



# Training the Modern Workforce

- Connor Wells, *NJNG Project Management Specialist*
- Ray Deatherage, *GTI Energy, Director of Education & Training*

AGA Operations Conference | May 8, 2025



# Presenter Introduction – New Jersey Natural Gas

**Connor Wells:** *Project Management Specialist with NJNG*

- *3rd generation at NJNG*
- *7 years with NJNG including 5 within the Training and OQ Department*
- *12 years as a certified Level 2 fire instructor*
- *10 years focused on innovating and integrating new training methods and technologies into training programs.*
  - *Updating and enhancing all NJNG's training programs*
  - *Updating training practices for new state-of-the-art training center at NJNG*
  - *Revamping state (NJ) basic firefighter training program*
  - *Co-Chair of GTI Energy's NextGen Training Consortium*

# Co-Presenter Introduction – GTI Energy

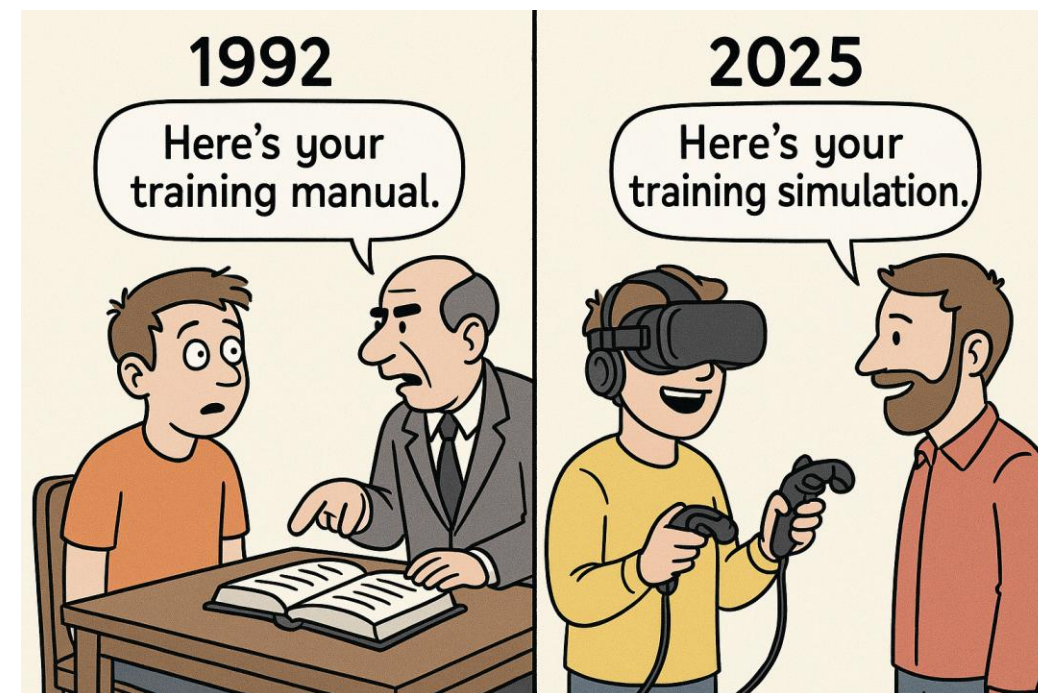
**Ray Deatherage:** *Director, Education and Training with GTI Energy*

- 33 years' experience in the natural gas industry
- 25 years' experience with a local distribution company (LDC)
  - Operations, Standards, Materials, Failure Analysis, Quality Assurance, Compliance, Training, and Operator Qualification
- 20 years' experience developing, delivering, and maintaining training and qualification programs for over 1,600 personnel at an LDC
- 9 years' experience developing and deploying digital and immersive training content



# Presentation Outline

- Why Workforce Training Matters Now More Than Ever
- Generational Differences in Learning
- Trends Across the Industry
- NJNG's Approach to Modern Training
- Student Surveys: Traditional vs. Modern
- Industry Engagement
- Building a Culture of Continuous Learning
- Technology Use Case Review
- Call to Action: Start Small, Scale Fast



