

## Engineering Innovation Award

This award recognizes individuals or workgroups who have developed innovative processes or programs.

Judging Criteria	Potential Entries Might Include:
<ul style="list-style-type: none"> <li>Adaptability - Can it be adopted by other companies regardless of size? Geographic location? Public or Private?</li> <li>Impact - Does it provide the opportunity for new revenue or customer growth? Reduced cost of operation? Greater efficiency/productivity? More safety? Lower rates?</li> <li>Creativity - Is this a new concept or the adaption of an existing concept?</li> <li>What was the purpose of implementation from conception to completion?</li> <li>Presentation - How did the presenter communicate the concept within the time allotted?</li> </ul>	<ul style="list-style-type: none"> <li>Innovation in an engineering or design process or procedure that results in improved time or cost efficiencies during construction or maintenance activities.</li> <li>Innovation in a construction process or standard that allows an operator to serve a new customer or group of customers.</li> <li>Innovative partnerships with your sales and marketing counterparts that result in increased customer growth or the retention of existing customers.</li> <li>Innovative partnerships with your human resources department that result in an enhanced ability to recruit and retain engineering talent for your organization.</li> </ul>

### Submissions Overview

Engineering Innovation Award Submissions – 13 Nominees		
Company Name	Program Name	ID Number
Dual Drive Technologies	Reduction of Greenhouse Gas (GHG) emissions using Hybrid Gas Compression without straining the electric power grid.	EI-1
Zahroof Valves	StraightFlo™ Valve technology to solve age-old industry's reliability, performance and maintenance challenges.	EI-2
Duke Energy	PAR tool for Emission Control for Duke Energy Natural Gas Business Unit	EI-3

Engineering Innovation Award Submissions – 13 Nominees		
WeldFit	ReCAP Emissions Recovery System	EI-4
T.D. Williamson	ProStopp DS Isolation Tool	EI-5
Southern Star Central Gas Pipeline	Pipeline Pigging Training Lab	EI-6
Xcel Energy	Winter Park Reinforcement Tie	EI-7
Summit Utilities	Master Projects Map (MPM)	EI-8
Southern Star Central Gas Pipeline	StarText Real-time Communication	EI-9
ONE Gas	Engineering Innovation	EI-10
Southern Star Central Gas Pipeline	Measurement Analytics - Drive a Record Low LUG	EI-11
Suburban Consulting Engineers	Enhanced GIS Data Collection	EI-12
Chesapeake Utilities Corporation	Hydrogen Blending Program	EI-13

Nomination EI-1	
<b>SGA Member Company Name</b>	Dual Drive Technologies
<b>Program Name</b>	<i>Reduction of Greenhouse Gas (GHG) emissions using Hybrid Gas Compression without straining the electric power grid.</i>
<b>Program Description</b>	We sought to reduce the Greenhouse Gases emissions and be operationally efficient with the gas plant's residue compression.
<b>Results of/Response to the Program</b>	Dual Drive Technologies is the only provider of this patented process and has reduced emissions for Energy Transfer's Permian Basin by 500,000 tons of carbon dioxide, 571 tons of carbon monoxide, 531 tons of nitrogen dioxide and 397 tons of VOCs.
<b>Contribution to</b>	This technology shows results for our Permian Basin operation.

<p><b>“Connecting People, Ideas &amp; Information”</b></p>	<p>The hazardous emissions stay out of the air and cannot be spread to other populated areas. Energy Transfer currently has multiple locations utilizing this technology with continuous results reducing Greenhouse Gases. Because the Dual Drive Compression system can smoothly transition from electricity to natural gas instantaneously, we participate in Demand Response and other available options from the utilities when a degradation of the grid is detected due to extremely high peaks or extreme weather events. This helps both the environment the grid, working to keep electricity prices low of all consumers.</p>
<p><b>SGA Membership Category</b></p>	<p>Associate Member</p>

