# INTEGRAL ENGINEERING GROUP, LLC

## COMPANY PROFILE

Integral Engineering Group is a **woman-owned small business (WOSB)** owned and managed by engineers that focuses on offering engineering design services to the commercial chemical, specialty chemical, petrochemical, refining, nuclear, energy, and manufacturing industries.

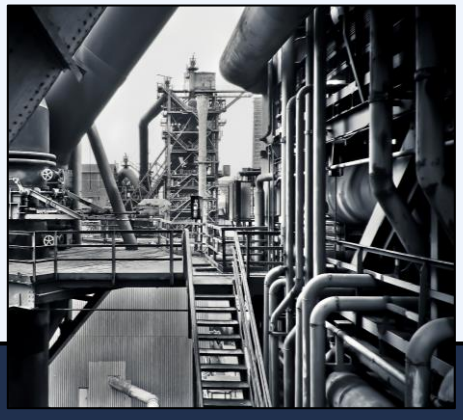
## CONTACT US

Integral Engineering Group, LLC
136 Mitchell Road
Oak Ridge, Tennessee 37830

**PHONE:** (865) 268-4270
**WEBSITE:** www.iegroup-llc.com
**EMAIL:** info@iegroup-llc.com

## DESIGNATIONS

**DUNS**: 116938967
**CAGE CODE**: 883M9
**NAICS CODES:**
541330 Engineering Services
541340 Drafting Services
541690 Other Technical Services
561320 Temporary Staffing
**FACILITY CODE:** 16606



## CAPABILITY STATEMENT

We work collaboratively with our clients to provide them excellence in a wide range of engineering services, utilizing chemical, electrical, mechanical, and civil/structural engineers and technicians who are experts in their respective fields. We support our clients to solve a wide range of critical engineering problems.

## WHAT WE DO

***General***
- Process Design (Multi-Disciplinary) & Project Management
- Engineering & Technical Staff Augmentation

***Chemical / Process***
- Process Information Development & Documentation
- Process Hazard and Risk Analysis (PHA / QRA / PRA)
- Safety Instrumented System (SIS) Design and Implementation
- Process and Instrumentation Diagram (P&ID) Development
- Alarm Management & Rationalization

***Mechanical***
- Drafting & 3D Modeling
- Process Equipment & Instrument Specification
- Relief Device Sizing
- Piping Design, Layout, & Stress Analysis
- Building Ventilation & HVAC Design
- Fire Protection System Design & Evaluation

***Structural***
- Structural & Seismic Assessment
- Equipment Support & Anchorage Design
- Containment Structure Design
- Access Platform, Stairway, & Ladder Specification

***Electrical***
- Control System and Power Design
- Arc Flash Studies & Mitigation

**CURRENTLY WORKING TOWARD CMMC COMPLIANCE!**

# INTEGRAL ENGINEERING GROUP, LLC

## PERFORMANCE HISTORY

***Nuclear Fuel Services (BWXT)***
PoP: 03/2021 to Present
Value: $500,000
Contact: Ken Givens
1205 Banner Hill Rd
Erwin, TN 37650
krgivens@bwxt.com

***PROJECT: LICENSING AND DESIGN OF URANIUM METAL PURIFICATION AND CONVERSION SYSTEM***

Providing ongoing engineering support for the licensing and design of a Uranium Metal (U-Metal) Purification and Conversion System for construction at the Nuclear Fuel Services (NFS) facility in Erwin, Tennessee. IEG is updating existing NFS site documentation to include new U-Metal process descriptions and accident scenario information. Relevant Hazard Analyses, Risk Assessments, and Accident Consequence Evaluations were performed to ensure impacts were well within regulatory limits and performance requirements of 10 CFR 70.61. Additionally, IEG is providing ongoing process engineering support by performing process calculations, documenting process information, specifying equipment and instrumentation controls, generating data sheets, creating IQ/OQ/PQ test plans, and providing input for system operating procedures.

