Amanda Fenyves

SENIOR PROCESS ENGINEER

Integral Engineering Group

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SKILLS

Hazard Analysis	MathCAD
Process Design	AutoCAD
Aspen HYSYS	MS Excel
ChemCAD	MS Access

CERTIFICATIONS

Active DOE Q Clearance

EDUCATION

Bachelor of Science

Chemical Engineering

University of Tennessee, Knoxville

2005-2010

Master of Business Administration

University of Tennessee, Knoxville

2010-2011

PROFILE

Chemical Engineer with more than 12 years of experience in commercial and nuclear process design and documentation. Proficient with various industry-accepted process simulation programs used for process design, optimization, and debottlenecking. Extensive safety analysis background and knowledge of OSHA, EPA, ISA, and NRC regulations. Specializes in process and safety instrumentation controls and process information documentation.

EXPERIENCE

Project Engineer

Integral Engineering Group / Various Clients / January 2019 to Current

Chemical / process engineer providing design and consulting services in a wide variety of client projects.

- Contracted by Global Laser Enrichment, LLC. to support licensing efforts (10 CFR 70) associated with the design of the new LEU Conversion Process at the GLE Test Loop facility in Wilmington, NC, including performance of Integrated Safety Analyses (NUREG-1513), review of Chemical, Radiological, and Fire Accident Consequence Evaluations (NUREG-6410), compilation of Risk Assessments for high consequence scenarios, and design of IROFS systems to mitigate risks. Additionally, tasked with development of a blast analysis to determine blast wave and projectile hazards imposed on the Test Loop facility.
- Contracted by BWXT, Inc. to support licensing efforts (10 CFR 70) associated with the design of the new HEU Conversion and Purification Process at the Nuclear Fuel Services facility in Erwin, TN, including performance of Integrated Safety Analyses (NUREG-1513), review of Chemical, Radiological, and Fire Accident Consequence Evaluations (NUREG-6410), compilation of Risk Assessments for high consequence scenarios, and design of IROFS systems to mitigate risks. Additionally, tasked with development of Design Criteria documentation as well as project deliverable content, such as Process Narratives, Control Narratives, Alarm & Interlock Narratives, IROFS Boundary Definition Documents (BDD), etc., to support the design of the production-scale HEU process.
- Contracted by BAE Systems Ordnance Systems, Inc. to provide process safety analysis for multiple propellant and energetics manufacturing processes across their Holston Army Ammunition and Radford Army Ammunition facilities, including PHA and QRA/LOPA facilitation and documentation.
- Aid commercial clients in the development of their Process Safety Management programs, including development of process information, operating procedures, mechanical integrity programs, and change management programs.
- Perform incident investigations using Root Cause Analysis (RCA) methodology.
- Perform alarm rationalization on conceptual process designs and existing processes and develop alarm management programs in accordance with ANSI/ISA 18.2.
- Develop client Safety Requirement Specification (SRS) and Cause / Effect Diagrams.

EXPERIENCE

Project Engineer (cont.)

Integral Engineering Group / Various Clients / January 2019 to Current

- Development of functional testing documents to help clients test unit interlock systems and document the frequency of testing.
- Perform relief device sizing calculations in accordance with American Petroleum Institute (API) Standard 520 Part 1, API Standard 521, and API Standard 2000.
- Create and/or update Process & Instrumentation Diagrams (P&IDs) for new and existing processes, performing field walkdowns to generate as-built P&IDs as necessary.
- Facilitate and document Process Hazard Analyses (PHAs) for clients to assist in complying with regulatory requirements and helping to ensure safe facility operations.
- Conduct Safety Integrity Level (SIL) Selection Analyses, Layer of Protection Analyses (LOPAs), and Failure Modes and Effect Analyses (FMEA) to help clients incorporate SIL requirements of ANSI/ISA standard 84.00.01 into their Process Safety and Risk Management Programs.
- Incorporation of ISA84 Safety Instrumented Systems Standard (ISA 84 / IEC 61511) / Safety Lifecycle to Safety Instrumented System (SIS) design and configuration, specifically evaluating and designing interlock systems for clients to help incorporate requirements of ANSI/ISA standard 84.00.01 (IEC 61511 Mod), making recommendations for improvement, as necessary.
- Review and evaluation of distributed control system (DCS) and safety system (SIS) logic to determine all interlock and existing instrumentation details and performing SIL verification to ensure the safety instrumented system meets the requirements of the interlock's SIL level.

