)	HAZID, HAZCON, HAZOP & FMEA	ABEINSA EPC	Israel	2013	Oil & Gas
Risk Assessment for Bio-Ethanol Paysandú Plant Distribution Analysis of ALUR plant (Alcohols Uruguay).	Consequence Analysis.	UTE Abener Teyma Paysandú	Uruguay	2013	Oil & Gas
New South Cluster Area P7, Surface Facilities Detail engineering	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2013	Oil & Gas
Specialized Support Services for Gas detection automation in the engine room of Bodegas Pomar Plant, Carora, Edo. Lara.	Item instrumentation and applications, materials procurement and operations and maintenance training course.	Cerveceria POLAR, C.A.	Venezuela	2013	Food & Beverage
Specialized Support Services for Gas detection automation in the engine room of plant Polar Los Cortijos Caracas	Item instrumentation and applications, materials procurement and operations and maintenance training course and coaxial cable connection NH3	Cerveceria POLAR, C.A.	Venezuela	2013	Food & Beverage
Specialized Support Services for Gas detection automation in the engine room Plant Polar San Joaquín Edo. Carabobo	Item instrumentation and applications, materials procurement and operations and maintenance training course.	Cerveceria POLAR, C.A.	Venezuela	2013	Food & Beverage

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Specialized Support Services for Gas detection automation in the engine room Plant Polar Modelo Maracaibo	Item instrumentation and applications, materials procurement and operations and maintenance training course.	Cerveceria POLAR, C.A.	Venezuela	2013	Food & Beverage
Specialized Support Services for Gas detection automation in the engine room Plant Polar Oriente Barcelona	Item instrumentation and applications, materials procurement and operations and maintenance training course.	Cerveceria POLAR, C.A.	Venezuela	2013	Food & Beverage
Fire and Gas System detectors location study, for air injection plant Chichimene field	Detectors Location Study	PDVSA	Venezuela	2013	Oil & Gas
Multistage Comp. Train Phase II Dynamic Simulation	Multistage Compression Train Phase II Dynamic Simulation	PDVSA	Venezuela	2013	Oil & Gas
Comp. Train and Steam Turbine Phase I ,Steady State Simulation	Compression Train and Steam Turbine Phase I ,Steady State Simulation	PDVSA	Venezuela	2013	Oil & Gas
LNG Fract. Train Phase I Dynamic Simulation	LNG Fractionation. Train Phase I Dynamic Simulation	PDVSA	Venezuela	2013	Oil & Gas
LNG Fract. Train Phase I ,Steady State Simulation	LNG Fractionation Train Phase I ,Steady State Simulation	PDVSA	Venezuela	2013	Oil & Gas
Catalytic Ref. Unit Phase I Dynamic Simulation	Catalytic Refining Unit Phase I Dynamic Simulation	PDVSA	Venezuela	2013	Oil & Gas
Functional Safety Bicentenary Oil pipeline	Functional Safety Bicentenary Oil pipeline	Bicentenario / I & C	Colombia	2013	Oil & Gas
Basic and Detail Engineering Pipeline The Crescent - Gulf of Morrosquillo - TIPIEL	Safety Integrity Level Study (SIL) LOPA	Tipiel / I & C	Colombia	2012	Oil & Gas
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	PDVSA/Inelectra	Venezuela	2012	Oil & Gas
Basic and Detail Engineering Pipeline The Crescent - Gulf of Morrosquillo - TIPIEL	Hazard and Operability Study (HAZOP)	Tipiel / I & C	Colombia	2012	Oil & Gas
Combustible Gas Control and Anti surge Algorithms Licenses acquisition for Bachaquero 1 mini plants.	Combustible Gas Control and Anti surge Algorithms Licenses acquisition for Bachaquero 1 mini plants.	PDVSA	Venezuela	2012	Oil & Gas
Fire and Gas system of GRB Alkylation	Detectors study location for Fire and Gas system of GRB Alkylation	Tipiel / I & C	Colombia	2011	Oil & Gas
High Pressure Gas Injection Plant construction, PIGAP Pirital-IV field, PIGAP IV Plant	Safety Integrity Level Study (SIL) and Safety Instrumented System (SIS)	Asesores Técnicos Corporativos, SA (ATEC)	Venezuela	2012	Oil & Gas
Adequacy of EC1 and EC2	Hazard and Operability Study (HAZOP)	Tipiel / I & C	Colombia	2012	Oil & Gas
Solar Power Plant at Pokhran (India)	Hazard and Operability Study (HAZOP)	Corporate Ispat Alloys Ltd,	Israel	2012	Solar energy

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Integration Rockwell - Coester / Santa Rosa	Testing and diagnostic work in FF communication with actuators Coaster Rockwell Linking Devices.	Conind de Venezuela, S.A.	Venezuela	2012	Oil & Gas
DCS-ESD-FGDS systems migration for PDVSA's Altgracia Gas Compression Plant	Hazard and Operability Study (HAZOP), Safety Integrity Level Study (SIL), and Quantitative Risk Analysis (QRA)	AB Proyectos e Inspecciones, C.A.	Venezuela	2012	Oil & Gas
Pipeline Sectioning stretch Sutamarchán -Apiay	Hazard and Operability Study (HAZOP), and Safety Integrity Level Study (SIL).	Ecopetro/I & C	Colombia	2012	Oil & Gas
Riohacha Reactivation	SRS (Initial and Detailed) and SIL Verification for Riohacha Reactivation Project, SRS Development (Initial and Detailed) and SIL Verification VCP Project SIL Proyecto VCP	Ecopetro/I & C	Venezuela	2012	Oil & Gas
Turbine # 1's fuel gas control system replacement in Pajuizal pumping station.	Fuel Gas Supply License TSC SENTINEL, Engineering, Programming & Configuration, factory acceptance test (FAT) and Start & Commissioning.	PDVSA	Venezuela	2012	Oil & Gas
Supply and Construction of Automated System for Custody Transfer and Early Production Management of Block Junin 10.	Technical Assistance and Supervision for Installation, Testing Factory (FAT), Site Testing (SAT), and Start Training and Commissioning.	PDVSA	Venezuela	2012	Oil & Gas
Three Control Systems to Replace the Foxboro DCS in the TJ3 Compression Plant - PDVSA Occidente	Technical Assistance and Supervision for Installation, Testing Factory (FAT), Site Testing (SAT) and Start and Fine Tuning.	Bariven, S.A	Venezuela	2012	Oil & Gas
Three Control Systems to Replace the Foxboro DCS in the TJ3 Compression Plant - PDVSA Occidente	3 Supply and assembly control system based on PLC, programming, integration, engineering, control logics.	Bariven, S.A	Venezuela	2012	Oil & Gas
Definition and Implementation of Virtual Sensors Best Practices	Development of Claus Process dynamic simulation in a heavy crude upgrading plant and a virtual analyzer prototype for this plant. Preparation and supply of the Best Practice's document and the induction presentation.	PDVSA AIT	Venezuela	2012	Oil & Gas
Optimization and Advanced Process Control Best Practices, including Dynamic Process Simulation and Operator Training Simulators (OTS).	Desarrollo y suministro del documento de mejoras prácticas y de la presentación de inducción.	PDVSA AIT	Venezuela	2012	Oil & Gas
Refining Process Automation Systems Architectures definition. Best Practices. From the Field Instrumentation to Assets Management in Real Time.	Development and delivery of best practice document and the induction presentation.	PDVSA AIT	Venezuela	2012	Oil & Gas
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	Petrocedño	Venezuela	2012	Oil & Gas
Gas High Pressure Inyection Plant III (PIGAP III)	Safety Integrity Level Study (SIL) LOPA	PDVSA	Venezuela	2012	Oil & Gas
Diluted Crude Oil collection (DCO) and diluents Distribution (DIL) Pipelines System of PDVSA Junin Division - Petrojunin.	HAZARD Identification (HAZID)	Petrojunin	Venezuela	2012	Oil & Gas Pipeline

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	PDVSA	Venezuela	2012	Oil & Gas
