

# PROCESS SAFETY

## PSM Services and Support

Founded in 1974, Trinity Consultants helps organizations overcome complex, mission-critical challenges in EHS, engineering, and science through expertise in consulting, technology, training, and staffing. We support clients in geographies worldwide and across a broad range of sectors including industrial, energy, manufacturing, mining, life sciences, and commercial/institutional.

Provenance Consulting engineers process safety solutions by developing & implementing Process Safety Management (PSM) programs for clients in high hazard industries that comply with OSHA 1910.119, Process Safety Management of Highly Hazardous Chemicals.

Provenance became a Trinity Consultants Company in fall of 2019, and they work seamlessly with our environmental consulting services to offer expanded EHS expertise to our clients.

Service areas include all elements of the PSM regulation, with expanded expertise in pressure relief systems, mechanical integrity programs, process hazard analyses, and process safety information management.

### PHA & Risk Assessment Services

- ▶ Preparatory Services
- ▶ Remote and Co-Located Facilitation and Scribing
- ▶ Reporting
- ▶ Training
- ▶ Revalidation Services
- ▶ Action Item Resolution
- ▶ QA/QC Services

### IPL Lifecycle Services and Support

- ▶ Generate IPL lists from PHA/LOPA databases
- ▶ Validate IPL-related PSI
- ▶ Generate Safety Requirement Specifications (SRS)
- ▶ Calculate Process Safety Time
- ▶ Perform SIL calculations
- ▶ Generate proof test procedures

### Pressure Relief System Services

- ▶ Engineering Design
- ▶ Pressure Relief Analysis & Revalidation
- ▶ Flare and Disposal System Evaluation
- ▶ Process Simulation
- ▶ On-site Engineering Support of Remote Execution
- ▶ Third-party Audits

### Mechanical Integrity Services

- ▶ Equipment Design Validation
- ▶ Vendor Shop Audits and Quality Assurance Inspection
- ▶ Field Inspection to Confirm Proper Installation
- ▶ Inspection Software Implementation and Maintenance,
- ▶ Piping Isometric and Equipment Inspection Drawing Generation and Maintenance
- ▶ Inspection Planning and Analysis
- ▶ Internal/External API Inspections and Nondestructive Examination (NDE)
- ▶ Analysis of Inspection Findings, Corrective Action Identification and Modification of Inspection Plans
- ▶ Generate Repair Plans to Correct Equipment Deficiencies
- ▶ Generate or Validate Alteration and Rerate Plans and Associated Design Calculations



## Process Safety Information (PSI) & Other Services

### PSI Data Management Services

- ▶ PSI Audits and Reviews
- ▶ Validation of Existing PSI (P&IDs, PFDs, Plot Plans, Instrument Loops, etc.)
- ▶ Generation of PSI
- ▶ Data Consistency Checks
- ▶ Data Discrepancy Mitigation
- ▶ Equipment File Reconciliation and Consolidation
- ▶ CAD & Drawing Services
  - Drawing Updates and Generation
  - Custom Menu Development
  - Custom Scripts and Routine Development
  - CAD Standards Development and Implementation, including “Intelligent” Drawings
  - Data Extraction, Import, and Management
  - CAD Training

### Additional Process Safety Services

- ▶ PSM Training
- ▶ Incident Investigation System Implementation
- ▶ Emergency Planning and Response
- ▶ MOC Program Development and Management
- ▶ Compliance Audits
- ▶ Facility Siting
- ▶ PSSRs
- ▶ Procedure Development

## Software Development & Implementation

Provenance Consulting has developed several software applications specifically for the oil, gas, and chemical industries.

### ARTS™ - Asset and Records Traceability System

The ARTS system aggregates data from multiple departments into a single user interface for quick review and evaluation.

### PHA Central™

PHA Central™ is a revolutionary software solution that allows companies to leverage the knowledge and value of their PHA data for better investment in risk mitigation and more consistent risk analysis.

### CERTS - Certification and Employee Refresher Training System

The CERTS application provides a mechanism to track and document activity, satisfying the OSHA PSM Operator Refresher training requirement.

### Custom Software & Utility Development

We maintain a broad level of expertise in the implementation and framework of third-party applications commonly used throughout the oil, gas, and chemical industries.

## Why Choose Trinity and Provenance

In short, there's no better choice for your EHS needs. Our experience is multi-faceted and extensive. Our strategies are innovative, time saving, and cost-effective. Our staff and tools are the best in the business.

For more information about how Trinity can help your organization, please contact our Trinity Provenance office at 806.273.5100.

***ISO 9001:2015 certified at our corporate office in Dallas, Texas***