# Technician Training Joint Industry Project

## December 13th, 2007

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Letton-Hall Group

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# It’s 2028 …

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# Our Future, or an Unrealized Future?

- This vision can become a reality.
  - We have the **need**, highlighted in the recent INGAA Foundation Study, *Securing Our Future: Developing the Next Workforce.*
  - We have a **concept** and a **plan**, brought by the Letton-Hall Group.
  - We have **interest**, as evidenced by those of you who have chosen to participate.
  - We have a **facilitator**, The Southern Gas Association.

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# The Need

- INGAA Foundation Study, *Securing Our Future: Developing the Next Workforce*
  - Strategy for maintaining a capable workforce in the coming years.
    - The level of skill development for technical employees is inadequate.
    - Transmission companies will add three to five percent annually to their workforce over the next five years, with 10 percent attrition rate.
      - The pool of experienced technical employees in the natural gas industry is shrinking, while demand is growing.
    - The current annual industry total of 8,600 new technical hires is expected to increase to 10,200 in five years.

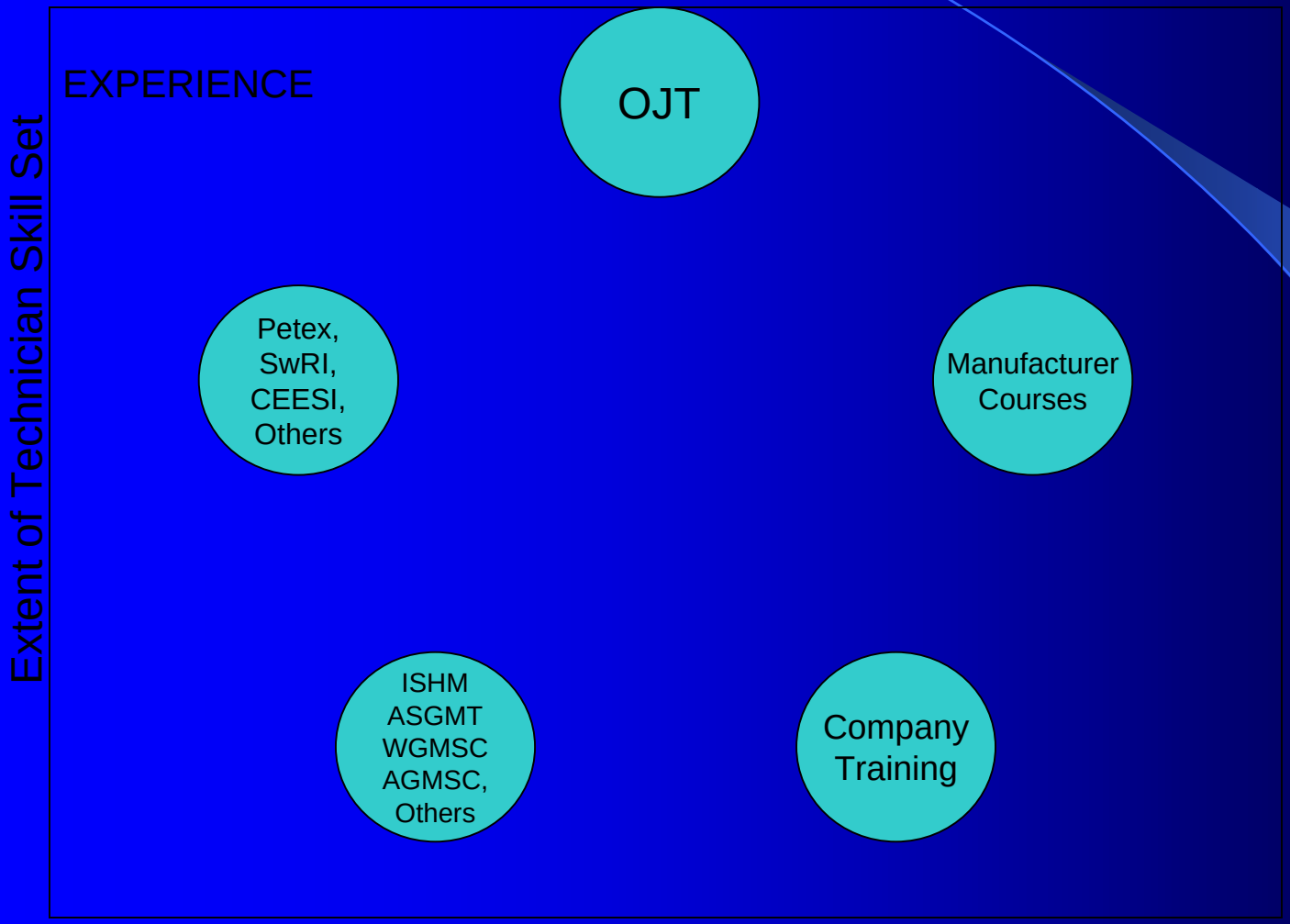
# The Need

- Current Offerings Fall Short in at Least One of the Following Ways:
  - Not industry-sanctioned.
    - The curriculum and instructors change frequently and abruptly without input from stakeholders.
    - Not explicitly incorporated into company career paths.
  - Not comprehensive.
    - Too advanced, too specialized.
  - Not targeted at entry-level.
    - Some available courses focus exclusively on senior level technicians and engineers, rather than entry-level.
  - Not long enough.
    - 3-5 days, even 2-3 weeks, isn't enough to prepare a technician for the field.