Control System Replacement Rolls Royce FT100 Entronic Project of LL5 Mini Plant in PDVSA West	Purchase of Signal Conditioner Modules for Fisher-Parker Control Valve Actuator and PLC Interface,	PDVSA Occidente	Venezuela	2012	Oil & Gas
Refining Architecture Review and Update (PRBSI Engineering Services)	PRBSI Engineering Services	PDVSA AIT	Venezuela	2012	Oil & Gas
Cogeneration Unit of Pascual Andean Yogurt Plant, a Polar Company	Hazard and Operability Study (HAZOP) , and Quantitative Risk Analisis (QRA)	Pascual Andean Yogurt Plant	Venezuela	2012	Food & Beverage
Quantitative Risk Analysis for the 280 MW Parabolic through Solar Power Plant - Mojave	Quantitative Risk Analisis (QRA)	Abener Teyma Mojave General Partnership	USA	2012	Solar energy
Compression and drying air packages for services and instruments of JBA Plant, of Corpoelec in El Guamache, Nueva Esparta State.	Hazard and Operability Study (HAZOP)	CORPOELEC	Venezuela	2012	Power Generation
Simulation Service of the effects associated with thermal radiation	Simulation Service of the effects associated with thermal radiation	Productora de Alcoholes Hidratados, C. A. (Pralca)	Venezuela	2012	Petrochemical
New South Cluster Area P2, Surface Facilities Detail engineering	Quantitative Risk Analisis (QRA)	PDVSA	Venezuela	2012	Oil & Gas
Hydrated Alcohols Manufacturer	Safety Integrity Level Study (SIL)	Productora de Alcoholes Hidratados, C. A. (Pralca)	Venezuela	2012	Petrochemical
Cartagena's Refinery Fiscal Measurement Package	Hazard and Operability Study (HAZOP)	Ecopetrol	Venezuela	2012	Oil & Gas
Paramo's Oil pumping station	Safety Integrity Level Study (SIL) LOPA	Ecopetrol	Venezuela	2012	Oil & Gas
Rolls-Royce Entronic FT100 Control System Replacement in Lagunillas 5 Miniplant (MP-LL-5) gas turbo compressor of PDVSA West.	Technical Assistance for olls-Royce Entronic FT100 Control System Replacement in Lagunillas 5 Miniplant (MP-LL-5) gas turbo compressor of PDVSA West.	PDVSA Occidente	Venezuela	2012	Oil & Gas
Mini Plant LL5	Combustible Gas Control and Anti surge Algorithms Licenses Acquisition.	PDVSA Occidente	Venezuela	2012	Oil & Gas
New Pipeline El Palito - P / D Barquisimeto (SISCO Project) Basic Engineering	Quantitative Risk Analisis (QRA) & Safety Integrity Level Study (SIL)	RLG & Asociados C.A.	Venezuela	2012	Oil & Gas Pipeline
Adecuación/ampliación llenadero P/D Carenero	Estudio de Peligros y Operabilidad (HAZOP)	PDVSA	Venezuela	2012	Petróleo y Gas
Basic and Detail Engineering for Caucagua plant turbogenerator installation	Hazard and Operability study (HAZOP)	Pepsi Cola Venezuela, C.A.	Venezuela	2012	Food & Beverage (Energy Generation)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Safety Analysis of cock fm system	Safety Analysis of cock fm system	Proplant-PCS Nitrogen	Trinidad & Tobago	2012	Oil & Gas
CRS Thermosolar Plant	Hazard and Operability Study (HAZOP) and Safety Integrity Level Study (SIL)	Abengoa Solar NT, S.A.	Spain	2011	Thermo Solar
New boilers for the steam generation project	Hazard and Operability Study (HAZOP)	PDVSA	Venezuela	2011	Oil & Gas
Solugas Thermosolar Plant - CRS	Hazard and Operability Study (HAZOP)	Abengoa Teyma	Spain	2011	Thermo Solar
EOR Project	Safety Integrity Level (SIL) Study	PDVSA Petrocedeno	Venezuela	2011	Oil & Gas
Detail Engineering for T2 branch ID-IE DFE gas flow line	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2011	Oil & Gas
Boiler Management System (BMS) Engineering	Programming and start-up of four BMS for heaters	Sigma Thermal, Inc.	U.S.A.	2011	Oil & Gas
Morichal-PTO Transport Pipeline Capacity Increase	Safety Integrity Level Study (SIL)	PDVSA	Venezuela	2011	Oil & Gas (Pipeline)
Combustible Gas Detectors Supply	Instrument supply	Clariant S.A.	Venezuela	2011	Pharmaceutical
Process Funtional Safety, Riek Analisis, and Safety Instrumented Systems Course.	Training	PDVSA	Venezuela	2011	Oil & Gas
Process Funtional Safety, Riek Analisis, and Safety Instrumented Systems Course.	Training	Polinter	Venezuela	2011	Oil & Gas
Scribe Provision	Hazard and Operability (HAZOP) Study	Tecnoconsult	Venezuela	2011	Oil & Gas
HAZOP Refinería de El Pacifico en Manabi - Ecuador	Estudio de Peligros y Operabilidad (HAZOP)	Refinería del Pacifico	Ecuador	2011	Petróleo y Gas
El Palito and La Cabrera Thermoelectrical Plants Installation	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2011	Oil & Gas (Thermoelectric)
Batalla de Santa Inés Refinery	Hazard and Operability (HAZOP) Study	FOSTER WHEELER IBERIA	Spain	2011	Oil & Gas
Shams 1 Thermo-Solar Plant, Abengoa	Quantitative Risk Analysis (QRA)	UTE ABENER TEYMA	Spain	2011	Thermo Solar
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	PEQUIVEN	Venezuela	2011	Petrochemical
Process Funtional Safety, Risk Analisis, and Safety Instrumented Systems Course.	Training	Polinter	Venezuela	2011	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Guatire-PE Guarenas Diesel supply PD	Hazard and Operability (HAZOP) Study	PDVSA	Venezuela	2011	Oil & Gas
ABKATUN N1 Operative Center, PEMEX	Safety Requirements Specifications (SRS) and Safety Integrity Level (SIL) Verification	PEMEX	México	2011	Oil & Gas (Offshore)
CO2 Detection System for Bodegas Pomar Cooling Cellars, Carora - Lara	System Engineering	Cerveceria POLAR, C.A.	Venezuela	2011	Food & Beverages
Control Systems for two (2) Gas Compressors	Design Review and Validation	PDVSA	Venezuela	2011	Oil & Gas
Reficar Logistics Project Detailed Engineering - PLR - Tipiel	Quantitative Risk Analysis (QRA)	ECOPETROL	Colombia	2011	Oil & Gas
Reficar Logistics Project Detailed Engineering - PLR - Tipiel	Hazard and Operability Study (HAZOP) and Layers of Protection Analysis (LOPA)	ECOPETROL	Colombia	2011	Oil & Gas
El Palito Refinery FCCU Automatic bypass system evaluation	Hazard and Operability Study (HAZOP), Safety Integrity Level Study (SIL), and Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2011	Oil & Gas (Refining)
Solana 280 MW Solar Power Plant	Quantitative Risk Analysis (QRA)	Teyma USA and Abener E&C Services General Partnership	USA	2011	Solar energy
Nexus Longtom Spare HIPPS SCM	Safety Integrity Level (SIL) Study	HIMA	USA	2011	Oil & Gas
Petromonagas COPEM Expansion	Hazard and Operability (HAZOP) Study	Petromonagas / SNC LAVALIN INT. CO. INC.	Venezuela	2011	Oil & Gas
CG-W6-I Co-generation Plant	SIS Safety Integrity Level (SIL) Study	PDVSA	Venezuela	2011	Power Co-Generation
Solar Thermolectrical Plant (Shams 1) to be installed in Abu Dhabi	Hazard and Operability (HAZOP) Study	TOTAL / UTE ABENER TEYMA	Spain	2011	Solar energy
CG-W6-I Co-generation Plant	Hazard and Operability Study (HAZOP) and Quantitative Risk Analysis (QRA)	PDVSA / Tecnoconsult S.A.	Venezuela	2011	Power Generation
Gas Detection Engineering in San Joaquin Plant, Carabobo.	Gas Detection System	Cerveceria POLAR, C.A.	Venezuela	2011	Food & Beverages
Gas Detection Engineering in Modelo Plant, Maracaibo.	Gas Detection System	Cerveceria POLAR, C.A.	Venezuela	2011	Food & Beverages
Gas Detection Engineering in Oriente Plant, Barcelona	Gas Detection System	Cerveceria POLAR, C.A.	Venezuela	2011	Food & Beverages

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
PGPB PEMEX Production Subdirection Gas Processing Complexes	Validation of study procedures in the functional safety area	PEMEX	Mexico	2011	Oil & Gas