<p>Nomination EI-2</p>	
<p><b>SGA Member Company Name</b></p>	<p>Zahroof Valves</p>
<p><b>Program Name</b></p>	<p><i>StraightFlo™ Valve technology to solve age-old industry's reliability, performance and maintenance challenges.</i></p>
<p><b>Program Description</b></p>	<p>More than 36% of all unscheduled reciprocating compressor shutdowns are due to valve problems, resulting in an estimated \$2B annual costs in downtime, maintenance, and fugitive emissions. Compressor valve technology has changed little in the last 100 years, leaving operators without options for significantly improving economic or environmental sustainability. The StraightFlo™ valve is a genuinely disruptive technology (50+ patents globally), making proven improvements in compressor performance, reliability, maintenance, and emissions control. Zahroof StraightFlo™ reciprocating compressor valves incorporate patented Modular Reed Valve technology. Each compressor valve assembly consists of one or more reed check valve modules captured between a seat and carrier. This innovative design allows gas to flow in a straight, unobstructed path through the valve enabling it to operate with lower valve losses. Each module operates independently, and all routine wear occurs within the module. This allows incremental field repair by replacing individual modules. All modules are of a standard size, reducing spare parts requirements and simplifying maintenance. Compared to conventional valves, StraightFlo™ valves extend run times by 15x to 35x, reduce power consumption up to 15%, improve throughput up to 15%, and reduce inventory costs over 80% while substantially reducing methane intensity. StraightFlo™ valves are drop-in replacements</p>

	<p>for conventional valves. They are compressor brand agnostic and have been proven in a wide range of reciprocating compressor applications, including upstream, midstream, and downstream in Oil &amp; Gas. The youtube link below is a good short descriptive video of our technology <a href="#">Zahroof Valves Inc. - Straightflo Valves - YouTube</a></p>
<p><b>Results of/Response to the Program</b></p>	<p>This technology has generated a combined savings of over \$100M including but not limited to longer run times, increased reliability, improved throughput, efficiency, reduced maintenance costs, reduced emissions and inventory. This technology has resulted in production and installation of over 30,000 StraightFlo™ valves in the field globally with positive feedback across various operators in the upstream, midstream and downstream customers. The response from the customers and operators has continues to be positive and we continue to take their feedback to improve the technology and expand it to more applications.</p>
<p><b>Contribution to “Connecting People, Ideas &amp; Information”</b></p>	<p>Our program had a significant contribution towards connecting people and ideas and information. This program has allowed to bring diverse people together and build an operating entity (by the name of Zahroof Valves, Inc) that has allowed an opportunity for employment for over 50 people. It has created an echo system of employees, suppliers, partners, customers and shareholders that are adding value to our industry. Our technology contributed significantly to the preexisting ideas pool in the US. We have had over 50 patents to the intellectual property database that others can build on to solve broader and unique challenges. We continue to share information in various platforms to ensure the industry gets benefited from our technology. Following are some of the quantified benefits from our program Efficiency and Environmental Benefits By eliminating torturous paths, compressors with StraightFlo™ valves use up to 7% less energy (based on a typical 1,000 rpm high-speed pipeline application). This can be converted to 7% incremental throughput. They -increase the Mean Time Between Shutdown of the compressor due to valve issues by 15x to 35x, thereby eliminating the need to vent/purge/blowdown pipes and reducing methane emissions by 15x to 35x. With improved efficiency, driver power requirements are reduced by up to 15%. StraightFlo™ valves also operate with 6-8 dB less noise and with 10 times less vibration. Additional savings and risk reductions accrue from longer run times and fewer repair procedures. Increased Reliability StraightFlo™ modules are held stationary in the valve assembly, eliminating the possibility of wear from impact on the valve seat and carrier. With a straight flow path through the valve and no need for helical coil springs, StraightFlo™ valves tolerate liquids and solids in the gas stream. This results in a 5x to 15x greater MTBF compared to</p>

	<p>conventional valves. Simplified Maintenance A StraightFlo™ valve is easily serviced on-site by simply replacing modules. The expensive metal valve seat and carrier does not see wear and never needs to be machined or replaced. StraightFlo™ valve maintenance requires 5 to 10 minutes per valve (on average) with unskilled labor and no need for special tools, machining, or leak testing. This compares to 24-48 hours for a set of traditional valves using skilled labor and off-site specialty machine shops. Reduced Spares Inventory StraightFlo™ valves eliminate the need to stock spare valve assemblies. Users need only a limited number of interchangeable module SKUs to meet the needs of a large compressor fleet. This typically results in an 80% reduction in inventory compared to conventional valves.</p>
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Associate Member