# The Need

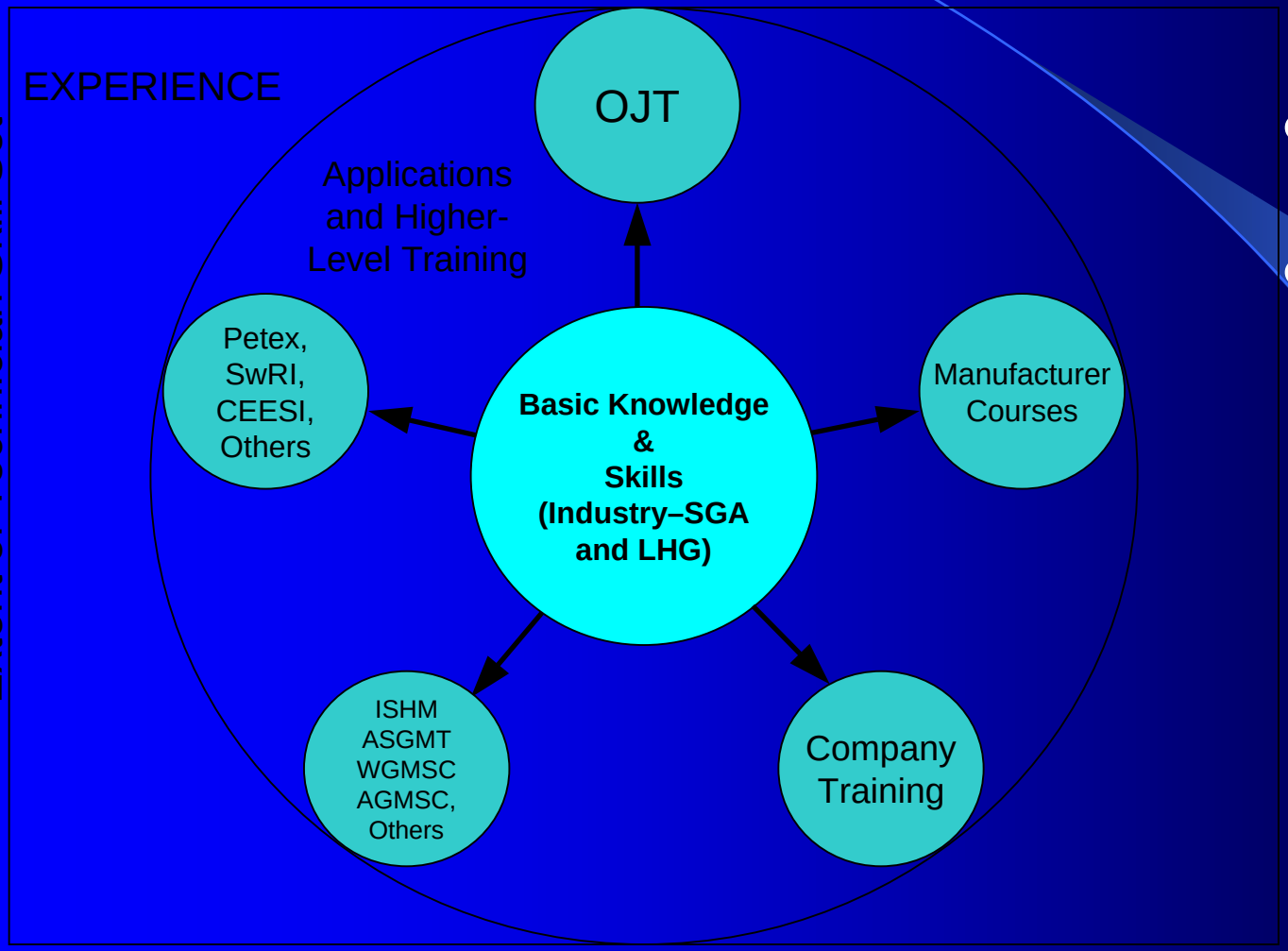
- Current Offerings Fall Short in at Least One of the Following Ways:
  - Not serious enough.
    - If you show up, you pass.
    - Sign in late, head out early and grab a beer.
  - Not challenging enough.
    - Passive learning, not interactive.
  - No exams to assess comprehension.
    - No definition or measure of comprehension.
  - Sales-oriented.