# Icebreaker Questions: Investment in Modern Training



- *What is the organizational cost to onboard a new employee? \$20,000? More?*
- *How many organizations invested \$20,000 into updating their training content in the past 12 months?*
- *What is the financial impact of inadequate or poor training for an organization?*
  - *Poor employee retention, increased company expenses due to rework, increase in remedial training costs, increase in employee injuries and lost time, increase in state commission citations, cost of a system failure or outage, increase in bargaining unit grievances.....*

*Does your training content meet the needs of your “current” workforce?*

# Why Workforce Training Matters Now More Than Ever



- Large percentage of utility workforce eligible for **retirement** in the next 5 years.
- **Safety, compliance,** and **public confidence** hinge on qualified personnel.
- \*New employees are entering the industry with less **technical skills**.
- \*Accelerated **employee progression** into roles with high-risk activities (e.g., tapping & stopping).
- Upskilling must keep pace with **emerging technologies**. (e.g., Pressure Regulators, GIS, Material Traceability, etc.)





# Generational Differences in Learning

- Four generations in today's workforce.  
(Boomers, Gen X, Millennials, Gen Z)
- Boomers: prefer structured classroom, manuals, instructor-led.
- Gen X: value blended learning and autonomy
- Millennials & Gen Z: digital-first, mobile, interactive, and peer-based.
- **Stat:** 74% of employees want to learn during spare time at work (LinkedIn Learning).



*How have you adapted your training content to address all learning styles?*

# Training Trends Across the Industry

- **Blended** learning over traditional only.
- Rise in **microlearning**: 5 to 10-minute chunks.
- Growing adoption of **gamification**, **scenario-based learning**, and **immersive tools**.
- **On-demand** content and just-in-time training are gaining ground.



## Wordle



Select questions, from the grid, arranged according to point values and topics and give your best shot.

You may pick questions from the grid in any order. Every correct answer will earn **points** towards achieving a **title**. The more points, the higher the title.

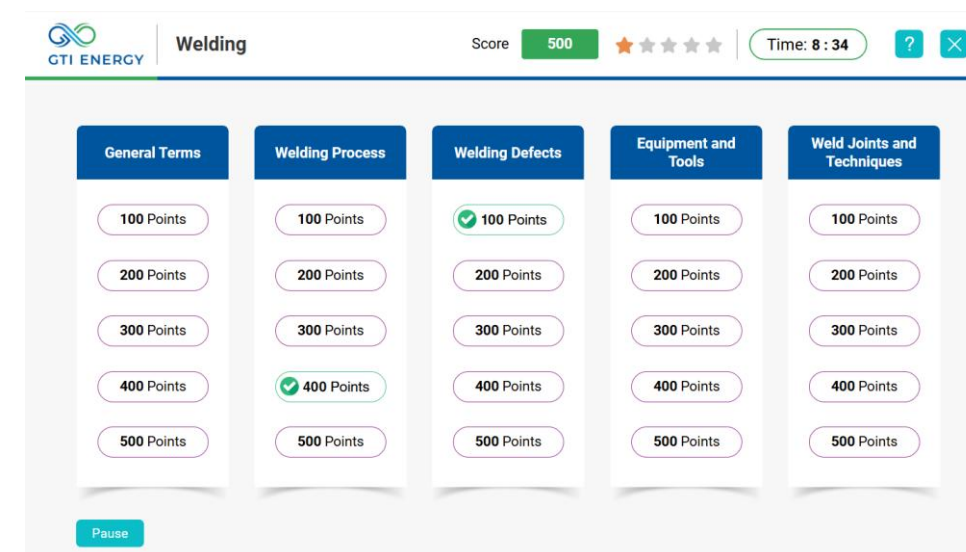
You have a maximum time limit of **10 minutes** to answer **25 questions**. Challenge your memory, expand your knowledge, and seek **Energy Enlightenment**.

Titles

Beginner ★★	Enthusiast ★★★	Specialist ★★★★	Expert ★★★★★
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Good luck!

Click Tutorial for additional game instructions or click Start Game.