Fertinitro H51q Upgrade	HIMA - PLC chassis supply	FERTINITRO	Venezuela	2010	Oil & Gas
Juan Bautista Arismendi Generation Plant	Hazard and Operability Study (HAZOP), APP, Quantitative Risk Analysis (QRA) and SIL	EDC / SENECA	Venezuela	2010	Oil & Gas
Pacific Rubiales Llanomulsion 100K test	Hazard and operability (HAZOP) Study	Pacific Rubiales	Colombia	2010	Oil & Gas Pipeline
LGN Plant - Quintero	Fire & Gas Detection System QRA Study in the GNL, Reception, Storage and Regasification Areas		Chile	2010	Oil & Gas
Basic Engineering for the Implementation of Technical Alternatives for the Industrial Services Modernization of the Barrancabermeja Complex Management - Air - Ecopetrol SA	Quantitative Risk Analysis (QRA) - Air System	ECOPETROL	Colombia	2010	Oil & Gas
SIL Study for the Gas Processing Plant in Campo Margarita Field in Bolivia to be operated by Repsol.	SIL definition and verification of Gas Central Unit facilities (CPF) in Campo Margarita	REPSOL YPF E&P	Bolivia	2010	Oil & Gas
Basic engineering for the Technical Alternatives Implementation for the Modernization of Industrial Services of the Barrancabermeja - Water Complex Management - Ecopetrol	Quantitative Risk Analysis (QRA) - Water System	ECOPETROL	Colombia	2010	Oil & Gas
Infrastructure for Diesel and Gasoline Pumping from Acajutla petroleum derived fuel Storage and Distribution Plant to the Multiple Point Mooring Terminal", and Construction of the Multiple Point Mooring Terminal, both in El Salvador	Hazard and operability (HAZOP) Study	ALBA Petróleos de El Salvador	El Salvador	2010	Oil & Gas
Gas production Detection System, Los Cortijos Plants	Ammonia, Carbone Dioxide and Combustible Gas production. Dispersion Analysis and Gas Detection System	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages (Gas Detection)
Paraguana Refining complex Alkylation 1 Unit	Quantitative Risk Analysis (QRA)	PDVSA	Venezuela	2010	Oil & Gas (Refining)
Technical assistance AGA Chile	Technical assistance for Emergency Shutdown System	AGA	Chile	2010	Petrochemical
Preliminary Hazard Analysis (PHA) and Quantitative Risk Analysis (QRA) of the Electrical Generation Plant, Thermal-Solar Shams 1 in Abu Dhabi	Preliminary Hazard Analysis (PHA) and Quantitative Risk Analysis (QRA)	TOTAL UTE ABENER TEYMA	Spain	2010	Solar energy
HAZOP Study for Injection PAD 5 - Pacific Rubiales Energy.	Hazard and Operability Study (HAZOP)	Pacific Rubiales	Venezuela	2010	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Safety Integrity Level Study (SIL) for the "Centrifugal Compressor Acquisition and Installation to supply air to the Amuay Refinery Nitrogen Plant" Project	Safety Integrity level (SIL) study	PDVSA	Venezuela	2010	Oil & Gas (Refining)
Gas Detection System Engineering for the Machine Room in Modelo Plant, located at Maracaibo	Gas Detection System Engineering	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Gas Detection System Engineering for the Machine Room in San Joaquin Plant, Located at Carabobo State	Gas Detection System Engineering	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Gas Detection System Engineering for the Machine Room in Oriente Plant, located at Barcelona	Gas Detection System Engineering	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Miramar Fuels Distribution Plant, of ALBA de Nicaragua, S.A. (ALBANISA)	Safety Integrity level (SIL) study	ALBANISA	Nicaragua	2010	Oil & Gas
HAZOP Study for the CPF2 project Detailed Engineering" of Pacific Rubiales Energy	Hazard and operability (HAZOP) Study	Pacific Rubiales	Colombia	2010	Oil & Gas
CRP Detail Engineering for Oil lube bases increase project.	SIL/SIS study	PDVSA	Venezuela	2010	Oil & Gas
San Joaquin Plant Hazop.	Hazard and Operability (HAZOP) Study of the Diesel Tanks area	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Cluster ICF and ICG.	Safety Integrity level (SIL) Study	Polinter	Venezuela	2010	Petrochemical
Safety enhancement of the Caustic Soda and Diesel systems at Los Cortijos Plant	Hazard and operability (HAZOP) Study	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Detail Engineering for Gas Detectors Location at Los Cortijos Plant.	Machine Room Gas Detectors (CO2, NA3, CH4) installation detail engineering.	Cerveceria POLAR, C.A.	Venezuela	2010	Food & Beverages
Ultrafiltration unit U-5400 and reverse Osmosis U-5500 in Barrancabermeja Complex Ecopetrol, S.A. Hazop.	Hazard and Operability Study (HAZOP)	ECOPETROL	Colombia	2010	Oil & Gas
Fiber Optic installation and facilities adequacy for PLC's migrations of extruder and homogenization units.	This work includes but not limited to installation of new control PLC's to be supplied by ABB, as well as PEBD extruder and homogenization PLC's replacement. Also included is the installation of remote I/O's stations for the subsystems.	Polinter	Venezuela	2010	Petrochemical
Basic Engineering for the Barrancabermeja Facilities Industrial Services Modernization Technical Alternatives implementation - Water	Hazard and Operability Study (HAZOP)	ECOPETROL	Colombia	2010	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Pozos Colorados (Santa Marta) – Galán (Barrancabermeja). Colombia Pipeline.	Safety integrity level (SIL) Study of the safety functions associated with the Safety Instrumented System (SIS) and hazard and operability (HAZOP) Study	ECOPETROL	Colombia	2010	Oil & Gas Pipeline
CPF2 of Pacific Rubiales Energy	Hazard and operability (HAZOP) Study	Pacific Rubiales	Colombia	2010	Oil & Gas
Basic engineering for the implementation of technical alternatives for the modernization of industrial services of Barrancabermeja Complex Management.	Hazard and operability (HAZOP) Study	ECOPETROL	Colombia	2009	Oil & Gas
Oil Pipeline Dorine 5-Lago Agrio Ecuador.	Hazard and operability (HAZOP) Study	Petroecuador	Ecuador	2009	Oil & Gas Pipeline
IV Extraction Train - San Joaquín.	Hazard and Operability Study (HAZOP) - Gas area	PDVSA	Venezuela	2009	Oil & Gas Gas Production
Parafin Process Burners Safeguards de Ecopetrol Barrancabermeja .	HAZOP-LOPA Analysis and safety integrity level study.	ECOPETROL	Colombia	2009	Oil & Gas Refining
1-Buteno Plant installation Basic and Detail Engineering.	Hazard and operability (HAZOP) Study	Polinter	Venezuela	2009	Petrochemical
Metor Gas Compressor K/301.	Metor Gas Compressor K/301 Metor Simulation.	METOR, S.A.	Venezuela	2009	Petrochemical
Sulphur Recovery Plant new instrumentation - El Palito Refining (Oil & Gas).	Design and installation details of the new instrumentation of the sulphur recovery plant.	PDVSA	Venezuela	2009	Oil & Gas Refining
Storage and Combustible Oil distillates in Acajutla, El Salvador.	Quantitative Risk Analysis (QRA) Study	ALBA Petróleos de El Salvador	El Salvador	2009	Oil & Gas
Jusepín Extraction Plant Gas Dehydration System Upgrade	Quantitative Risk Analysis (QRA) Study	PDVSA	Venezuela	2008	Oil & Gas
Aguasay Operation Center Basic Engineering and Recollection System Basic and Detail Engineering in Monagas State.	Safety Integrity Level (SIL) Study	ORICONSLT-PDVSA	Venezuela	2008	Oil & Gas
Aguasay Operation Center Basic Engineering and Recollection System Basic and Detail Engineering.	Quantitative Risk Analysis (QRA) Study	ORICONSLT-PDVSA	Venezuela	2008	Oil & Gas