# The Concept




- The current training model:
  - Does not provide a foundation.
  - Is not well coordinated.

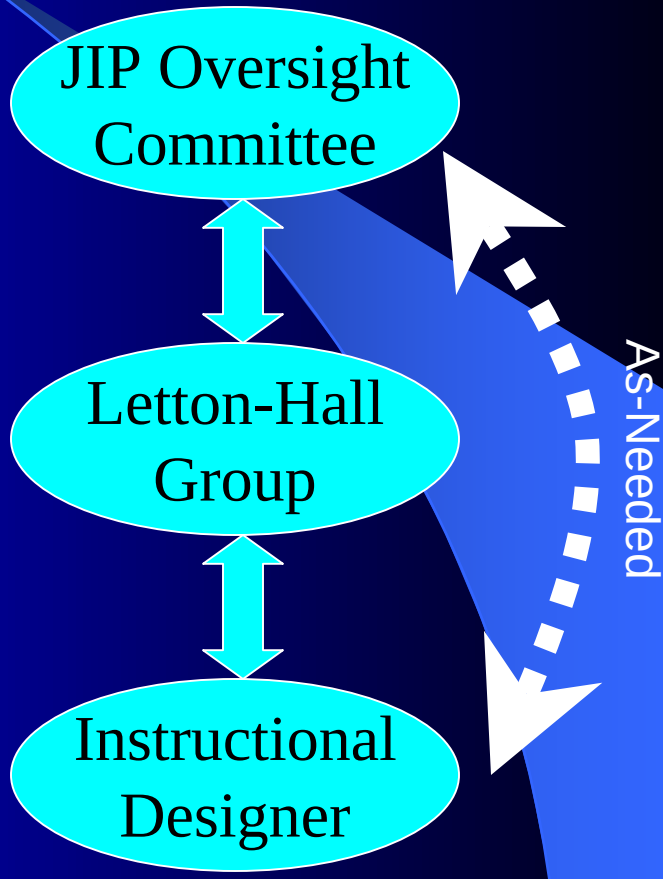
# The Concept – The Course as a Foundation




- Provides a foundation.
- Provides a means to coordinate (existing SGA committee structure).

# The Concept – Course Development

- Structure: Two Phases
  - Phase I will be structured as a Joint Industry Project, managed by SGA. The JIP Oversight Committee will work with Letton-Hall to develop the course curriculum.
  - The Letton-Hall Group will enlist the support of an Instructional Designer, with experience in blended-learning and adult education.
  - The Instructional Designer will participate in JIP meetings on an as-needed basis.

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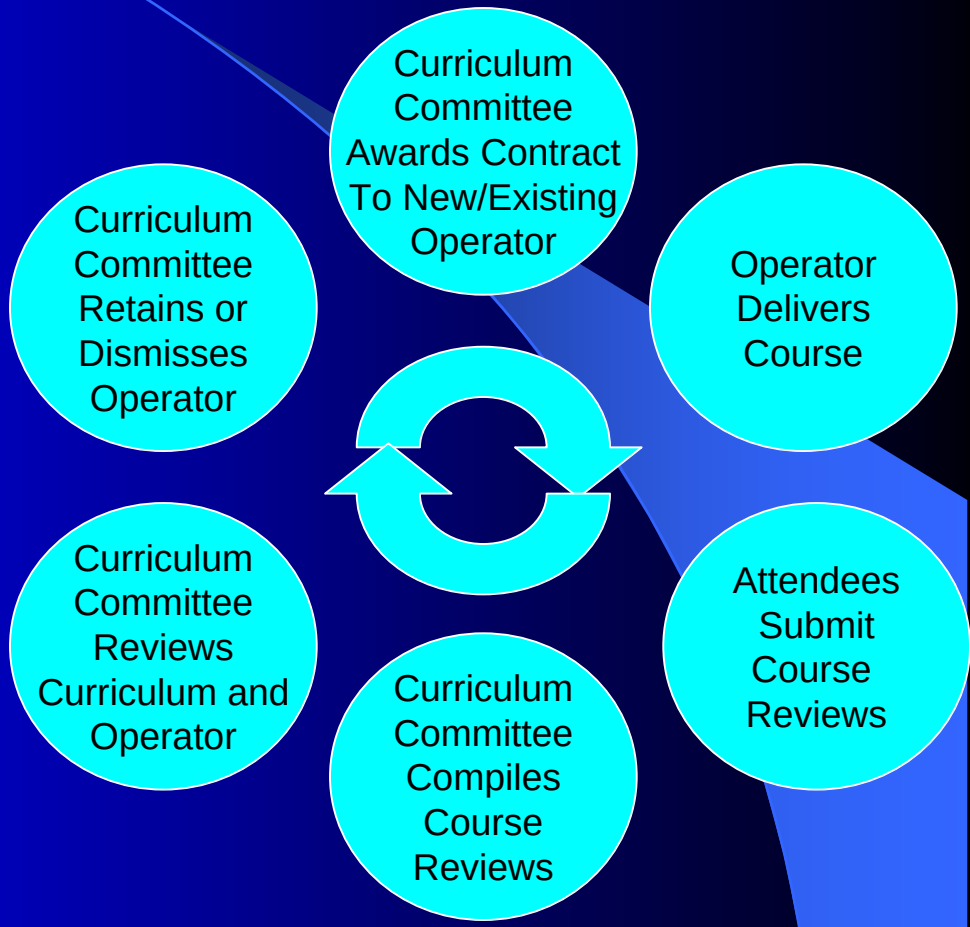
# The Concept – Course Operation