The screenshot shows the GTI ENERGY Welding game interface. At the top, the GTI ENERGY logo is on the left, the title 'Welding' is in the center, and the score '500' and time '8:34' are on the right. Below the header, there are five columns representing different topics: General Terms, Welding Process, Welding Defects, Equipment and Tools, and Weld Joint and Techniques. Each column contains a list of point values (100, 200, 300, 400, 500) with corresponding question cards. The 'Welding Defects' column shows a green checkmark next to the 100-point card. At the bottom left, there is a 'Pause' button.



# NJNG's Approach to Modern Training (1 of 2)

## 1. Visual Aids

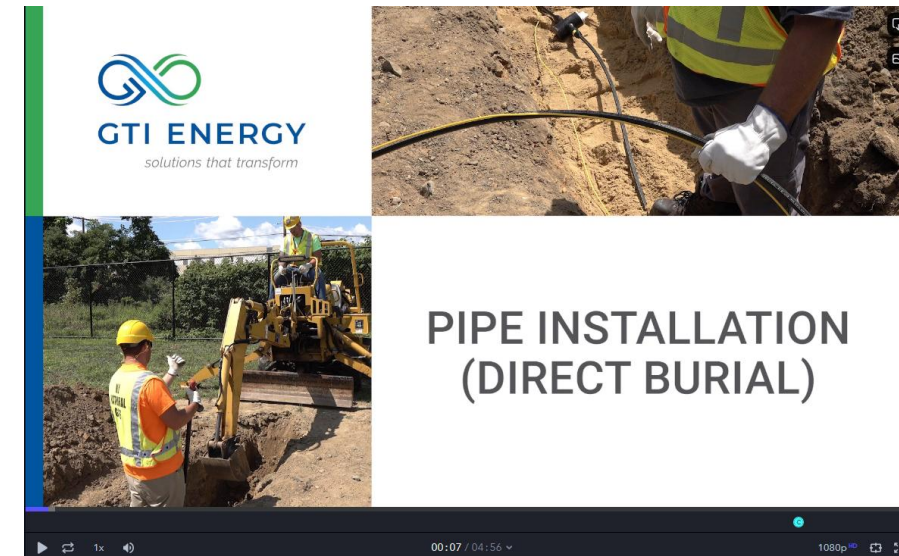
- Effective job aids.

## 2. Just-in-Time Learning

- Micro-videos (VideoNitch)

## 3. Field Trainers

- Bringing field personnel to assist in training, providing a second perspective and fostering collaboration with future colleagues.
- Book of Repetitions. (GoCanves)



*Example of a 4:56 minute micro-video for Pipe Installation.*

# NJNG's Approach to Modern Training (2 of 2)

## 4. Flipped Classroom

- Videos followed by practical application.
- Peer collaboration on training scenarios.
- Hands-on exams over written tests.

## 5. LMS

- Access to all training materials before and after sessions.

## 6. Virtual Reality (VR) Training

- Supplementing dangerous tasks with virtual reality to demonstrate and train on processes and procedures.
- Providing realistic scenarios such as emergency response, outside leak investigations, and inside leak investigations.



# Student Survey Feedback on Improving Training



## Training Stakeholders

- Field Technicians
- Supervisors, Operations
- Managers, Operations
- Engineers
- Construction Inspectors
- State Commission Staff

## Survey Feedback

- Micro-videos\*
- Gamified learning
- Scenario branching
- Group exercises
- 3D interactive models
- 360° experiences
- Virtual reality (VR)
- Hands-on
- Hybrid (self-study + instructor led)



*Not one student survey requested more PowerPoints.*

# Industry Engagement



- Industry wants:
  - More scalable, consistent training.
  - Customizable content to fit utility specific procedures.
  - Mobile delivery (smartphones/tablets).
  - Faster upskilling for new hires and contractors.
  - Less multi-day sessions and more focused shorter sessions.
- Utility leaders prefer scenario and simulation-based assessment tools.



# Building a Culture of Continuous Learning

- Training is not one-and-done – it's continuous and embedded in work culture.
- Offer performance support tools, job aids, and peer mentoring.
- Recognize achievements: digital badges, certifications, micro-credentials, leader boards.