Deep Conversation Puerto La Cruz Refinery.	Process safety and F&G System documents review and issuance.	PDVSA	Venezuela	2008	Oil & Gas
Guatire Combustible Distribution Plant Emergency Shutdown System.	Carenero and Guatire Combustible Distribution Plant Safety Instrumented System Design Validation, Process Functional Safety, Risk Analysis and Safety Instrumented System Training for Plant Personnel.	PDVSA	Venezuela	2008	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
El Palito Refinery Sulphur Recovery Unit Boiler B-6952 and Furnace B-6951 Risk Analysis.	Risk Analysis Technical Assistance Service.	PDVSA	Venezuela	2008	Oil & Gas Refining
Boilers Audit NFPA 85 at Corpus Christi in Texas State	CITGO Corpus Christi Refining (Oil & Gas) Boilers Audit (NFPA 85 Accomplishment)	CITGO	USA	2008	Oil & Gas Refining
High Pressure and Medium Pressure Plant	Specialized Technical Assistance for the Wonderware System in HP and MP Plant.	Wilpro Energy Services LTD	Venezuela	2008	Oil & Gas
Operation Center Zapato Matar EPC, Safety Instrumented System in Anaco District.	Safety Instrumented System (SIS), design, construction, assembly and supply, including hardware and software supply, programming, integration, control logic preparation, training, technical support, documentation, FAT, SAT and Start up.	PDVSA	Venezuela	2009	Oil & Gas
PIGAP II Plant FV-0501 A,B,C,D,E Valves in Monagas State	Skid safety valves safety control scheme modification	Wilpro Energy Services LTD	Venezuela	2008	Oil & Gas
Arecuna 4 (ARED-4) Field Centralization in San Tomé District	Hazard and Operability (HAZOP) Study	PDVSA	Venezuela	2008	Oil & Gas
Combustible Fill Station Automation (Inventory Control, Custody Transfer) 5000 M3 Tank Form located in Puerto Cabello - Carabobo State	Detail engineering, applications development, system configuration procurement, construction, assembly, installations, FAT, SAT commission and star up, for the process automation related with tank truck combustible fill. SCADA will be installed for its supervision.	VOPAK	Venezuela	2008	Oil & Gas
"JOSE 250" for PDVSA's San Joaquín Extracción Plant	Hazard and Operability Study (HAZOP) and F&G Safety Integrity level (SIL) study for PDVSA's San Joaquín Extraction Plant "JOSE 250" project	PDVSA	Venezuela	2008	Oil & Gas
Emergency Shutdown Systems for Wet Gas Compressor and Power Recovery Train for FCC Unit in El Palito Refinery.	Engineering, Procurement and Construction, Factory and Site Acceptance Tests, Commissioning and Start-Up, for the replacement of the Emergency Shutdown Systems PES and Cabinet, and the adecuation of related instrumentation	PDVSA	Venezuela	2008	Oil & Gas (Refining)
SIL Study for CUT-OFF Valves - SINCOR located in Jose Petrochemical Complex in Anzoategui State	SIL Study for the Sour Water Unit Stripper mid-pressure steam cut-off valves	SINCOR	Venezuela	2007	Oil & Gas (Refining)
San Joaquin Fire & Gas Safety Instrumented System EPC in San Joaquin District - Anzoategui State	Engineering, Procurement, assembly, configuration, installation, training, FAT, SAT and start up of the plant F & G system.	PDVSA	Venezuela	2008	Oil & Gas
Special Hazop / SIL Studies - SIOM Project in Jose Petrochemical Complex - Anzoategui State	Hazard and Operability (HAZOP) and SIL Studies in several SINCOR Upgrader sections	SINCOR	Venezuela	2008	Oil & Gas (Refining)
San Joaquin Operation Center Safety Instrumented System (SIS) EPC in San Joaquin District - Anzoategui State	Engineering, Procurement, assembly, configuration, installation, training, FAT, SAT and start up of the plant SIS.	PDVSA	Venezuela	2007	Oil & Gas
Santa Ana El Toco Operation Center QRA in Anzoategui State.	PGA Project Operation Center Santa Ana El Toco Flow and Recollection stations Quantitative Risk Analysis (QRA)	PDVSA/Oriconsult	Venezuela	2007	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
POUI, B, Teak & Saman Platform SIL/SIS Study	Safety Integrity Level SIL Study for the SIS Basic Engineering in an Offshore Production Station	Repsol YPF	Trinidad	2007	Oil & Gas (Offshore)
EPF Final Adjustment Flow Station (SIL & SRS Spec.)	Safety Integrity Level SIL determination and SRS specification development for the SIS of the flow station Pata Vieja operated by Petrobras in Ecuador.	PETROBRAS	Ecuador	2007	Oil & Gas
Oficina Tank Farm Storage Capacity Increment and Heavy production handling through a 42" pipeline project in San Tomé District	Hazard and Operability Study (HAZOP) and Safety Integrity level (SIL) study	PDVSA	Venezuela	2007	Oil & Gas (Pipeline)
Boilers CRZ 1 and 2 flame detection system in Tacoa Power Plant Generation.	BMS detail engineering and Safety Integrity level (SIL) study.	Electricidad de Caracas (EDC)	Venezuela	2007	Power Generation
Sincor Amine Regeneration Unit (ARU 3000) quantitative risk analysis.	Quantitative Risk Analysis (QRA)	SINCOR	Jose	2007	Oil & Gas
Sincor Amine Regeneration UNIT (ARU 3000) SIL-SIS study.	Safety Integrity level (SIL) determination and SRS specification development for the SIS of the Amine regeneration UNIT.	SINCOR	Jose	2007	Oil & Gas
Jobo 3 Control PLC Programming.	Combustible control, start up and shutdown sequency applications programming for a turbo compressor with steam turbine.	PDVSA	Morichal	2007	Oil & Gas
Sincor Amine Regeneration UNIT (ARU 3000) Hazard and operability study (Hazop).	Hazard and operability (HAZOP) study lead	SINCOR	Jose	2006	Oil & Gas
Marine Emissions Control system SIL LOPA, Validation & Specification for Citgo in Corpus Christi Refinery - Texas State	SIL Determination (LOPA meeting), design validation & SIS Specification for a Marine Emissions control system, based on a safety skid an a fume incinerator.	CITGO	USA	2006	Oil & Gas
Altagracia, Moron and Los Morros Compression Plant SIL-SIS study services.	SIF identification, SIL determination, Cause-Effect Matrix.	PDVSA	Venezuela	2006	Oil & Gas
Jobo II & III and Pilón Plants Low Pressure Gas Recolection By-pass System for PDVSA in Morichal District	What if? Analysis, hazard identification, preliminary hazard analysis, consequences, QRA, separation equipment calculation, SIL estimation, SIS architecture and specification.	PDVSA	Venezuela	2006	Oil & Gas
Conceptual Engineering Design of the Control System for the flare Gas Recovery Units at West and East Plant in Corpus Christi Refinery	LOPA Analysis , control cabinet design, and PLC programming, HMI, Factory Test, Site Tests, and Start-up	CITGO	USA	2006	Oil & Gas (Refining)
Control System acquisition (PLC and Fire Control) in PDVSA San Tome District	Three (3) control system supply and assembly based on PLC AB.	PDVSA	Venezuela	2006	Oil & Gas
Intouch integration PDMS link.	HMI integration, data base and SCADA system.	Total Oil and Gas Venezuela (TOGV)	Jusepin	2005	Oil production (Oil y Gas)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Risk analysis	Pilot plant MIS risk analysis.	DITECH	Morichal	2006	Refining (Oil & Gas)
Risk analysis	SIL/SIS study gas Anaco project Santa Rosa Compression Plant.	JANTESA	Venezuela	2006	Oil & Gas
Automation Cluster.	Cluster automation in the U.P. extraheavy crude San Tome South District.	PDVSA	San Tomé	2006	Oil & Gas