***Johnson Controls Federal Systems, Inc.***
PoP: 01/2022 to Present
Value: $15,000
Contact: Bruce Fisackerly
3442 Starway Drive
Bartlett, TN 38135
bfisackerly@aec-inc.net

***PROJECT: SUPPORT FRAME FOR Y-12 NATIONAL SECURITY COMPLEX CHILLER REPLACEMENT***

Providing structural design, analysis, and construction documentation for the structural support frame of a replacement chiller over an existing chiller water basin. As part of an effort to increase efficiency and lower maintenance costs, many aged chillers at the Y-12 Complex in Oak Ridge, Tennessee are being replaced. IEG performed site visits to as-built the existing chiller basin. Using Autodesk Revit and RISA-3D, IEG is analyzing and optimizing the support frame for loads including seismic and wind in accordance with ASCE 7 and AISC 360. When drawings of existing infrastructure are unavailable, IEG is making conservative, verifiable assumptions to keep the project moving forward. Project deliverables include a detailed calculation report for the chiller frame and frame connections, design drawings, and construction specifications.

***BAE Systems, Ordnance Systems Inc.***
PoP: 04/2020 to 11/2020
Value: $113,143
Contact: Bryan Long
4509 West Stone Drive
Kingsport, TN 37660
bryan.long@baesystems.com

***PROJECT: HAZARD ANALYSES OF WAARP AND ANSOL TANK FARMS***

Provided process hazard analysis (PHA) and semi-quantitative risk assessment (QRA) using layers of protection analysis (LOPA) services of the Weak Acetic Acid Recovery (WAARP) Tank Farm and the Ammonium Nitrate Solution (ANSol)Tank Farm for BAE Systems, OSI at the Holston Army Ammunition Plant in Kingsport, Tennessee as part of BAE's contract deliverables package to their customer (U.S. Department of Defense). Project deliverables included preliminary and final design analysis reports summarizing the findings of each analysis and a list of recommendations with technical basis justification. Additionally, facility siting and human factors was analyzed for each process and summarized. The analyses met all requirements as stated in paragraph (e) of OSHA's process safety management (PSM) regulation, 29 CFR 1910.119 and part 68.67 of EPA's risk management program (RMP) regulation, 40 CFR 68.

# INTEGRAL ENGINEERING GROUP, LLC

## PERFORMANCE HISTORY

***Atkins Global Nuclear Secured***
PoP: 01/2022 to Present
Value: $95,000+
Contact: Glenn Diener
10330 Old Columbia Road
Columbia, MD 21046
glenn.diener@atkinsglobalns.com

***PROJECT: ONGOING ENGINEERING DESIGN SUPPORT OF THE LITHIUM PROCESSING FACILITY (Y-12 COMPLEX)***

Providing ongoing engineering support for the design of the Lithium Processing Facility at the Y-12 National Security Complex in Oak Ridge, Tennessee. IEG is updating existing Y-12 site documentation to include process descriptions and calculations. Personnel provide ongoing process engineering support by performing necessary process calculations, documenting process information, specifying equipment and instrumentation controls, generating data sheets, addressing customer comments, creating test plans, and providing input for system operating procedures.

***Nuclear Fuel Services (BWXT)***
PoP: 12/2021 to Present
Value: $13,700+
Contact: Jason Ward
1205 Banner Hill Rd
Erwin, TN 37650
jkward@bwxt.com

***PROJECT: ONGOING ENGINEERING SUPPORT OF VARIOUS ENGINEERING PROJECTS***

Providing ongoing engineering support for various engineering projects at the Nuclear Fuel Services (NFS) facility in Erwin, Tennessee. Tasks to date include performing necessary pressure vessel relief calculations and relief device system design in compliance with API RP 520 Part I and API Standard 521.