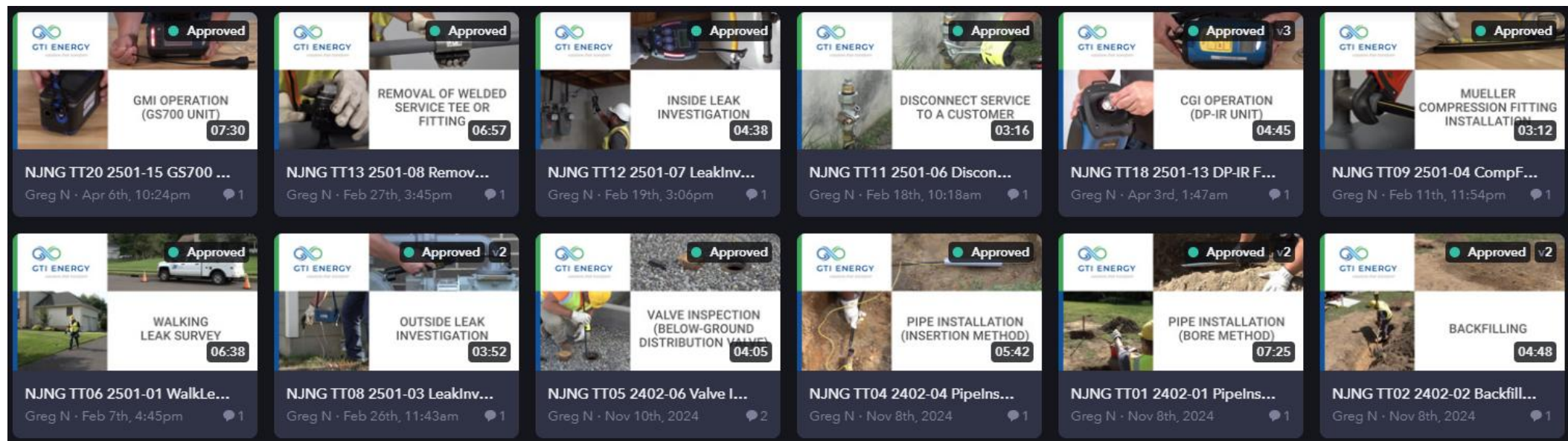
# Virtual Reality (VR) Use Case

- Virtual reality training delivers **safe**, immersive, and cost-effective skill development for **high-risk** and **complex** tasks in the natural gas industry.



# Micro-Video Use Case

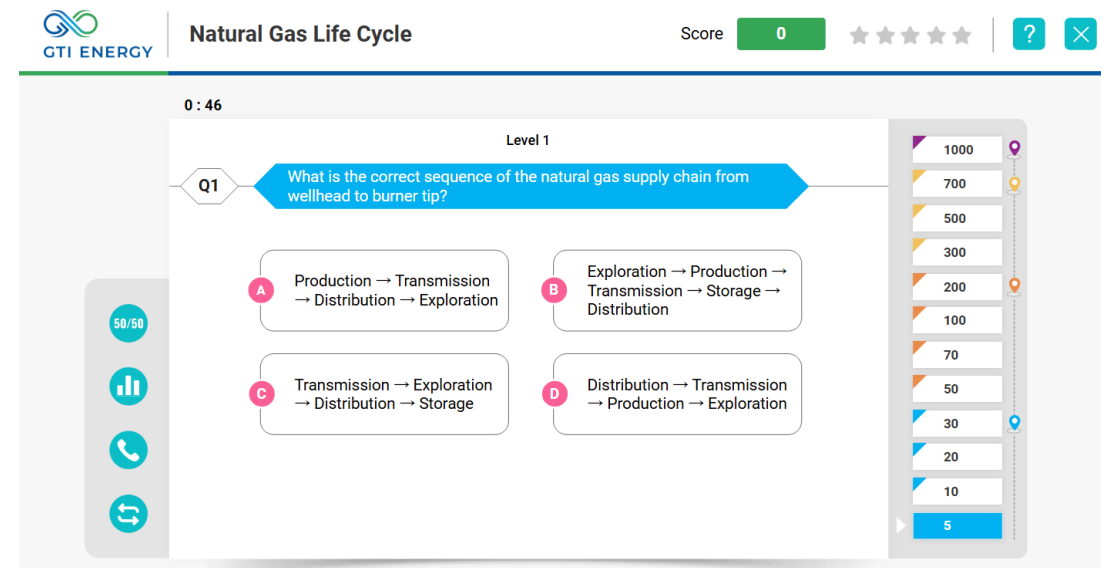
- Micro-videos provide **on-demand, targeted** training for the natural gas industry—delivering critical knowledge in minutes, right when and where workers need it most.



