We’ve come a long way.

- **1971**: Then ‘Link Simulation’, GSE builds first nuclear power plant simulator
- **1993**: GSE Systems was formed
- **1995**: Initial public offering announced (GVP)
- **2010**: EnVision Systems acquired for workforce development software in process industries
- **2014**: Hyperspring acquired to expand training and specialized services
- **2017**: Absolute Consulting acquired to expand procedure and staffing capabilities
- **2018**: True North Consulting acquired for thermal performance and engineering programs
- **2019**: DP Engineering acquired to expand plant engineering capabilities
How we're different now.

GSE Solutions businesses leverage top skills, expertise and technology to provide highly specialized solutions that allow customers to achieve the performance they imagine.
Continuing our legacy in simulation.
Expanding to support end-to-end operational excellence.

**GSE TrueNorth**
Programs + Performance
Specialized expertise in plant thermal performance and engineering programs

**GSE Systems**
Simulation + Solutions
Experts in power full-scope power plant simulation, modeling and on-demand learning
Partners in simulation since 1971

**GSE DP**
Engineering
An EOC provider, delivering high value engineering design and implementation services

**GSE HyperSpring**
Staffing + Training
A trusted network of highly specialized field expertise in training and consulting

**GSE Absolute**
Staffing + Procedures
A large talent network of technical expertise in staff augmentation and procedures
More Value For You

• Additional uses of simulation such as virtual commissioning
• Access to design and operational expertise
• Added simulator resources and assets (ex: Thermal Performance and DVR)
• Enhanced procedures
Our solutions.

**ENGINEERING PROGRAMS**
- ASME OM Code
- In-Service Inspect/Test
- Appendix J
- Balance of Plant
- Engineering Programs Software

**ENGINEERING SERVICES**
- Systems Upgrades
- Life Extension
- License Renewal
- Programs Specialty EOC

**PROFESSIONAL SERVICES**
- Staffing
- Schedule/Plan Estimates
- Project Management
- Procedure Development
- Drafting/Mechanical Design
- Engineering Program Development
- Design for Inspect ability

**PLANT MODIFICATIONS**
- Mechanical, Electrical, I&C
- Civil/Structural
- Fire Protection
- Digital Upgrades

**THERMAL PERFORMANCE**
- Assessment Modeling
- Heat Balance Analysis
- Megawatt Improvement
- Online Monitoring
- Thermal Performance Software

**SIMULATION**
- Virtual Commissioning
- Advanced Modeling
- System Design
- Generic Simulation
- Full-Scope Custom Simulation
- On-Demand Platform

**DECOMMISSION SERVICES**
- Assessment/Readiness
- Procedures
- 10 CFR 72 Compliance
- License Termination

**OPERATIONS SUPPORT**
- Work Management
- Corrective Actions
- License & Regulatory Issues

**TRAINING**
- Assessments
- Certified Instructors
- Turnkey Programs
- On-Demand Training
Your company’s challenges and concerns.

• Meeting and keeping up with regulatory demands

• Loss of knowledge and support due to widening skill gap and aging workforce

• Pressure to perform more efficiently and to remain safe - Delivering the Nuclear Promise

• Cost pressures to make money
Innovation.

- Ownership
- Continuity
- Simplification

Vendors don’t innovate, partners do
Ownership.

- Whose problem is it to solve?
- Will datasets and formats match?
- Who’s responsible for scope gap?
- No one is in charge
- No one sees the big picture
- No one can integrate the parts
- No incentive for individual vendors

One partner to be accountable for all
Continuity.

- SMEs float in and out of project
- Lack of continuity
- Timing of engagement vs other priorities
- Overhead and inefficiencies
- Extra burden on resource if delays
- Disruptive to other projects and tasks

Centralized synergies and processes
Simplification.

- Numerous bids and evaluations
- Multiple negotiations
- Large number of contract actions
- Multiple vendor support requirements
- Multiple payments to process

More efficient, costs effective, and less risk
Applying our expertise & technology.

Your concerns
- Regulatory demands
- Loss of knowledge
- Pressure to perform more efficiently
- Remaining safe
- Cost pressures

Our strategic approach
1. Implementation of regulatory acceptable practices to reduce or optimize testing and inspection
2. Training for bridging knowledge gaps / process standardization / efficiency
3. Long-term outage planning and implementation strategies
4. Software process standardization and data acquisition solutions
5. Hybrid approach to resource attrition
6. Customizable approach for growth

Applying our solutions using our unique capabilities
- DVR solution
- Virtual commissioning
- TSM Enterprise
- Access to real industry experts
- ASME engineering programs
- Electrical I&C services
- R&D programs
A digitalization project example.

**Describe**
- Identify change
- Identify solution & approach
- Define scope & budget
- Scheduling
- Build requirements
- Estimations
- Resource identification

**Design**
- Recommend/select vendor
- Documentation
- Licensing impact
- QA review
- Cyber impacts
- Failure Mode Effects and Analysis (FMEA)
- Key design inputs
- Preliminary analysis
- Engineering Programs analysis
- Operational impacts
- 50.69 review
- 50.59 review
- Procedure impact
- Factory Acceptance Testing (FAT)
- Procurement
- Develop training
- Simulation for engineering
- Post modification test plan

**Build**
- Project management
- Work order prep
- Installation support/field engineering
- QA/QC
- Craft implementation
- Conduct training
- Procedure revisions
- Virtual commissioning

**Test**
- Test procedure development
- Post modification testing
- Plant condition/equipment alignment

**Maintain**
- Staff training
- Engineering documents
- Work order close-out
- Return to service
- Data validation reconciliation (DVR)
- Online monitoring
A digitalization project example.

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GSE  Either/or  Utility
What GSE Solutions can offer.

Centralized Project Approach
- Risk reduction with a single vendor interface
- Integrated team vs. individual silos
- Al la Carte services
- Consistent project management playbook/practices

Expert Resource Management
- Integration of resources
- SMEs on demand
- Deep bench of engineering resources

Culture of Continuous Improvement
- Collaboration among team members
- Instant total integration of lessons learned

- Reduced costs
- Improve performance
- More efficiency
- Reduce overhead
- Reduced impact on overworked staff
- More opportunity of capitalization