Automation of the wells gas lift assisted in U.E. west land and Lagomedio.	Detail engineering, material procurement, manufacturing and assembly, transportation, installation, calibration, testing, start up technical assistance, documentation and training of the equipment.	PDVSA		2006	Oil & Gas
Integral Automation PB-18 flow station of the UE La Salina.	PLC replacement and the new signals Integration. Field instrumentation replacement and update.	PDVSA		2006	Oil & Gas
Detail Engineering, supply, control system installation and construction for Lube Plant Cardon Refining (Oil & Gas).	Detail engineering, applications development, system configuration, procurement, construction, assembly, installations, FAT, SAT, commissioning and star up.	PDVSA	Refinería Cardón	2006	Refining (Oil & Gas)
Air compressors safety PLC supply.	Emergency shutdown and HMI supply, engineering supply for five (5) Plant and instrument air compressors based on HIMA and overspeed also in HIMA.	PDVSA / CCC	Refinería El Palito	2006	Refining (Oil & Gas)
Automation of testing separators southern district.	Field instruments installation, PLC's and RTU's cabinets, power supply system, communication system, cable laying work, pipe and connections of the equipment associated to the system and SCADA system integration.	PDVSA	Distrito Sur	2005	Oil & Gas
Compressed air system upgrade.	Detail engineering of five (5) air compressors in paralel to supply instrument and plant air.	PDVSA	Refinería El Palito	2005	Refining (Oil & Gas)
SIL Study for the CO Boiler in the FCC Unit of CITGO's Lemont Refinery in Chicago	SIL estimation for each Safety Instrumented Funtion of the CO Boiler, SIS conceptual design, and SRS development	CITGO	USA	2005	Oil & Gas (Refining)
Guatire, Carenero and Catia La Mar Fuels Distribution and Storage plants	Consequences analisis, target risk determination, SIL determination for each SIF through Fault Trees development and LOPA analisis, SIS specification	PDVSA	Venezuela	2005	Oil & Gas (Oil Production)
Basic supervision I of the UETEP flow station in Bachaquero	Field instruments installation PLC's and RTU's cabinets, power supply system, communication system, cable laying work pipe and connections of the equipment associated to the system and SCADA system integration.	PDVSA	Venezuela	2005	Oil & Gas
Indon Power Frame 5 GT	Complete control system for GE Frame V Turbo Generator based on Allen Bradley Controllers, including: start up and Shut Down systems, governor control, load control and field instrumentation, start up and commissioning. HMI on Indusoft.	Putranata/Indon Power	Indonesia	2005	Power Generation
Antisurge and Load Sharing Control for 18 Refrigeration Compressors	Advanced Antisurge and Load Sharing Control for 8 refrigeration compressors, based on Redundant Siemens S7-400, and Pilz HMIs.	Moritani	Tokyo, Japan	2004	Refining (Oil & Gas)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
San Joaquin and Zapatos Mata-R Operational Centers Mata-R Shoes (flow station and compressor plant)	Safety Integrity level (SIL) study for the Process Emergency Shutdown (ESD) and Fire & Gas (F&G) systems (SIS)	PDVSA GAS	Venezuela	2004	Oil & Gas (Oil Production)
Turbines TU-4101 & TU-4102 Protection System	Overspeed protection system detail engineering, procurement, construction, commissioning, start up. Speed control system upgrade in two (2) steam turbines. The speed dedicated controllers are CCC series 3 plus.	Supermetanol	Jose	2003	Refining (Oil & Gas)
Emergency shutdown system reliability improvement.	Detail engineering, applications development, system configuration, procurement support, construction, installation, pre-commissioning, commissioning and start up of the ESD system of the SINCOR upgrader.	SINCOR	Jose	2003	Refining (Oil & Gas)
Gas Compression Plant protection system.	Detail engineering, process and emergency shutdown applications development, system configuration, procurement, construction, commissioning and start up of four (4) compression plants.	PETROBRAS	La Concepción, Mata	2003	Refining (Oil & Gas)
Real time operations supervision system.	Detail engineering, SCADA applications development, system configuration, procurement, construction, commissioning and start up of real time operations supervision system.	PETROBRAS	La Concepción	2003	Refining (Oil & Gas)
J-491 Integration	Engineering, Procurement, Installation, Commissioning and Start Up for J-491 adapting to Inyector Well and Integration to Telemetry System of RVP	Total Oil and Gas Venezuela (TOGV)	Jusepin	2003	Oil & Gas
Control Packaged ESD / PCS / F&G Systems	Supply operational functional hardware, software and performance requirements for the upgrade of the Process Control System (PCS), including operating and application software and a fault tolerant, fail safe, fully redundant Emergency Shutdown (ESD) / Fire & Gas (F&G) Systems with all system hardware, configuration, programming and maintenance software system, completely fabricated, pre-commissioned and shop tested, to be installed at Rucio Viejo Plant (RVP) in Jusepin, Monagas state.	Total Oil and Gas Venezuela (TOGV)	Jusepin	2003	Oil & Gas
HNAY Unit, Amuay Refinery	HNAY Unit Protection System (SIS) Specification based on previous SIL studies. <ul style="list-style-type: none"> - Architecture design of each safety instrumented function, measured variable, "logic solver, final element, depending on the SIL with no existsting SIS. - Safety System Performance Analysis" for each safety instrumented function. - SIS specifications development, including interface with the control system - Fault tree diagram with the SIS for each safety instrumented function. 	PDVSA	Venezuela	2003	Oil & Gas (Refining)
Safety Integrity level (SIL) Determination of the Safety Instrumented System (SIS) for the New Sour Water Plant (DAA-5) Cardón Refinery	Supply of specialized personnel to determine the integrated level (SIL) of the safety instrumented system (SIS) for teh new sour water plant	PDVSA	Venezuela	2003	Oil & Gas (Refining)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Logistics for DCU Shutdown Management	Support and supervision services for: the Detail Engineering, Procurement, Precommissioning, Commissioning and Start Up of the tank measurement system and the instrumentation and control system of the mixing process in the vacuum residual	SINCOR	Jose	2002	Refining (Oil & Gas)
RVP Optimization Project 19-200 PDSV-1134 (EPJ)	Engineering, Procurement, Construction and Start Up for the installation of a backup system for RTU # 1 in EPJ	Total Oil and Gas Venezuela (TOGV)	Jusepin	2002	Oil transportation (Oil y Gas)
Packaged Electrical cabins for CNW DJ15 and COT4 Wells	Engineering, Procurement and Construction of a Compact system for oil wells supervision and control. Includes manufacturing of the Cabins with MCC, Fire & Gas Panel, UPS, Remote Terminal Unit (RTU) Electronic Operation Interface, CCTV, Telephone and Fiber Optic Data transmission System.	Total Oil and Gas Venezuela (TOGV)	Monagas	2002	Oil production (Oil y Gas)
Gas Compressors Controllers Procurement	Supply of antisurge and performance control system for gas compressors in Morichal technical assistance & support	PDVSA	Jusepin	2002	Gas compression (Oil & Gas)
