

PROCESS SAFETY

IPL Lifecycle 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.

From the moment in a PHA when credit is taken for a safeguard as an Independent Protection Layer (IPL), throughout the documentation effort and during the ongoing visual inspection and proof testing process, Provenance Consulting provides support for IPL-related tasks that are required throughout the IPL lifecycle.

Our services are designed to ensure compliance with industry, corporate and facility requirements, ensuring that the work processes and project deliverables incorporated into our client's systems are reflective of industry best practices, corporate standards, and site procedures.

Our Approach

Trinity and Provenance's success is due to our understanding of not only the IPL lifecycle, but of the contributing and dependent systems, processes, and decisions that influence

each IPL. This comprehensive approach ensures that our processes are efficient, deliverables are robust, and the resulting management systems are effective and easily maintained.

Our IPL Services

Trinity/Provenance provides the following services related to the documentation, design and maintenance of new and existing IPLs:

- ▶ **Generate comprehensive IPL Listings** from PHA/LOPA databases and other related data sources, pulling key information together into a single access point for facility personnel.
- ▶ **Validate IPL-related process safety information (PSI)** throughout other facility documentation, drawings and data systems such as operating procedures, DCS systems, P&IDs, and operating limit lists.
- ▶ **Develop IPL lifecycle implementation strategies** based on total facility and IPL risk profiles.
- ▶ **Generate Safety Requirement Specifications (SRS)** or other safety basis document, consolidating IPL functions and PSI into a single document that clearly explains the basis and function of the IPL.
- ▶ **Calculate and document Process Safety Time** (the time from initiation of cause to potential consequence) to ensure adequacy, and incorporate results into SRS documents.
- ▶ **Perform SIL calculations** to determine the Safety Integrity Level of the Safety Instrumented System (SIS).
- ▶ **Schedule and perform field visual inspections** of IPL components.
- ▶ **Generate proof test procedures**, specifying how and when to test the IPL to confirm successful operation in accordance with the SRS. Perform and/or facilitate proof tests.
- ▶ **Ensure PHA action items are implemented** in accordance with the IPL requirements prior to closure.
- ▶ **Execute design projects related to IPLs**, including both new IPL design and modification to existing IPLs.

Trinity and Provenance Can Help

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

For more information about how Trinity and Provenance can help your organization, please contact Provenance Consulting at 806.273.5100 or 281.206.7079.

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