<b>Nomination EI-3</b>	
<b>SGA Member Company Name</b>	<a href="#">Duke Energy</a>
<b>Program Name</b>	<i>PAR tool for Emission Control for Duke Energy Natural Gas Business Unit</i>
<b>Program Description</b>	<p>The NGBU has started the process and development work to be the first Natural Gas LDC to achieve and prove Net Zero Methane Emissions using measurement rather than desktop calculations that is the current industry standard. The NGBU is utilizing satellite, among other advanced methane detection technologies, to detect methane emissions on the natural gas distribution system. The NGBU has partnered with Accenture and Microsoft to develop a product that will establish a platform that ingests and measures baseline emissions, prioritizes methane emissions detected via leak detection technology, and enables field response and data capture to identify and repair leaks to reduce fugitive emissions. The PAR Tool (pinpoint, assess, repair) is a work order management tool in which prioritized plumes identified by satellite are dispatched to field technicians for validation. If a leak is found, technicians are providing details to PAR as well as creating conditions in ARM, which is the leak system of record. The PAR tool will expand to provide alerts for a variety of emission-type events, such as, leaks on LNG facilities and regulator stations.</p>

<b>Results of/Response to the Program</b>	Duke Energy NGBU team’s efforts are helping the company achieve its overall environmental safety and net-zero emissions goals -- specifically by using satellite technology to identify, measure and mitigate natural gas leaks that occur within our overall system. This effort is groundbreaking – it’s a first-in-the-industry leak detection program designed to “find it, fix it faster,” clear existing leak inventories, and keep them at low- to near-zero levels to reduce our overall methane emissions.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	We successfully implemented new technology across multiple organizations that had not applied their technologies specifically to methane emission controls. This technology can improve the efforts across the worldwide industry reducing emissions and promoting Natural Gas as the safe and reliable asset it is to our energy future.
<b>SGA Membership Category</b>	Distribution

Nomination EI-4	
<b>SGA Member Company Name</b>	<a href="#">WeldFit</a>
<b>Program Name</b>	<i>ReCAP Emissions Recovery System</i>
<b>Program Description</b>	WeldFit’s ReCAP™ Emissions Recovery System is a pipeline depressurization and gas recovery solution that does one simple, yet important, thing in support of ESG-driven methane emissions reduction goals: It eliminates the need for voluntary natural gas flaring or venting associated with blowdowns during common pipeline operations.
<b>Results of/Response to the Program</b>	Widespread concept adoption by more than 50 customers from the gathering & transmission, distribution and E&P segments. ReCAP is currently in use on jobs from the East coast to the West coast as well as the southern and central U.S.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	ReCAP connected our customers' ESG-borne initiatives to reduce methane emissions with a solution that allows them to do so with little to no interruption to everyday business operations.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Associate Member

Nomination EI-5	
<b>SGA Member Company Name</b>	T.D. Williamson
<b>Program Name</b>	<i>ProStopp DS Isolation Tool</i>
<b>Program Description</b>	Design and commercialize a double block and bleed isolation tool that uses an energized seal to isolated the pipe. This new technology can seal pipes with wall thickness ranging from schedule 10 to schedule 60 with one seal. The area between the seals is vented with a bleed port that allows any leaky gas to flow back up through the tool and out through the actuator. This creates the double block and bleed and allows for a gas-free work zone for any workers in the ditch.
<b>Results of/Response to the Program</b>	The results of the program have been the creation of a tool that allows operators to increase speed and safety on the job site. With the double block and bleed feature, operators can now achieve a 100% first-time success rate when sealing the pipe. This eliminates additional procedural steps and costs that operators incur when a seal is not achieved on the first attempt when isolating a pipe.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	This initiative was based on addressing multiple operators' concerns regarding the safety of their employees in the ditch. Before the design of this tool began, we met with operators across the United States to discuss their concerns and we continued to come back to the same request, "keep my guys in the ditch safe". This required zero gas to get past the isolation tool as well as other features like addressing working at heights. This tool was designed with the safety of the workers in the ditch in mind. The goal was to provide something that would be a positive influence in the industry and to give operators a solution they can trust.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Associate Member

Nomination EI-6	
<b>SGA Member Company Name</b>	Southern Star Central Gas Pipeline