*Video length varies from 3:12 to 7:30 minutes.*

# Gamification Use Case

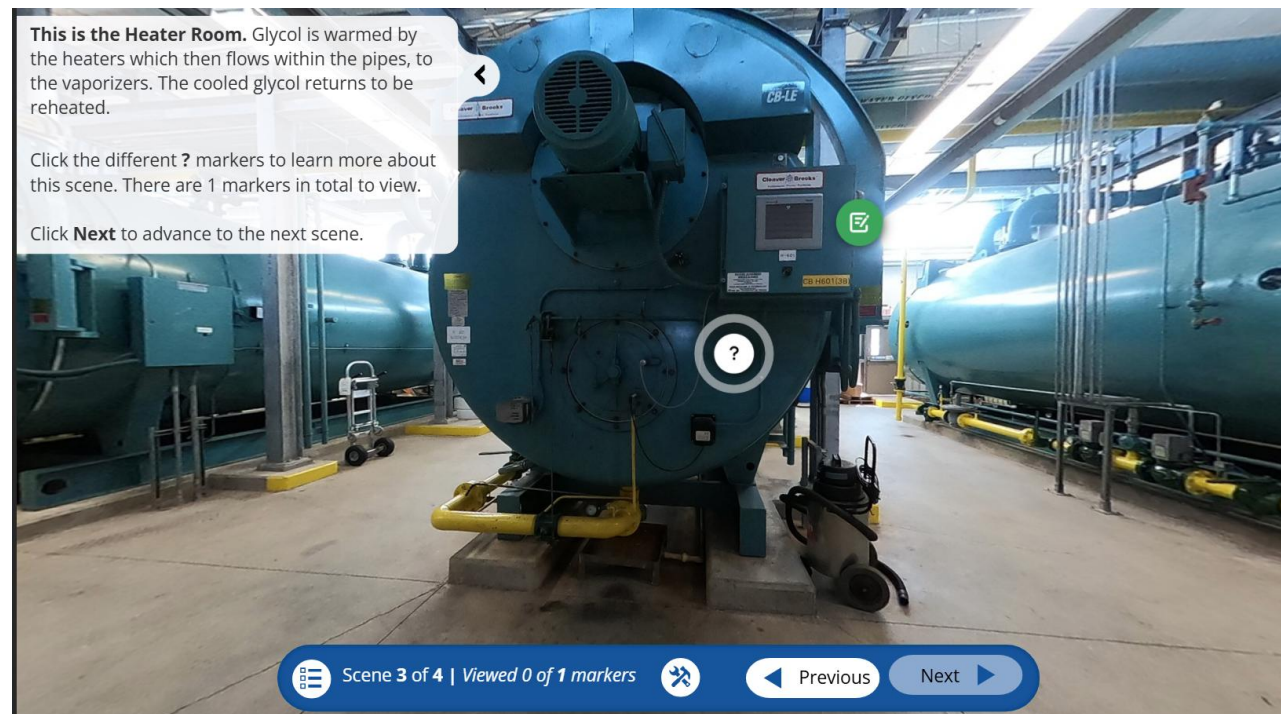
- Gamification transforms training in the natural gas industry by boosting **engagement**, improving **retention**, and **motivating** learners through interactive, real-world challenges that mirror field conditions.
  - Energy Enlightenment (Jeopardy)
  - Fueling Your Future (Who Wants to be a Millionaire)
  - Pipeline Peril (Hangman)
  - Renewable Recall (Memory Match)
  - Sustainable Systems Sorter (Drag and Drop)
  - Pipeline Puzzler (Crossword)





