



Bettina Chastain
General Manager

Emerald Consulting Group LLC (EMERALD) is a specialized engineering and consulting services company whose corporate office is located in Anchorage, Alaska. We serve the needs of clients who are driving improvements in efficiency, innovation, risk management, and operational assurance. Our diverse public and private clients are located throughout the U.S. and internationally.

The firm provides technical consulting services in the following areas of expertise:

- **Process/Facility Engineering & Design**
- **Process Safety & Risk Management**
- **Policy & Procedure Development**
- **HSE Management Systems**
- **Integrity Management**
- **Technical Training**

EMERALD is focused on adding value and a unique perspective to each project. The EMERALD team is staffed by a dynamic group of professionals who are excited about providing high-impact and world-class service. We seek out clients who are focused on operational excellence and share our values.

For questions or more information about EMERALD, please contact us at:

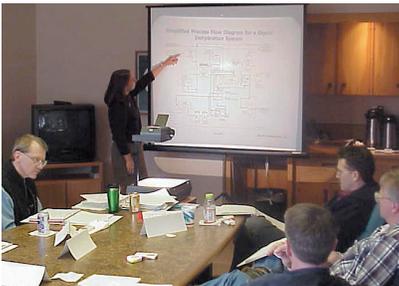
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Technical Training

EMERALD provides consulting services for the development and delivery of a wide-range of training courses, including basic technical overview courses for oil and gas facility operations and curriculum that is structured to provide client personnel with the knowledge necessary to implement and comply with the Process Safety Management (PSM) and Risk Management regulations.



The courses are designed to address the unique requirements of the client personnel and can be customized for delivery on-site, at the client facility. The customer saves both time and money by

allowing a large group of personnel to be trained at home and on their schedule, which minimizes travel expenses and the time spent off-site and away from work. When we bring our experts to you, there is significant savings to be realized in the costs of providing required job training to your personnel.

Courses may be introductory classes for new personnel who are just entering a specific facility or for existing employees requiring additional training to fulfill their job duties. EMERALD's training

services also include Management of Change (MoC) training and refresher training to educate experienced personnel in new systems or modifications that are being implemented.

EMERALD's course instructors can provide support in developing a training structure which can be utilized in conjunction with new or existing facility operating procedures to provide a complete and efficient training platform for operations personnel. The EMERALD consultants can also facilitate training courses for both operations and non-operations personnel, including procedure-specific training, site orientation and health and safety considerations.

EMERALD provides the following Technical Training services:

- Process Safety Management (PSM) Overview
- Risk Management Program (RMP) Class
- Introduction to Process Hazards Analysis (PHA)
- Risk Assessment Facilitator Course
- PHA Leader Training
- Operator Training
- Oil and Gas Surface Facilities Training
- Introduction to PLCs for Instrument Techs and Electricians
- Operating Procedures Refresher Training
- EMS (Environmental Management Systems) Workshops
- Management of Change (MoC) Training

Integrity Management

EMERALD provides consulting services designed to accommodate industry's growing focus on the management of equipment and system integrity. Facility integrity management is critical to safe operations, prevention of incidents, protection of the environment, and impact to company reputation. EMERALD assists clients with comprehensive integrity management programs that are integrated into the overall operational model of the business.



The services provided by the EMERALD specialists are an effective tool for understanding the risks associated with your operations, and managing those risks through efficient and effective policies,

processes, programs, and procedures. Whether your operations involve the management of a mature asset, or development of a new project, a well developed integrity management process delivers the business assurance expectations of internal and external stakeholders.

Integrity management is integral to comprehensive health, safety, environmental, quality, and security management systems. EMERALD's knowledge and experience with world-class management systems lends a unique perspective to advising clients on using existing processes to work in harmony.

Leading companies are recognizing that integrity management is one of the most important emerging opportunities for business improvement. EMERALD provides the expertise and support to make step changes in performance that deliver on the bottom line.

EMERALD provides the following Integrity Management services:

- Integrity Management System Development
- Operations Gap Assessments
- Mechanical Integrity Program Implementation
- Safety Critical Equipment Identification/Analysis
- Management of Change (MoC)
- Safe Operating Procedures
- Risk Management Policies and Procedures
- Incident Investigations
- Risk Assessments
- Major Accident Hazard Assessments
- Emergency Response Planning
- Performance Management and Assurance Systems
- Electronic Data Management

HSE Management Systems

Health, Safety and Environmental (HSE) performance is becoming the standard by which leading companies are being measured in the marketplace. Structured HSE management systems provide the basis for HSE performance delivery and lead to compliance assurance, efficiency, reduced liabilities, business certainty, and internal innovation.