Revamp and Additions in the Automated Facilities in the Western Production Unit	Automation small works associated to the existing automation systems, instrumentation and electricity in the western production facilities	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Flow Heater Automation in UE TEP	Reinstrumentation, gas combustion, train adaptation, 62 crude oil heaters automation and electrical power supply and facilities in the western heavy east. Earth Production Unit	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Steam Ship C-204 Automation	Engineering, Procurement and Construction for the ship C-204 automation and electrical generation parameters incorporation to the supervision system	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Fire & Gas System Update (SCI) and Emergency Shutdown (SPE) in Yagua Gasoline Distribution Plant	Engineering, Procurement and Installation of the ESD system in Yagua Plant	PDVSA	Yagua	2002	Refined products distribution (Oil y Gas)
Steam Plant W-6 Boilers Update in Lagunillas and Station E-1 Heaters in Tia Juana	Engineering, Procurement, Assembly, Application Development, Technical Assistance and Starup of the control system and ESD of 8 boilers and 3 heaters in W-6/E-1 Plants for PDVSA Western	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Control Cabinet Manufacturing for Production Facilities PB-19 and TJ-20	Engineering, Procurement and Assembly of the control cabinet of the flow station	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Gas, Smoke and Heat Detection System Service & Maintenance in Gas Compression and Liquid Extraction Plant Facilities in Western Division	Gas, Smoke and Heat Detection System Service & Maintenance in Gas Compression and Liquid Extraction Plant Facilities in Western Division	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
Fire & Gas Detection System an Emergency Shutdown System in 14 Flow Station in UE Lagotreco	Materials procurements, manufacturing, equipment assembly, material and personnel transportation, instrumentation & electricity equipment installation, calibration, testing, documentation, integration and starup of the new F&G and ESD systems	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Automation Project Engineering Services Maracaibo District	Engineering, cost control, planning, construction, supervision, work inspection, advisor and startup of facilities in Western Projects	PDVSA	Maracaibo	2002	Oil production (Oil y Gas)
CRP Amuay Conversion Steam Generation System Reliability Enhancement Detailed Engineering. Block 29 Boilers in Amuay Refinery Falcon State	Existing control system extension Design and Specification. SIL Study, Emergency Shutdown System (ESD) Specifications, and SIS Study and calculations. - Cause Effect Diagrams Development. - Control Narratives and ESD Logic Diagrams. - Control Schematics design. - Risk events identification and assessment. - Integrity Levels (SIL) Determination and Calculations. - Safety Instrumented System Determination, to meet the SIL - Evaluation of the existing architecture (TDC-3000). for	PDVSA CRP / TECNOCONSULT	v	2001	Oil & Gas (Refining)
Safety Integrity level (SIL) Determination of the Safety Instrumented System (SIS) Plant AV-2 and Plant CD-4 Reinstrumentation Cardón Refinery	Design and specification of the enlargement of the existing control system, specification of the emergency shutdown system and the SIL study and calculation cause-effect, flow chart, control description and logic drawings	PDVSA	CRP Cardon Refinery	2001	Refining (Oil & Gas)
Pilón Crude Oil (Morichal) Disposal Automation for Tank Patio Office San Tomé	Detail engineering, procurement and construction of the system, instrumentation and communication area. Plant existing Scada Oasys system and MOD300 (ABB) system integration. Addition of Rotor and Limatorque actuator to the existing communication loop. New & existing PLC's application development. Assembly, FAT, installation, SAT, startup, support. Radio communication equipment supply & installation in telemetry house in valve station	PDVSA	Morichal	2001	Oil transportation (Oil y Gas)
Packaged Electrical cabins for CNW D112 and COT3 Wells	Engineering, Procurement and Construction of a Compact system for oil wells supervision and control. Includes manufacturing of the Cabins with MCC, Fire & Gas Panel, UPS, Remote Terminal Unit (RTU) Electronic Operation Interface, CCTV, Telephone and Fiber Optic Data transmission System.	Total Oil and Gas Venezuela (TOGV)	Monagas	2001	Oil production (Oil y Gas)
Compressor Plant Cincogas 3-4, Portacompressor 7, Lagogas 3 y C-13, C-15, TJ2 and 3 Antisurge Control System	Antisurge control system engineering and procurement	PDVSA	Maracaibo	2001	Oil production (Oil y Gas)
Atmospheric Gas Oil Units, Salt Water Pumps, Fire Fighting System Pumps and Turbocompressors 15, 16 and 17 in the Cardon refinery	Safety Instrumented Functions (SIF) determination, SIL Determination for each SIF, Safety Requirements Specifications, Safety Instrumented System (SIS design and specifications), Protection Logic specifications.	PDVSA	Venezuela	2001	Oil & Gas (Refining)
Water Treatment Integration Vapor Plant HH-8	Engineering, Procurement, Construction and PLC Configuration. Schematics for the Water Treatment System Integration of Vapor Plant HH-8	PDVSA	Maracaibo	2001	Oil production (Oil y Gas)
Hydraulic System Automation and Protection of TERRANOVA FSPO	Coordination, Programming, Technical support and Factory Acceptance Test. System based in Safety PLC (PES). Platform: H51q-HS HIMA	PETROCANADA	Canada	2001	Oil production (Oil y Gas)
Basic Engineering Reliability Existing Control System expansion Design and Improvement for Industrial Services Specifications. Emergency Shutdown System for Cardon Refinery - Falcon State specifications. SIL quantitative Study.		PDVSA	Venezuela	2001	Oil & Gas (Refining)

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Acogas RTU 2 Pressurization	Engineering, Procurement, Construction Installation and Start up for Hazardous area (Class 1, Div. 2) Pressurized Cabinet with Safety PLC (PES) for Slug Catcher remote supervision and control.	Total Oil and Gas Venezuela (TOGV)	Monagas	2000	Oil production (Oil y Gas)
Telemetry system for crude EPJ fiscal measurement in RVP control room.	Procurement, Equipment Supply, assembly, installation, commissioning and Start up of the Telemetry System protection and control of Well Pads 2, 5, 8 & 10 in the flow stations for gas and water fiscal Measurement and custody transfer for wells injection.	Total Oil and Gas Venezuela (TOGV)	Monagas	2000	Oil transportation (Oil y Gas)
Fire & Gas System upgrade in Cantina Distribution Plant and Gas Detectors Installation in Guatire and Carenero Plants.	Detail Engineering, Procurement and Construction for Fire and Gas System upgrade in Cantina Distribution Plant and Gas Detectors Installation in Guatire and Carenero Plants. Existing supervision sytem integration and Cantina Plant and new supervision system in Guatire and Carenero. FAT & SAT test.	PDVSA	Caracas	2000	Refined products distribution (Oil y Gas)
Antisurge Control System for Lagogas IV Compression Plant	Engineering and control system supply for Lagogas IV Compression Plant, with two compression modules of three stages each one, architecture based in CCC dedicated controllers. Specialized Technical Assistance during Acceptance test, Commissioning and Start up.	PDVSA	Maracaibo	1999	Oil & Gas