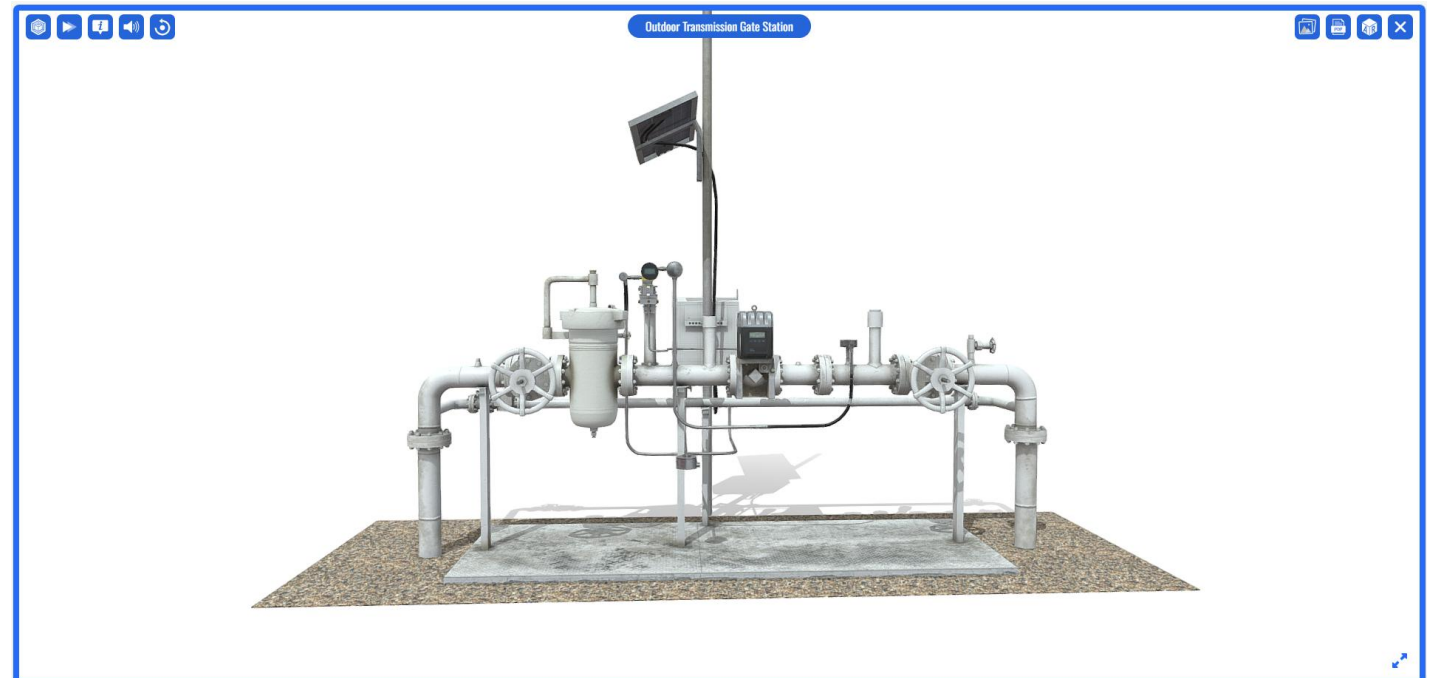
# 360° Experience Use Case

- 360-degree interactive experiences immerse trainees in real-world natural gas environments—enhancing **situational awareness, safety decision-making**, and operational readiness without leaving the classroom.