<b>Program Name</b>	<i>Pipeline Pigging Training Lab</i>
<b>Program Description</b>	Said to be the first of its kind in North America, Southern Star’s Pipeline Pigging Lab simulates a buried transmission pipeline complete with mainline gates and pig launching/receiving facilities. Southern Star installed the fully-functional facility in 2020 at its Hesston Training Center in Hesston, Kansas. It’s quickly become a popular class for team members because it offers hands-on training to practice pig launching/receiving techniques, safety practices, and various aspects of a pig run. This innovative lab is safely operated by compressed air stored in a 1,200-gallon volume bottle allowing for multiple runs without high demand on the air system. Pigging facilities are a shorter version of Southern Star’s standard skid-mounted facilities with six-inch barrel, kicker line, pig signals and gauges on the launcher and similar facilities on the receiver. The mainline from the launcher is a four-inch buried line that runs through a standard four-inch mainline gate facility with bypass. Piping is six feet below ground level and runs for 80 feet, loops back, and returns to the receiver.
<b>Results of/Response to the Program</b>	Southern Star’s Integrity Management & PHMSA Compliance Department and Training Department collaborated to develop the lab’s curriculum and classes with the goal to provide the most realistic hands-on training in a safe environment by utilizing pressurized air as opposed to natural gas. Curriculum covers common pipeline pigging practices including safety, principles of pipeline pigging, principles of smart pigging, operation and maintenance (O&M) procedures, as well as pig tracking techniques. The lab enhances operator preparedness by providing educational and empowering opportunities.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	Collaboration was key in developing this unique and valuable opportunity for Southern Star team members. The Integrity Management & PHMSA Compliance Department and Training Department established a strong relationship to share ideas while providing a safe environment to discuss practices and evaluate issues.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Transmission

<b>Nomination EI-7</b>	
<b>SGA Member Company Name</b>	<a href="#">Xcel Energy</a>



<b>Program Name</b>	<i>Winter Park Reinforcement Tie</i>
<b>Program Description</b>	Colorado, in general, is one of the fastest-growing states in the Country. Growth in our Mountain communities is happening at a rapid rate. Winter Park Reinforcement Tie was a high-pressure system reinforcement necessary to support significant growth in the area and will allow continued, safe, and reliable service to gas customers.
<b>Results of/Response to the Program</b>	Projects similar to the Winter Park Reinforcement Tie would normally require several years to plan, design and construct. The Winter Park Reinforcement Tie was completed in just a few months with construction starting in September 2021 and gas was flowing by end of October 2021. The reinforcement tie spanned a little more than a mile with significant elevation change (about 580 feet). Engineering innovation included planning, design, and construction of an HDD of about a half-mile in length, approximately 350 feet of elevation difference from entry to exit. The HDD crossed under a river and a fen wetland before climbing the mountain avoiding side-slope construction. Engineering innovation led to completing the HDD early, without incident and without design changes.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	Engineering innovation consisted of contractor participation during pre-design activities; ongoing "Think Tank" meetings regarding trenchless construction options for rocky conditions/mountain construction; Geotechnical Professional, Design Engineer, and Contractor collaboration; and recent technology in the U.S. that allowed for installation of approximately 300 feet of construction aid casing. This project has provided new solutions for trenchless construction in rocky conditions.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Transmission

Nomination EI-8	
<b>SGA Member Company Name</b>	<b>Summit Utilities</b>
<b>Program Name</b>	<i>Master Projects Map (MPM)</i>
<b>Program Description</b>	<p>In 2021, Colorado Natural Gas (CNG), a subsidiary of Summit Utilities, Inc., piloted the Master Projects Map (MPM). The MPM is a web-connected, GIS-based, map that is customized for quick decision-making in both Project Management and Engineering. Rather than having to dig through project files and translate existing GIS data during meetings or day-to-day work, the MPM provides extremely quick access to project overviews against the backdrop of our existing pipeline data. The Project Manager keeps the MPM up to date with the latest known geographical data for projects. This data is typically very conceptual in nature and would be difficult to map out through typical GIS/survey methods. However, by leveraging the simplicity of Google Earth, the Project Manager can create and export meaningful data for the state GIS Analyst to upload to the MPM.</p>
<b>Results of/Response to the Program</b>	<p>The MPM is regularly used at the start of project meetings to give visual project context to all participants and leads to highly effective discussions and collaboration. Furthermore, the data is easily accessible in the field through mobile applications, leading to effective trip planning and more meaningful site visits. The existence of the MPM helped the CNG team make necessary pivots on projects that were trending over budget. As such, CNG had no projects exceed their approved budget in 2021. The MPM allows the project team to manage over 90 project locations in a single map. The MPM helped keep all 49 CNG projects within approved budgets in 2021 and saved an estimated 1,000 miles of driving in 2021 because all upcoming projects in a district/area could be visited in a single trip, instead of multiple trips. Trying to manually search for locations/addresses to plan a route would be very difficult and time-consuming. On one specific project, the CNG team was able to remain extremely agile with easement concerns and collaborate on backup pipeline routes, which allowed us to keep 450 customers from interruption of service. The MPM has been utilized regularly to communicate important risk decisions to the CNG team, as well as Executive-level team members. The Project Manager, who is the primary contact with our environmental contractor, was able to condense a lot of very technical environmental data down into the most critical aspects and then clearly show environmental concerns to the project team so that we could minimize our environmental impact by collaborating on alternate routes.</p>