The EMERALD staff specializes in providing strategic HSE consulting and HSE management system integration services to local, national, and international clients. EMERALD provides diverse teams of

senior professionals to meet the scale of the client's needs.

The EMERALD staff has hands-on experience designing, integrating, and implementing structured

HSE management systems that meet international standards such as ISO 14001. The staff at EMERALD has a unique HSE technical and strategic perspective focused on delivering the overall business needs of the client's organization.

EMERALD provides the following HSE Management Systems services:

- Strategic HSE Reviews and Planning
- HSE Policy Development
- Development and Implementation of Integrated Management Systems
- ISO 14001 Certification and Environmental Management System Development
- OSHA 18001 Certification and Occupational Health and Safety Management System Development
- Integration of Internal Corporate HSE Expectations
- Benchmarking and Performance Indicators
- Training and Executive Coaching
- Information Management Systems and Integrated HSE Document Control
- Government and Stakeholder Relations
- Emerging and High-Profile Issues
- Incident Investigation

Policy & Procedure Development

The EMERALD service line supports key areas of the Occupational Safety & Health Administration's Process Safety Management (PSM) Standard, including policy and procedure development. EMERALD's specialized services include the development of new operating policy and procedure systems, as well as revision and maintenance of procedures and policies for existing facilities.



The EMERALD staff consists of a team of proficient technical writers that possess the technical expertise and operating knowledge necessary to provide efficient and effective procedure development services. The basis for successful

implementation of policy and procedure systems includes thorough involvement of operations and facility personnel and effective communication of the procedure intent. Coupled with our specialized

training capabilities, EMERALD is able to provide our clients with the full-service policy and procedure development services they need to meet their business goals.

EMERALD's expertise also includes a thorough working knowledge of the various electronic delivery systems available for managing and distributing a complete procedure system. This knowledge base allows us to provide a complete package of procedure and policy development services.

EMERALD provides the following Policy and Procedure Development services:

- Standard Operating Procedure (SOP) Development
- Field Operating Procedure Development
- Policy and Program Development and Revision
- Audit Policy Development
- Management of Change (MoC) Procedure Revision
- Procedure Maintenance and Administration



Process Safety & Risk Management

EMERALD's process safety and risk management services provide our clients with the expertise necessary to meet their federal, state and internal corporate requirements for process safety. EMERALD's staff consists of highly trained facilitators experienced at utilizing the various acceptable methodologies for implementing process hazard analysis and risk assessment reviews.



The core area of EMERALD's process safety services is the facilitation of Process Hazards Analyses (PHA). Following the requirements of the Occupational Safety & Health Administration's Process Safety Management (PSM) Standard, the EMERALD facilitators and scribes lead team reviews utilizing the recommended methodologies, such as Hazards and Operability (HAZOP) Study,

What-If/Checklist Analysis, and Failure Modes and Effects Analysis (FMEA).

EMERALD's process safety staff also specializes in facilitating other areas of risk management including project-based health, safety and environmental reviews and risk assessment reviews following our client's corporate policies. EMERALD's staff of highly competent professionals can accommodate nearly any client's request for process safety and risk management services.

EMERALD provides the following Process Safety and Risk Management services:

- Process Hazards Analysis (PHA)
- PHA Revalidation
- PHA Assessments
- Project Health, Safety and Environmental Review (PHSER)
- Technical Safety Audit (TSA)
- Risk Assessment
- Hazards Identification Study (HAZID)
- Major Accident Hazards Assessment (MAHA)
- Major Risk Assessment (MRA)

Process/Facility Engineering & Design

EMERALD provides engineering consulting services from conceptual engineering studies through the detailed design phase of new developments or existing facility modifications. Our full line of services includes process simulations to evaluate design options and the preparation of all detailed engineering drawings for the development of construction bid packages.



The EMERALD staff consists of highly competent discipline engineers and project managers. With the support of our sister companies, we have the design-build capabilities to provide a full-service, turn-key

operation to bring new developments on-line under a compressed schedule. The key to our efficient and value-added service is that we can provide the design development, project management, and field construction oversight functions in one

organization, which reduces the overhead and management costs associated with the execution of most projects.

EMERALD also performs plant testing and troubleshooting to help optimize production and identify debottlenecking opportunities for existing and aging facilities. Our staff of process/facility engineers is available to provide on-site engineering support at your facilities for long or short-term assignments.

EMERALD provides the following Process/Facility Engineering services:

- Conceptual Front-End Engineering
- Process Simulation and Modeling
- Detailed Engineering and Design
- Construction Bid Package Development
- Facility Optimization
- Flare Studies and PSV Sizing
- Facility Engineering Support
- Start-Up Engineering Support
- Project Engineering/Management
- Construction/Field Supervision
- Management of Change (MoC)
- DR&R (Dismantlement, Removal and Restoration)