F & G system debottlenecking and expansion	Conceptual and basic engineering for the control, protection and fire and gas system expansion in the TOGV crude production plant in Jusepin.	Total Oil and Gas Venezuela (TOGV)	Monagas	2001	
Madero Fire & Gas system.	HMI configuration.	PEMEX	Madero, México.	2001	
Flare Gas Recovery Project	Control and Emergency Shutdown System Programming. HMI integration.	AC Compressor. Cliente final: KNPC.	Shuaiba Refinery, Kuwait.	2001	
CCR Reformer Units and Isomerization	Emergency Shutdown System Programming	Foster Wheeler Italiana. End Customer: Tupras	Izmir Refinery, Turkey	2000	
Construction of trench and instruments's installation in Rucio Viejo Plant	Field Instrument's installation and equipment supply	Total Oil and Gas Venezuela (TOGV)	Monagas	1999	Oil & Gas
Pressure Maintenance Telemetry System for EPS Crude Fiscal Measurement in RVP's Control Room	Procurement, Equipment Supply, assemle, installation, commissioning and Start up of Telemetry, Control and Protection System for Wells Pads 2, 5, 8 & 10 and for Custody Transfer and Measuring Stations for Wells Gas & Water injection.	Total Oil and Gas Venezuela (TOGV)	Monagas	2000	Oil & Gas
Detailed Engineering for Pressure Maintenance Project in Rucio Viejo Plant	Detail Engineering of Telemetry, Control and Protection System for Wells Pads 2, 5, 8 & 10 and for Custody Transfer and Measuring Stations for Wells Gas & Water injection.	Total Oil and Gas Venezuela (TOGV)	Monagas	2000	Oil & Gas
Control System Modernization and Supervision and Control Systems Integration for CL-1 Gas Compression Plant	Detail engineering, procurement, training, hardware & software supply, configuration, control sequences implementation, assembly, commissioning and startup of four (4) control panels for turbocompressor units in CL-1 Plant.	PDVSA	Maracaibo	2000	

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Technical Assistance, Testing, Start up and training of Plant Control and Supervision Systems and Water injection Multiple in Maracaibo Lake	PLC Programming, Data Base Configuration, Schematics and Technical Assistance for Multiple and Water Plant injection integration into PDVSA WESTERN SCADA	PDVSA	Maracaibo	2000	
Boiler PLC's Upgrade of RSI	Detail Engineering, Configuration, Implementation & Start Up of Combustion Control and Sequence for Flame Safeguard and General Protection of RSI 's Boilers, based on PLC AB and TDC 3000 HONEYWELL	PDVSA	CRP Cardon Refinery	1999	Oil & Gas
Antisurge Control System for LL-1, BA-2 and MP, LL6 Compression Plant	Detailed Engineering, Procurement, Training, Technical Support during Construction, Commissioning and Start Up for Antisurge System for Three Compressor Plants (LL-1, BA-2 & MP-LL-6). Equipment: Antisurge Controller, Load Sharing and Performance Controller of CCC	PDVSA	Maracaibo	1999	Oil & Gas
Engineering, Supply, Installation and Training of HIMA PLC for CO Boiler of Catalytic Cracking Unit CCU Plant	Detail Engineering, Procurement, Hardware & Software Supply, Assembly, Construction, Commissioning and Start Up of the Shutdown and Protection System for a CO Boiler of Catalytic Cracker Unit. Platform: H51q-HS HIMA	PDVSA	CRP Cardon Refinery	1999	Oil & Gas
TRICONEX PLC Development, Configuration and Programming for Catalytic Cracking Unit CCU Plant	Design, Development and Implementation of the Shutdown and Protection Sequence for Catalytic Cracker Unit and Technical Support during Start Up. Platform: TDC 3000 (GUS, DHP & HPM) TRICONEX	PDVSA	CRP Cardón Refinery	1999	Oil & Gas
Tia Juana and Maracaibo District Production Facilities Integration into the SCADA System	PLC Programming, Data Base Configuration and Schematics for flow stations integration into PDVSA WESTERN SCADA	PDVSA	Maracaibo	1999	
Air Compressors Control & Protection System Project	Control Sequence Programming, protection and HMI	Foster Wheeler Italiana. End Customer: Tupras	Izmir Refinery, Turkey	2000	
Emergency Shutdown System Project	Emergency Shutdown System Programming	ABB Lumus/TOYO Engineering	Rusia Plant	1999	
Deep Jusepin Upgrading Of The Fire And Gas System Project.	Detailed Engineering, Procurement, Software & Hardware supply, Construction, Commissioning and Start Up for Fire & Gas System in Rucio Viejo Plant. Platform: HIMA H51q-HRS and Intouch-Wonderware	Total Oil and Gas Venezuela (TOGV)	Monagas	1999	Oil & Gas
Lagogas SCADA System Centralization	Engineering, Procurement, Installation, Construction, Training, Commissioning and Start Up for necessary facilities for LagoGas III, IV, LagoGas V y LagoGas VI Plants Centralization to the master Scada Lago System in Lagunillas	MARAVEN	Maracaibo	1998	Oil & Gas
Detailed Engineering for the auxiliary equipment and common areas of Boilers 3 and 4	Detail Engineering to replace all pneumatic instrumentation, PLC applications logic stairs diagram developing and design, the integration to existing DCS for boilers 3 and 4 and Turbogenerators 3 and 4 auxiliary equipment control and supervision in Electrical Power Plants 3 y 4 de Planta Eléctrica.	PEQUIVEN	El Tablazo	1996	Petrochemical
Split SCADA LAGO Distributed System	Engineering, Procurement, Installation, Training, Commissioning and Start Up for Split SCADA Lago System. Based on: "Intouch", "Industrial SQL" from Wonderware. Existent I/F cpm PI (Process Information) develope.	MARAVEN	Maracaibo	1998	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Glicol Barúa V and Motatán II Plants Automation	Details Engineering, Procurement, Construction and Start Up of Burner Management System for Shutdown and Protection of two skid of Glycol Plant. Platform: HIMA H41-MS System, PLC-5 and RSView-Rockwell	MARAVEN	Motatán	1998	Oil & Gas
Automation System Integration and Communication with SCADA systems. Lagoven – Lagunillas. flow stations, gas multiples. compressor plant	Adapt Existing PLC's Programs, design and programm implementation, develop, data base configuration, system displays, procurement, assembly inspection and coordination, Construction Inspection, supervision and quality control; instrumentation calibration and testing; Loop testing; Equipment Inspection; Operation and Maintenance manual; radio communication equipment installation and testing; 14 Gas Manifold, 10 Water injection manifold, 2 Flow Stations, 4 Telecommunications Towers, 1 High pressure Gas Distribution Manifold and 1 Gas Compression Plant commissioning and start up	LAGOVEN	Bachaquero	1997	Oil & Gas
Lube Plant Automation. Fase II	Detail Engineering, Procurement, Hardware and Software supply, Construction, Training, Commissioning and Start Up of the Supervision and Control System of Lube Plant Fase II, based in PLC Allen Bradley and RSView	MARAVEN	Cardon Refinery	1998	Oil & Gas
Unigas II Plant Protection and Control System Centralization and Update.	Detail Engineering: Design, control and protection developing and implementation, documents and drawings for construction, procurement, equipment supply, loop testing, commissioning, start up. Antisurge Control System and Emergency Shutdown after sales support for two Centrifugal Compressors and one Gas Turbine in a Compression Platform.	MARAVEN	Maracaibo Lake	1997	Oil & Gas