- Phase II is course operation.
  - The JIP Oversight Committee will convert to a standing curriculum committee.
  - The Curriculum Committee will take custody of the course material and responsibility for curriculum review and modifications, and operator retention (or dismissal).
  - This assumes that industry demand, course operating cost and price of course result in a successful business model.
  - Letton-Hall will be the initial course operator.

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# Interested Parties

- Here's a list of organizations who recognize this issue as a top priority:
  - Anadarko
  - Boardwalk Pipelines
  - CenterPoint Energy
  - Chesapeake Energy
  - El Paso Corporation
  - National Fuel Gas
  - Northern Natural Gas
  - OneOK
  - Southern Union
  - Southern Star Central
  - Williams
  - Kinder Morgan

# The Facilitator - SGA

- SGA can provide the committee structure and feedback mechanism needed to sustain this program.
  - Participation won't be limited to SGA members.
- SGA can provide logistics and support services to help make the program a success.
  - Experience with training courses.
  - Registration and advertising.
  - Experience with web delivery techniques.

# Who is the Letton Hall Group?

- Chip Letton, Ph.D.
  - Eighteen years with Schlumberger developing new products.
  - Nine years with Daniel as CTO. Developed Senior Sonic USM, multiphase meter, new chromatograph, others.
  - Co-founder LHG. Managed development of API RP 85 and RP 86. Proposed and managed DeepStar Project 8302 on deepwater measurement.
  - Provides deepwater production metering help to operators.
- Jim Hall, Ph.D.
  - Nineteen years with Schlumberger developing new products.
  - Nine years with Daniel, President of Flow Products Division, President of Daniel Europe.
  - Co-founder LHG. Key player in development of new ASME wet-gas measurement standard, DeepStar Project 8302.
  - Has provided measurement expertise on numerous subsea production systems worldwide.

# Who is the Letton Hall Group?

- Klaus Zanker
  - Fifty years in flow measurement.
  - Designed a flow conditioner that was ultimately adopted as a national (BSI) and international (ISO) standard. Designed and built calibration and research test facilities. Design and development of many flow meters
  - Manager of Flow Products at Kent Instruments.
  - Eleven years with Agar in both the UK and USA.
  - Six years with Anadrill - Schlumberger in Sugar Land, Texas.
  - Fourteen years with Daniel Industries in both the UK and USA.
- Eric Kelner
  - Thirteen years of flow measurement experience. Three with Questar Pipeline and ten with Southwest Research Institute. Joined LHG in July 2007.
  - Management of the GRI/GTI Transmission Measurement Research Program and the Metering Research Facility.
  - Participation in the development of AGA 3, AGA 5, AGA 7, API Chapter 14.1, GPA 2166.
  - Development of a fluid properties meter.
  - Development of a meter selection standard for a major production & exploration company.
  - Development and instruction of several short courses and workshops in partnership with SGA.

# Questions & Food for Thought for the Next Two Days

- Course Development
  - How much continuous time away from work is your company willing to support?
  - What do we mean by “Basic Knowledge & Skills?”
  - How do we define “competency.” How do we test for it?
  - How important is portability (the ability to take the course to various locations, or to offer a web-based or DVD delivery format)? What about PDA delivery?

# Questions & Food for Thought for the Next Two Days

- Course Development
  - Could the particular delivery method impact the effectiveness of the course?
  - What are the various job tasks that will be addressed by the course?
  - Would you like to give students the opportunity to “test out” of a particular course module?

# Questions & Food for Thought for the Next Two Days

- Course Operation
  - How many technicians per year will your organization send through the training?
  - What is a fair price for the course?
  - What is an ideal class size?
  - How much time should elapse between course modules?
  - Where should the course be taught – at company location, at a training facility, at a flow facility, at a community college, at a hotel?
  - Would you want only your own technicians present or would you be OK if they were part of a group including those from other companies?