# 3D Interactive Model Use Case

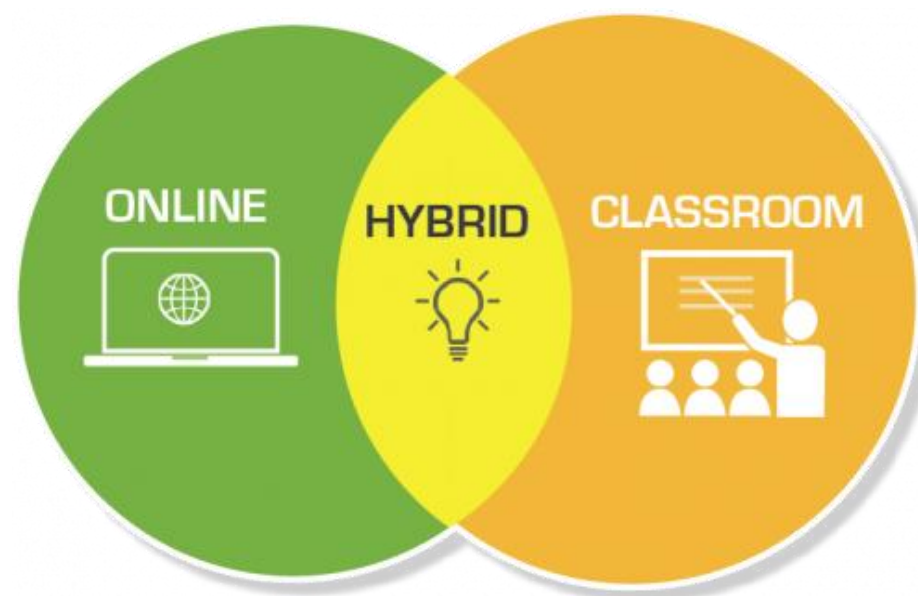
- 3D interactive experiences bring complex natural gas systems to life—allowing trainees to **explore**, **practice**, and **master** procedures in a dynamic, hands-on virtual environment that drives deeper understanding and safer field performance.
  - Annotations
  - Cut-Aways
  - Animations
  - Voiceover
  - Supporting Media





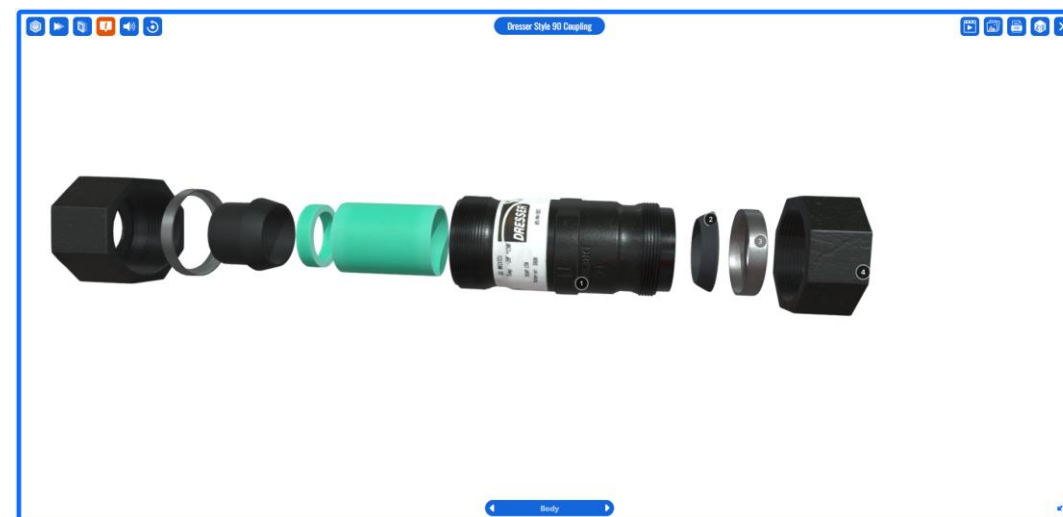
# Hybrid Training Use Case

- Hybrid training combines the structure of classroom learning with the flexibility of self-study—enabling the natural gas industry to deliver **consistent**, **scalable**, and **efficient** workforce development without sacrificing depth or field readiness.
  - ILT & vILT
  - ILT & Digital Training (self-study)
  - vILT & Digital Training (self-study)



# Call to Action: Start Small, Scale Fast

- Pilot microlearning program.
- Survey learners for feedback on learning preferences (e.g., Microsoft Forms).
- Integrate one immersive tech like 360°, 3D interactive models, or VR.
- Collaborate across utilities – don't reinvent the wheel.



# Audience Questions

- How do you develop instructors to become **effective facilitators** of training for all generations? What's your current practice?
- Have you surveyed your workforce, the *Modern Learner*, on their **preferred training methodology**?
- Is your training content **readily available** to the workforce outside of the training environment (e.g., classroom)?
- If so, is it **bite sized** and in a format that everyone will be able to come to the same conclusion for how to perform a task?



Questions?





*Thank you!*

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