



Engineering and EPCM Services



# Engineering Services Overview

## CONTACT

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**PHONE:**  
+1 346-412-6062

**WEBSITE:**  
[radicalingenuity.com](http://radicalingenuity.com)

**EMAIL:**  
[inquiry@radicalingenuity.com](mailto:inquiry@radicalingenuity.com)

*' Radical Ingenuity provides repeatable, reliable  
and accurate Engineering Services from discrete  
system to turnkey solutions  
...with stellar customer service '*

- PROJECT MANAGEMENT
- PROCESS ENGINEERING
- MECHANICAL ENGINEERING
- CIVIL/STRUCTURAL ENGINEERING
- ELECTRICAL ENGINEERING
- INSTRUMENTATION ENGINEERING
- DESIGN & DRAFTING
- PROCUREMENT
- CONTROLS & AUTOMATION
- CONSTRUCTION MANAGEMENT
- OPERATIONS AND COMMISSIONING SUPPORT
- FUNCTIONAL SAFETY
- 3D LASER SCANNING
- INFORMATIONAL TECHNOLOGY
- ON SITE SERVICES
- FACILITIES DEVELOPMENT
- HEMP/EXTRACTION FACILITY DESIGN
- FOOD PLANT ENGINEERING
- ROUTE CAUSE ANALYSIS / FAILURE INVESTIGATION

See over for a detailed list



Project Planning, Coordination & Scheduling  
 Construction Management & Support  
 Total Installed Cost (TIC) Estimating  
 Cost Controls / Reporting  
 Procurement Support  
 3rd Party Representation  
 Document Control  
 Interface Control  
 Onsite Project Management  
 Conceptual Design  
 Feasibility, Economic, and Environmental Studies  
 FEED Packages  
 Debottlenecking Studies  
 Process Equipment Sizing  
 Dehydration & Condensate Disposal  
 Hydrocarbon Condensate Stabilization  
 SIL Analysis  
 Flare & Relief Systems  
 Process Simulation Modeling  
 H2S & CO2 Removal Systems  
 FCC/Alkylation  
 Delayed Coking  
 Naphtha/Gasoline Fractionation  
 Hydrotreating/Hydrocracking  
 Vapor Recovery  
 Distillation  
 Dispersion Modeling  
 Dust Containment  
 Operational Procedures  
 P&ID Development  
 Facility Walkdowns / As-built drawing development  
 Separator Sizing / Specification  
 Heat Exchanger Sizing / Specification  
 Pump Specifications / Data Sheets  
 Compressor Specifications  
 Sump Tank Sizing / Design  
 Utility System Design (Fuel Gas, Instrument Gas, Instrument Air)  
 Linesizing Calculations  
 Hydraulic Studies / Flow Assurance  
 Piping Wall Thickness Calculations (B31.3, B31.4, B31.8)  
 PSV Sizing Calculations  
 Flare / Vent / Relief System Analysis Control Valve Sizing / Data Sheets  
 Control Valve Sizing / Data Sheets  
 Meter Sizing  
 Valve Specifications (manual and actuated)  
 Equipment Skid Design  
 Vendor Drawing Review / Approval  
 Facility Cost Estimates (TIC)  
 Construction Specifications / SOW  
 Design, Assessment, & Repair of offshore and onshore process structures  
 Design of Offshore Wind Turbine Foundations  
 Design, Assessment, & Repair of ship and barge docks including OptiMoor Analysis  
 Design of Blast Resistant building modules and structures  
 Fabrication and Installation Support Analyses including transportation, rollup, float, and lift  
 Damage Inspection and Remediation  
 Abandonment & Decommissioning  
 Pipe Racks including Anchor and Guide design for high temperature lines  
 Pipe & Tray support design  
 Preparation of Inspection Scopes of Work  
 Finite Element Analysis  
 Verification of Installation Tolerances