<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	Because the nature of our work in the natural gas industry is so intertwined with the geography of the communities we serve, it is very difficult to fully grasp any of our projects without some geographical context. Thanks to the MPM, a much broader group of team members in the organization can now visually grasp our upcoming projects and further think on and plan their piece of the puzzle.
<b>SGA Membership Category</b>	Distribution

Nomination EI-9	
<b>SGA Member Company Name</b>	<a href="#">Southern Star Central Gas Pipeline</a>
<b>Program Name</b>	<i>StarText Real-time Communication</i>
<b>Program Description</b>	StarText is a custom-developed SMS communication tool that allows our operations team to get an instant update on system operations. A text message containing summary information is sent to the list of subscribers two times per day, however a request to get an update is available any time by texting a keyword.
<b>Results of/Response to the Program</b>	Our operations team has instant access to system information from anywhere. Also, automating this data collection has saved operations from the manual daily task of pulling and emailing this information.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	StarText makes system data available to any company-provided cell phone on-demand. This allows operations and storage to quickly see a system overview at any time, from any location.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Transmission

Nomination EI-10	
<b>SGA Member Company Name</b>	<b>ONE Gas</b>
<b>Program Name</b>	<i>Engineering Innovation</i>
<b>Program Description</b>	<p>The problem: A frequent safety concern in natural gas distribution is excavation damage. Damage to pipeline facilities can impact the safe delivery of natural gas to customers and can cause delays in projects. Excavation damages are also a leading cause of emissions for gas distribution companies. Innovative solution: A team of Operations, Information Technology and Engineering employees formed a working group to better understand the factors contributing to pipeline damage and how to use data to mitigate these risks and make more efficient and informed decisions. The team spent more than a year of research, application development, and data analysis, ultimately developing Risk Assessment and Damage Reduction technology, also known as RADAR. This innovative technology pulls data from public and internal sources to identify the probability of damage occurring due to excavation activities near our pipelines. If these data sources indicate there is a heightened risk of potential excavation damage, a ticket is delivered to a team of field employees through a mobile application. ONE Gas technicians can proactively connect with the excavator onsite before the excavation begins to help align and foster safe practices. ONE Gas began using RADAR in major Oklahoma metro areas in 2021 with promising results. The company plans to expand the deployment company-wide over the next few years. Why RADAR Deserves to Win: RADAR demonstrates how Artificial Intelligence (AI) and data science – like machine learning – can solve problems. Machine learning is a branch of AI that uses data and algorithms to imitate the way humans learn. It plays a crucial role in evaluating complex data, identifying patterns, and predicting where things may occur – in this case, where the risk of excavation damage is heightened. Contributing factors such as prior excavator interactions, pipe data, and location are a few of the dozens of data points that drive the analysis.</p>
<b>Results of/Response to the Program</b>	<p>From September through December 31, 2021, ONE Gas used RADAR data to identify and conduct over 1000 proactive check-ins with excavators. The check-ins are in the form of a phone call, email, or a face-to-face meeting on-site before any excavation activity occurs.</p>

<p><b>Contribution to “Connecting People, Ideas &amp; Information”</b></p>	<p>ONE Gas paired data with personal connections for optimum results. Data alone could not reduce instances of potential excavation damage. While machine learning can help quickly identify patterns of efficiency, inefficiency, or excavation risk in near real-time, it was the personal connection that allowed ONE Gas to continue to deliver positive results. When a line hit did occur, we scheduled an incident review with contractors. These meetings allowed us to identify the root cause and create remediation plans to address any deficiencies. Our increased communication and in-person touchpoints demonstrated to contractors that we were focused on this effort and measuring their performance. In turn, their performance improved, and contractor line hits went down. Supporting Material - <a href="#">90-second video overview of RADAR</a></p>
<p><b>Supporting Documents</b></p>	<p><a href="#">Click to view.</a></p>
<p><b>SGA Membership Category</b></p>	<p>Distribution</p>