Scarf Slug Catcher Advanced Control.	Basic and Detailed Engineering for the Advanced Pressure and Level Control in the Scarf Slug Catcher Area, Based on Allen Bradley PLC's & InTouch	BP Exploration	Cusiana - Colombia	1997	Oil & Gas
Vapor Plant HH-8 Protection / Equipment Secuence System	Details Engineering, Procurement, Hardware & Software Supply, Construction and Start Up of Burner Management System for Shutdown and Protection of twelve Boilers of HH-8 Plant. Platform: HIMA H41-HS System, PLC-5 and RSView-Rockwell	MARAVEN	Bachaquero	1998	Oil & Gas
Compressor Protection System K-501 A/B, K-301 A/B/C/D Bajo Grande GLP Plant	CCC Controllers Supply, Detail Engineering, Design, Developing and Implementation of the Control strategies and protection sequence for six (6) Propane compressors based in CCC and SCD PROVOX, construction and installation, Commissioning and Start up, Instrumentation and Compressors antisurge Control System in LPG Plant.	MARAVEN	Bajo Grande	1997	Refining (Oil & Gas)
Ceuta Gas and Lama Plants Integration.	"Turn Key" Project consisting of: Compressors and Solar Turbogenerators control and monitoring data base developing, process signal monitoring, including interface developing, equipment and material supply, construction, commissioning and start up.	MARAVEN	Maracaibo	1996	
Construction Inspection, Integration and Start up of the SCADA Lago systems for the Flow stations BA-08 y LL-41	Equipment supply, construction inspection, integration, commissioning and start up of SCADA Lago and Electric SCADA for two flow stations.	LAGOVEN	Lagunillas	1996	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Tacoa Plant Units 1 and 2 Supervisory Flame System.	Conceptual Engineering for the Combustion Control, Flame Safeguard and General Protection of Caracas Electricity Boilers	Electricidad de Caracas	Tacoa	1996	Power Generation
Compressor PB-1B Antisurge System Automation.	Detailed Engineering and Construction for Antisurge and Antistonewall system of the Propane Compressor. Based on Advance Process Manager and TDC 3000 of Honeywell	MARAVEN	Cardón Refinery	1996	Refining (Oil & Gas)
Bajo Grande.LPG Load Station	Design and Developing of Applications and Interfaces in Allen Bradley PLC-5 platform for the delivery of LPG for truck loading	MARAVEN	Bajo Grande	1996	Oil & Gas
Mayonnaise Production Automation	Mayonnaise production process automation design.	KRAFT	Valencia	1996	Food & Beverages
Maraven Bajo Grande Steam Production System Improvement.	Equipment supply, start Up Sequence, Protection, Control and Instrumentation, Detailed Engineering, Procurement and Construction of Four Boilers	MARAVEN	Bajo Grande	1995	Oil & Gas
Hazard analysis and Emergency Shut Down sequence of a natural gas turbocompressor off shore platform. Programming, Commissioning, and Start up in a Triple Modular Redundant System	Programming, commissioning and start up in TMR protection System.	MARAVEN	Maracaibo Lake	1995	Oil & Gas
Electric Power Plant Boilers 3 and 4 Reinstrumentation	Conceptual, Basic and Detailed Engineering and Construction Support and Supervision for Combustion Control, Flame safeguard and General Protection of Boilers 3 y 4. TDC 3000 with Advanced Process Manager and Modicom PLC's Control System.	PEQUIVEN	El Tablazo	1995	Petrochemical
Hazard analysis and emergency shut down sequence of refrigeration compressor of a liquid extraction plant. Triple Modular Redundant System	Emergency Shutdown secuence design, commissioning and start up in TMR System.	MARAVEN	Cardón Refinery	1994	Oil & Gas
Basic and Detail Engineering for Poliethilene Plant PROVAP Automation.	Basic and Detail Engineering; instrumentation control strategies and plastic production Plant control	PLASTILAGO / PEQUIVEN	El Tablazo	1994	Petrochemical
Hydrogen Plant Operation and Sequence Control	Engineering, Programming and Start up.	PLASTILAGO / PEQUIVEN	El Tablazo	1994	Petrochemical
Lamargas T-101Compressor Upgrade	"Turn Key" Project, normal operation, normal shutdown secuence, emergency shutdown and Fire & Gas detection System for Lamargas T-101 turbocompressor. Interfaces developo, control applications (governor control), material and equipment supply, construction, commissioning and start up.	MARAVEN	Maracaibo Lake	1994	Oil & Gas
Emergency Shutdown of Lamarlíquido compressor off shore plant	Instrumentation, data adquisition system and Lamargas Power Generation Plant control Basic and Detail Engineering. Create Data Base, logic design, construction assistance, Plant start up and shutdown, testing, control system commissioning and start up.	MARAVEN	Maracaibo Lake	1994	Oil & Gas

GENERAL EXPERIENCE TABLE

PROJECT	SCOPE OF WORK	Client	Location	Compl. Date	Industry
Isobutane storage control sequence in the S-505 tank	Detail Engineering, design, configuration and secuencial control develop for Tank (S-505) Isobutane storage. Additionally, MCL CONTROL S.A. represents MARAVEN as installation inspector; calibration; control system commissioning and start up	MARAVEN	Bajo Grande	1993	Refining (Oil & Gas)
La Paz-Ceutagas Gas Compression Plant Update	Reinstrumentation Plants Basic Engineering and control system addition. Included Instrumentation, process control, automation, Distributed control and equipment supply.	MARAVEN	Maracaibo	1993	
Depalletizer Machine Automation	Engineering, Design, construction, installation, connection, commissioning, start up, for Bottle depalletizer machine automation	GOLDEN-CUP	Los Teques	1993	
Steam Distribution Network Simulation (RSI).	Steam Distribution Network Simulation for Maraven's Cardon Refinery. Developing Platform: IBM PC Compatible. Final Platform: Honeywell TDC 3000 Application Module	MARAVEN	Refinery Cardon	1992	Refining (Oil & Gas)
Electrical Substations Detail Engineering	Electric Substation Supervision system (SCADA) Basic Engineering, such as field instrumentation audit and P&IDs update.	CORPOVEN	Puerto La Cruz Refinery	1992	Refining (Oil & Gas)
Sumandes SCADA System Inspection Construction Instrumentation and Control	Representing MARAVEN as inspector of field instrumentation and SCADA system installation, calibration, commissioning and start up of Bajo Grande-El Vigia Poliduct and Distribution Plants: Bajo Grande, San Lorenzo, El Vigia.	MARAVEN	Bajo Grande	1992	
Conceptual Engineering for the Automation of the Palito Lube oil Plant	Conceptual Engineering for the Automation of El Palito Lube Oil Plant (fill train and products mix in line)	CORPOVEN	El Palito	1992	Refining (Oil & Gas)
Zeolite Plant Basic/Detail Engineering	Instrumentation and Control Detailed Engineering for a Water Treatment Plant.	CORPOVEN	Puerto La Cruz Refinery	1991	Refining (Oil & Gas)
Conceptual and Basic Engineering; commissioning of LPG Plant Compressors control strategies	Design, Configuration, Loading, Documentation, Commissioning, Start up, Tuning of antisurge control algorithms	PEQUIVEN	El Tablazo	1990	Oil & Gas
Start up sequence and flame safeguard of boilers: 9,10,11 y 12. ASVAP Project.	Design, Honeywell equipment implantation and testing, control strategies, optimun Distribution, start up secuencia, boilers 9, 10, 11 and 12 protection and flamesafeguard. Simulation developpe and implantation for strategies testing and training.	PEQUIVEN	El Tablazo	1989	