Rig Load Analysis  
 Precast Platform Design  
 Material Handling Studies  
 Monorail and Bridge Crane Design according to CMAA  
 Aluminum Design  
 Reinforced Concrete Design  
 Timber Design  
 Well Pad Design  
 3rd Party Reviews / CVA's  
 Surveying, layout, grading plans, and drainage  
 Tank Farm Layout per NFPA 30  
 Design of tank foundations and containment structures  
 Dynamic, Fatigue, and Seismic Analysis  
 Reciprocating Compressors and Equipment foundation design  
 Horizontal Directional Drill (HDD) design  
 Paving Design  
 Storm Water Pollution Prevention Plans (SWPPPs) for construction  
 Permitting  
 Railway Design  
 API 1102 Road & Railroad crossing calculations  
 API 1117 In-Service Pipeline Lowering Stress Calculations  
 Track Loading Calculations  
 Barlow Calculations  
 Storm Water Retention Ponds  
 NFPA Compliance Checks  
 FEMA P-55 Coastal Construction Manual Flood Calculations  
 Utility Service Coordination  
 Electrical System Design Basis  
 Electrical Area Classification  
 Power System Analysis, Load Studies  
 Coordination Studies  
 Arc Flash Analysis, Short Circuit Analysis  
 Power Factor Correction  
 Overcurrent Protection  
 Conductor/Cable Sizing Analysis  
 Voltage Drop Analysis  
 One Line Diagrams  
 Electrical Schematics  
 Motor Control Schematics  
 Conduit Sizing and Routing  
 Electrical Facility Design & Layouts Including:  
 Electrical Heat Trace System Design  
 DC Battery Systems Design  
 Power Generator System Design  
 Remote Operations & Control System Interface  
 Instrumentation and Control Design Basis  
 Control System Interface Development & Design  
 SAFE Charts  
 Cause and Effect Control Matrix  
 ESD Control Matrix  
 Instrument Indexes, I/O Lists  
 Conduit and Cable schedules  
 Tubing Schedules  
 Instrument Equipment Specification  
 Fiber Optic Communication System Design  
 Pneumatic Control Design  
 Fire Detection System Design  
 Gas Detection System Design  
 General Alarm System Design  
 Instrumentation Facility Design  
 Manufacturer Drawing Review, Coordination and Approval  
 E&I Field Support and Trouble Shooting Assistance

Piping drawings  
 Isometrics, Civil / Structural drawings  
 I&E drawings  
 Software Capabilities:  
 2D and 3D multi-discipline CAD modeling  
 AutoCAD, Autodesk Plant, PDMS, CADWorx  
 Procurement planning  
 Scheduling  
 Bid document assembly, handling, & evaluation  
 Purchasing support  
 Expediting  
 Material Receipt  
 Vendor data control  
 Contract Negotiation  
 PLC & DCS programming / configuration  
 HMI development & integration  
 Graphical operator interface configuration  
 Operational Technology  
 Commissioning & start-up support  
 Control systems cybersecurity  
 Control Narratives  
 Control System Network Architecture  
 Control Panel Designs  
 Our controls & automation division has the following supported networks:  
 Ethernet, ControlNet, DeviceNet, HART  
 Foundation Fieldbus, MODBUS  
 Profibus, Legacy networks, ProfiNet  
 Construction Management  
 Projects and Turnaround Planning  
 Fabrication Coordination  
 Materials & Logistical Management  
 POB Management  
 Task-Specific Field Execution  
 Cost Tracking (Real-Time)  
 Turnaround Execution Planning  
 Operating, start-up & commissioning procedures  
 Operator training & evaluation  
 MOC procedures & alignment  
 Regulatory compliance assistance  
 Personnel competency assessment programs  
 Training manual development  
 On-site support personnel  
 HSE support  
 PHA/HAZOP Review and SIL Determination  
 SIL Verification Studies  
 Alarm Rationalization Workshops  
 ISA 84/IEC 61511 Assessments and Certification  
 ISA 84/IEC 61511 Compliance Procedure Development  
 Process Safety Support  
 Consequence Models  
 Control System Cybersecurity  
 IT Support Help Desk  
 IT Support Remote Monitoring and Maintenance  
 IT Support Security Solutions  
 IT Support Vendor Management  
 IT Support Hardware / Software Sales & Support  
 IT Support Print / Scan / Document Management  
 IT Desktop Support  
 IT Network / Server Support  
 IT Support Cloud Solutions  
 IT Support Managed Services

## radicalingenuity.com

+1 (346) 412-6062

Radical Ingenuity Group is a Consulting and Assurance company for all your technical compliance requirements across multiple industries