***Boston Government Services***
PoP: 06/2021 to 08/2021
Value: $7,700
Contact: Chris Dean
105 Mitchell Road,
Suite 201
Oak Ridge, TN 37830
cdean@bgs-llc.com

***PROJECT: LICENSING STUDY AND CONCEPTUAL FACILITY ENGINEERING FOR A PILOT NUCLEAR FUEL FABRICATION FACILITY***

Provided structural engineering consulting services for a pilot nuclear fuel fabrication facility. IEG performed a code compliance review and permitting study to determine facility structural requirements under NUREG-1520, DOE STD-1020, and International Building Code. The client was considering purchasing an existing facility to utilize as the pilot plant facility. IEG assessed the facility for structural regulation compliance and made recommendations and cost estimates for necessary infrastructure upgrades. IEG provided specific insight on the classification of the structure, natural phenomena hazards (seismic, wind, tornado, and flooding), and performed preliminary analysis on the foundation, building slab, superstructure, and building envelope.

# INTEGRAL ENGINEERING GROUP, LLC

## PERFORMANCE HISTORY

***Boston Government Services***
PoP: 05/2021 to 06/2021
Value: $3,200
Contact: Chris Dean
105 Mitchell Road,
Suite 201
Oak Ridge, TN 37830
cdean@bgs-llc.com

***PROJECT: SEISMIC REVIEW OF CHILLER EQUIPMENT SEISMIC QUALIFICATION TEST PLAN AND RESULTS***

Performed an independent review of the seismic qualification test plans and the qualification test plan results for replacement chillers and associated mechanical and electrical equipment at TVA's Watts Bar nuclear power plant. The replacement chillers were safety class equipment that had to be seismically qualified per IEEE 344. IEG reviewed the seismic qualification test plans and provided comments and input of critical test parameters. Additionally, IEG briefed the client with an interpretation of the seismic qualification test plan results and provided a summary of evaluation gaps between the test plan and results received. IEG's contributions to the seismic qualification test plans and interpretation of test plan results were found valuable by the client and the test plan engineers.

***Nuclear Fuel Services (BWXT)***
PoP: 10/2020 to 11/2020
Value: $27,000
Contact: Mike Anderson
1205 Banner Hill Rd
Erwin, TN 37650
mwanderson@bwxt.com

***PROJECT: PROCESS HAZARD ANALYSIS OF THE APL PROCESS***

Provided process hazard analysis (PHA) and semi-quantitative risk assessment (QRA) using layers of protection analysis (LOPA) services of the Advanced Product Line (APL) process for NFS at their facility in Erwin, Tennessee as part of NFS's effort to satisfy contract requirements to their customer (Knolls Atomic Power Laboratory [KAPL] and U.S. DoE, Naval Reactors Program). Project deliverables included a preliminary design analysis report summarizing the findings of the analysis and a list of recommendations with technical basis justification. Additionally, facility siting and human factors was analyzed for the process and summarized. The analysis met all requirements as stated in paragraph (e) of OSHA's process safety management (PSM) regulation, 29 CFR 1910.119 and part 68.67 of EPA's risk management program (RMP) regulation, 40 CFR 68.

***Process & Safety Solutions, LLC***
PoP: 04/2020 to 06/2020
Value: $8,000
Contact: Ric Hartung
2734 Sunrise Blvd
Suite 309
Pearland, TX 77584
ric.hartung@pssolutions-llc.com

***PROJECT: PRESSURE RELIEF DEVICE EVALUATION OF EXISTING RELIEF DEVICES***

Performed an evaluation of existing pressure relief devices for Process & Safety Solutions, LLC (PSS) as part of its contract requirements with the XTO Energy Hawkins Gas Plant, a subsidiary of ExxonMobil. The required size and capacity of each relief device was calculated using API RP 520 Part I and API Standard 521. After analyzing all overpressure scenarios for each relief device to determine the controlling case, the required relief capacity and the actual relief capacity of each relief device was compared. Deliverables included a report summarizing all relief calculations and a list of recommendations for any devices found to be undersized for its service, along with technical basis justification.