



# PASCHAL SOLUTIONS, INC.

Providing Safe and Efficient Engineering Solutions

## CAPABILITY STATEMENT

### Small Business

**SAM UEI: KJJPHYSZFKC6**  
**CAGE Code: 1WHJ9**

#### NAICS Codes:

**541330**  
Engineering Services

**541611**  
Administrative Management  
and General Management  
Consulting Services

**541690**  
Other Scientific and  
Technical Consulting  
Services

**541715**  
Research and Development  
in The Physical, Engineering,  
and Life Sciences


**541990**  
All Other Professional,  
Scientific, and Technical  
Services

**561110**  
Office Administrative  
Services

**561210**  
Facility Support Services

**562910**  
Remediation Services

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 Paschal Solutions, Inc.



## CONTACT INFORMATION

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Founded in 2000, Paschal Solutions, Inc. (PSI) provides engineering and technical services to commercial nuclear industry and federal government programs, including the Department of Energy, National Nuclear Security Administration, and Department of Defense. PSI specializes in Nuclear Safety (NS), Nuclear Criticality Safety (NCS), licensing, Nuclear Material Control and Accountability, and Nondestructive Assay technical services. PSI has a reputation of providing high quality engineering solutions and has assembled one of the highest concentrations of NCS and NS experts in the industry. PSI's experience spans from uranium enrichment, uranium processing, and fuel fabrication for advanced reactors to Decommissioning and Decontamination (D&D) of nuclear facilities. PSI is a Tennessee based Small Business with decades of experience, demonstrated capabilities, and long-term customer relationships.

## CORE COMPETENCIES



### Nuclear Safety

- Nuclear Criticality Safety
- Nuclear Safety
- Nuclear Material Control & Accountability
- Integrated Safety Analysis
- Shielding Analyses
- SCALE & MCNP Validation
- NRC License Development
- Criticality Accident Alarm System (CAAS)
- Regulatory & Licensing



### Engineering Services

- Fire Protection
- Radiation Protection
- Design Engineering
- Configuration Management
- Nondestructive Assay
- Transportation Packaging



### Quality Assurance

- NQA-1 Audits & Assessments
- Safety Culture Reviews
- Human Performance Improvement

## PAST PERFORMANCE

- American Centrifuge Plant  
High-Assay Low Enriched Uranium (HALEU)  
Demonstration Program
- TRISO-X Fuel Fabrication Facility
- Westinghouse Columbia Fuel Fabrication Facility
- Portsmouth Paducah Project Office
- Paducah Gaseous Diffusion Plant
- Portsmouth Gaseous Diffusion Plant
- Y-12 National Security Complex
- Uranium Processing Facility
- Dounreay Site Restoration Ltd.



## DIFFERENTIATORS

- Highest concentrations of nuclear criticality safety and nuclear safety experts in the business with majority of technical staff holding Q-Clearances
- Industry leaders in Nuclear Criticality Safety (NCS), Nuclear Safety (NS), Integrated Safety Analysis (ISA), Nuclear Material Control & Accountability (NMC&A), and Criticality Accident Alarm System (CAAS).



U.S. Small Business  
Administration

Mission Assurance Alliance, LLC is an SBA-approved Mentor Protégé Joint Venture between Longenecker & Associates, Inc. and Paschal Solutions, Inc.

# PASCHAL SOLUTIONS, INC.

## DEMONSTRATED PERFORMANCE



### THE NATION'S URANIUM PROCESSING FACILITY

*"Since our original contract award, Paschal has provided exceptional high-performance technical staff for our nuclear safety tasks, and we have always received complimentary acknowledgment from our clients."*

— PPPO Engineering and Operations Technical Services, Program Director

*"This demo project [HALEU Demo] has consistently hit all of its milestones and is on track to make a huge impact for our nation...."*

— Assistant Secretary for Nuclear Fuel Cycle and Supply Chain

PSI provided rigorous criticality safety analyses supporting UPF. The quality of the criticality analyses supporting UPF was noted in the April 2018 assessment report by the Office of Enterprise Assessments stating NCSEs were *"in accordance with DOE standards and were completed in an exemplary manner"* and that each process was *"thoroughly analyzed for the potential for nuclear criticality accidents"*. PSI also developed strategies that were adopted throughout the facility to ensure a consistent approach for addressing NCS aspects related to natural phenomenon and fire protection. PSI was instrumental in DOE's favorable evaluation of UPF's Preliminary Documented Safety Analysis assessment.

PSI provided industry experts in facility operations, project management, safety analysis, NCS, waste management regulatory support, quality assurance, oversight, and NDA for the D&D of the Portsmouth and Paducah Gaseous Diffusion Plants. *"PSI goes above and beyond to meet the needs of the client. PSI has provided staff on short notice to support tasks, such as independent assessments."* PPPO/DUF6 Engineering and Operations Technical Services, Program Director.



### Portsmouth Paducah Project Office

PSI was key to the successful licensing and startup of the High-Assay, Low-Enriched Uranium (HALEU) enrichment operations at the American Centrifuge Plant in Piketon, Ohio. PSI completed all NCSEs, supporting design analysis calculations, NCS software validation, CAAS, detector coverage, and safety analysis documentation. PSI also developed the NMC&A program and coordinated the review of the licensing documentation which was submitted to the Nuclear Regulatory Commission (NRC) and approved by the NRC 9 months ahead of schedule. PSI also worked closely with operations to implement the controls and perform walkdowns and assessments to verify readiness. The NRC completed the Operational Readiness Reviews with no findings and provided authorization for startup 2 months ahead of schedule.

# HALEU

HIGH-ASSAY LOW-ENRICHED URANIUM

# TRISO



PSI has provided NCS, ISA, and NMC&A support for X-energy's TRISO-X, LLC Fuel Fabrication Facility (TF3) as part of the Advanced Reactor Demonstration Program (ARDP). *"The TRISO-X Fuel Fabrication Facility represents the intersection of some of DOE's hard work to bring advanced reactors to commercialization,"* Alice Caponiti, DOE's Deputy Assistant Secretary for Reactor Fleet and Advanced Reactor Deployment.