<p><b>Nomination EI-11</b></p>	
<p><b>SGA Member Company Name</b></p>	<p><a href="#">Southern Star Central Gas Pipeline</a></p>
<p><b>Program Name</b></p>	<p><i>Measurement Analytics - Drive a Record Low LUG</i></p>
<p><b>Program Description</b></p>	<p>Beginning in 2020, Southern Star began historizing, organizing, and visualizing real-time measurement data. Southern Star developed multiple analytic tools on more than 2,000 devices (and continues adding to that count) to improve the accuracy of our gas measurement. Since 2020, Southern Star has developed unique tools using multiple software packages that allow for quicker identification of potential issues in which are resulting in prompt evaluation and repair of issues. Southern Star is devoted to maximizing the use of analytics as a tool to maximize our customer and shareholders' value by reducing costs and improving measurement quality and accuracy.</p>
<p><b>Results of/Response to the Program</b></p>	<p>Southern Star has seen significant reductions in LUG volumes since the implementation of our measurement analytics efforts. The Southern Star 2021 LUG goal of 0.15% loss was achieved and surpassed with a record low 0.07% loss! These results are directly attributed to the implementation of the measurement analytic tools. Implementation of referenced analytical tools, the devotion of employees to utilize these tools and promptly respond to identified potential deficiencies in equipment, and Southern Stars continued capital commitment to investing in</p>

	improving measurement technology will continue to drive us forward in maximizing shareholder value.
<b>Contribution to “Connecting People, Ideas &amp; Information”</b>	This initiative has not only continued to connect individuals and teams within Southern Star as many of these measurement initiatives can be carried over to other departments for similar improvements in technology but also externally to other organizations in the industry. Southern Star has been partnering with other organizations in sharing our experiences (both success stories and lessons learned) to improve the natural gas industry as a whole and not just Southern Star.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Transmission

<b>Nomination EI-12</b>	
<b>SGA Member Company Name</b>	<a href="#">Suburban Consulting Engineers, Inc.</a>
<b>Program Name</b>	<i>Enhanced GIS Data Collection</i>
<b>Program Description</b>	<p>With nearly 35 years of Engineering &amp; GIS experience and expertise working with natural gas utility companies, Suburban Consulting Engineers, Inc. (SCE) successfully developed and implemented an innovative and unique field data collection approach called “Enhanced GIS Data Collection”. This approach utilizes highly sophisticated equipment to customize a GIS-centric database for Clients, which promotes the safety and compliance of pipeline operations. It offers ESRI GIS &amp; sub-centimeter GPS technologies to support detailed asset data collection, photo documentation, and material validation which has proven valuable to validate high volumes of pipeline information. Enhanced GIS Data Collection is an all-inclusive solution that utilizes the latest cutting-edge technology to capture and provide accurate geospatial data/attributes for all assets to ensure PHMSA 192 ‘Mega Rule’ requirements are met and often exceeded. Our process was implemented to ensure all asset data is traceable, verifiable, and complete. SCE Field Technicians record all attributes on all pipeline components, including the pipe segments, connections, asset type, grade, and heat numbers, etc. In many cases, this data must be recorded the same day before a pipeline is buried underground, making the vital information unrecoverable. The unique part of the Enhanced GIS process is that the standard for data collection is subcentimeter-level accuracy. All details are captured and uploaded into a Client-specific GIS digital database that is</p>