Project Engineer

Edgewater Technical Associates, LLC - Nuclear Fuel Services, Inc. / Erwin, TN / January 2019 to December 2020

Participated as a project engineer working on engineering design and analysis tasks for the Fuel Production Facility at the BWXT Nuclear Fuel Services site.

- Provided engineering support and project management for multiple projects (process modernization, site-wide PLC network installation, wastewater treatment evaporation system, etc.).
- Coordinated and managed project resources and deliverables on a daily basis and developed and set project schedules weekly.
- Led multi-disciplinary design teams and ensured designs met customer requirements and schedule.
- Developed process design documentation (such as Process Narratives, Heat and Material Balances, Control System & Interlock Narratives, Design Calculations, and P&IDs) for fuel manufacturing processes.
- Ensured all design documentation was reviewed by various disciplines to minimize design flaws.
- Interfaced regularly with various facility support groups (Environmental Safety, Integrated Safety, Nuclear Criticality Safety, etc.) to ensure current design satisfied all group safety and regulatory requirements.
- Designed and specified process equipment for several process modernization and wastewater treatment projects, also helping the client with subsequent vendor selection and project implementation management.
- Assembled formal work packages for field construction, including development of work instructions.
- Redlined drawings and submitted as-builts to ensure drawings accurately reflected field conditions.

EXPERIENCE

Process Engineer

Process Engineering Associates, LLC / Oak Ridge, TN / January 2012 to December 2018

Participated as a process engineer working on engineering design and analysis tasks for various clients in the commercial and specialty chemical industries.

- Industrial experience includes petroleum refining, petrochemical production, batch and continuous chemical production, bulk chemical storage, PLC network design and implementation, wastewater treatment, and nuclear material processing and remediation.
- Built and modeled process simulations using platforms such as ChemCAD, Aspen HYSYS, and Microsoft Excel.
- Aided clients in the development of their Process Safety Information (PSI), including Process Flow Diagrams (PFD), Process Narratives, Process & Instrumentation Diagrams (P&ID), Heat and Material Balances (HMB), Control System & Interlock Narratives, and Design Calculation documentation.
- Validated DCS and equipment configuration for field equipment and updated corresponding P&IDs.
- Verified Process & Instrumentation Diagrams and Process Flow diagrams for the various clients' facility through process piping walkdowns and the update of process instrumentation documentation.
- Facilitate and document Process Hazard Analyses (PHAs) for clients to assist in complying with regulatory requirements and helping to ensure safe facility operations.
- Conduct Safety Integrity Level (SIL) Selection Analyses, Layer of Protection Analyses (LOPAs), and Failure Modes and Effect Analyses (FMEA) to help clients incorporate SIL requirements of ANSI/ISA standard 84.00.01 into their Process Safety and Risk Management Programs.
- Aid clients with alarm rationalization studies to systematically optimize the alarm database for the safe and efficient operation of the facility by prioritizing alarms, validating alarm parameters, and evaluating alarm organization and presentation, as well as evaluating alarm functionality.
- Conduct PSM and RMP Compliance Audits at client facilities to satisfy the OSHA PSM regulation, 29 CFR 1910.119, and the EPA RMP regulation, 40 CFR 68. Aid clients in the resolution of action items stemming from Compliance Audits, affording considerable experience in development of process documentation.
- Develop client Safety Requirement Specification (SRS) and Cause / Effect Diagrams.
- Incorporation of ISA84 Safety Instrumented Systems Standard (ISA 84 / IEC 61511) / Safety Lifecycle to Safety Instrumented System (SIS) design and configuration, specifically evaluating and designing interlock systems for clients to help incorporate requirements of ANSI/ISA standard 84.00.01 (IEC 61511 Mod), making recommendations for improvement, as necessary.
- Review and evaluation of distributed control system (DCS) and safety system (SIS) logic to determine all interlock and existing instrumentation details and performing SIL verification to ensure the safety instrumented system meets the requirements of the interlock's SIL level.
- Development of functional testing documents to help clients test unit interlock systems and document the frequency of testing.
- Perform pressure relief device calculations, including evaluation of all identified overpressure scenarios and determination of the controlling relief case.