	<p>available to review in real-time. Recognizing that the majority of gas companies use ESRI software, our program is built to leverage in-house capabilities. SCE collaborates with each client to create and enhance custom data models within their GIS environment that meet their specific goals and requirements. The resulting data is fully traceable, verifiable, and provides a complete record for the life of the assets in accordance with the PHMSA regulations.</p>
<p><b>Results of/Response to the Program</b></p>	<p>Enhanced GIS Data Collection results in fully traceable, verifiable data and provides complete records for the life of assets in accordance with PHMSA regulations. The response to the program has been overwhelmingly supportive from the Client Project Managers and Construction Contractors throughout the development and implementation process. Today, Enhanced GIS is utilized on every SCE Transmission project from MAOP Validation, new install pipelines, and regulator stations, validating thousands of assets a month and providing information for pre-commissioning activities and verification checks. From on-site data collection to uploading information in customized Client GIS databases, SCE significantly reduces turnaround time for producing deliverables. Clients can view and query a full digital copy of their pipeline infrastructure immediately. For larger projects, weekly data deliverables are produced for quality checks/reporting and preliminary as-built records. Natural Gas Utility Operators gain the benefit of significantly reducing employee hours on projects and can model/translate data with fewer Technicians. The completion time of project close-out packages has significantly decreased due to the weekly data deliverables and quality checks.</p>
<p><b>Contribution to “Connecting People, Ideas &amp; Information”</b></p>	<p>SCE’s Enhanced GIS Data Collection program provides natural gas utility companies with the flexibility of including additional asset types that have never been tracked in GIS before by some Operators. Some of these additional assets include the accurate and correct modeling of Horizontal Directional Drills (HDD) and cathodic protection devices. Asset Protection Departments have been heavily engaged in GIS and data modeling updates as well as field training for accurate documentation of installed assets. This collection process conforms to custom data schemas while also providing benefits to gas utility companies migrating into UPDM/UN. On larger and high-profile projects, SCE’s near real-time data and operations dashboards have been used to relay project information to citizens in the affected areas. As technology and regulations evolve, so will the Enhanced GIS process to continue to offer the most innovative solution through collaborative efforts with natural gas operators. We started the Enhanced GIS Data Collection process over nine (9) years ago. What started as a simple pipeline feature collection has now grown into a complex network, offering endless innovative</p>

	solutions to Clients.
<b>Supporting Documents</b>	<a href="#">Click to view.</a>
<b>SGA Membership Category</b>	Associate Member

Nomination EI-13	
<b>SGA Member Company Name</b>	<a href="#">Chesapeake Utilities Corporation</a>
<b>Program Name</b>	<i>Hydrogen Blending Program</i>
<b>Program Description</b>	<p>With an increased demand for large-volume customers to evaluate and lower their carbon emissions, Chesapeake Utilities Corporation is actively working to develop lower-carbon energy sources. Beginning in January 2022, the Company tested a blend of hydrogen and natural gas to fuel its Eight Flags Combined Heat and Power Plant (CHP) gas turbine, located in Nassau County, Florida. This facility offers a unique opportunity to assess the feasibility, benefits and operating characteristics of blending hydrogen and natural gas in a contained and closely monitored industrial setting. The engineers and highly skilled technicians who operate Eight Flags 24 hours a day conduct the blended fuel tests. Prior to testing, Chesapeake Utilities received an updated air permit to operate with a blend of hydrogen. Minor modifications at the CHP plant were completed to enable the turbine to run on a 4% hydrogen blend. The existing turbine is scheduled for a routine change-out this year; the replacement turbine will have the capability to operate with a higher percentage of hydrogen. The test program was intended to refine the operational practices and requirements for safe transportation and injection of hydrogen into a distribution system. Hydrogen, along with RNG, conservation, carbon capture and other emerging technologies, will ultimately provide customers with increased sustainable energy choices. Our team is engaged at every level as the social, political and legislative environment around climate change develops and the renewable energy supply chain matures.</p>
<b>Results of/Response to the Program</b>	<p>The Eight Flags CHP hydrogen blend test project provides real-world operational data that will help demonstrate the practical use of hydrogen blended natural gas in an industrial application. Chesapeake Utilities' interest in hydrogen began with assisting our larger customers in lowering their carbon footprints. Providing hydrogen blended fuel; offering technical assistance</p>



	<p>and operational training; and investing in equipment at customer sites are several of the Company’s goals focused on customer satisfaction and retention. The Company is currently validating the achieved emissions reduction at the CHP plant. A successful test will result in an increased hydrogen percentage. We anticipate switching to green hydrogen produced by renewable electricity electrolyzers.</p>
<p><b>Contribution to “Connecting People, Ideas &amp; Information”</b></p>	<p>The development of this program required a wide range of collaboration both internally and externally. Internally, Chesapeake Utilities worked alongside one of its subsidiaries, Marlin Gas Services, to coordinate the transport of the hydrogen to the Chesapeake-owned distribution system at the CHP site using four recertified Marlin tankers. These tankers will initially support the hydrogen test project but will shortly thereafter be available to meet other customer transport needs. Externally, Solar Turbines, the manufacturer of the Eight Flags gas turbine, worked in conjunction with the Company to assess the use of the hydrogen blend on the operations of the turbine and other associated CHP equipment.</p>
<p><b>SGA Membership Category</b></p>	<p>Distribution</p>