

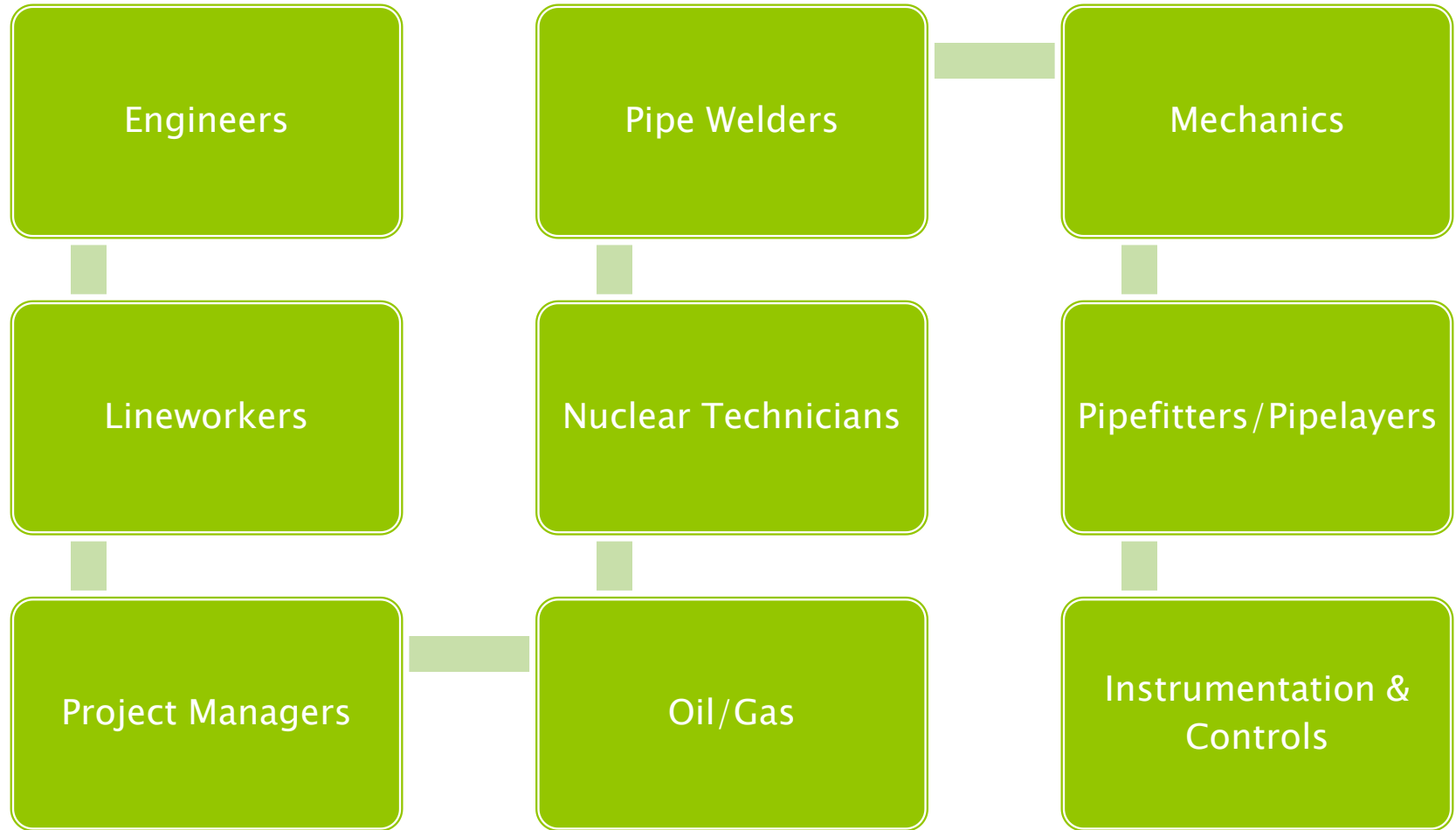
Are Your Students Prepared to Work in the Energy Industry?

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Michigan Career Education Conference
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Workforce Projections

- ▶ It is estimated that between 40% and 60% of the U.S. energy workforce will retire over the next five (5) years. (Kristina Johnson, Under Secretary of Energy, U.S. Department of Energy)
- ▶ In 5 years, it is estimated that 30 percent of the current nuclear workforce will be eligible to retire; in 15 years this raises to 50 percent. The nuclear workforce includes the 14,000 nuclear engineers working in the United States today. (American Nuclear Society)
- ▶ The problem, according to a report from the Association of Energy Engineers, is that there may not be enough skilled labor trained to handle the new jobs. (Clean Energy Authority.com)
- ▶ According to Albert Thumann, Executive Director of the Association of Energy Engineers, "The need to develop a pool of qualified energy & green collar professionals servicing the commercial, industrial, & governmental marketplace has never been greater. There is a dire need to implement programs and policies to stimulate effective energy efficiency training. The jobs are there – the skilled professionals to fulfill them may not be." (PR Newswire)

Most Talked About Shortages



Energy Industry Challenges

- ▶ Replacing 30 year experience with Gen X and Millennials
- ▶ Good ol' boy network
- ▶ Predominately white male workforce
- ▶ Relocation needed to remote locations
- ▶ High level of security requires strict background checks
- ▶ 50% of interviews are not passing the industry standardized test (math, spatial relations, reading comprehension)
- ▶ Shortage of (Navy) Veterans



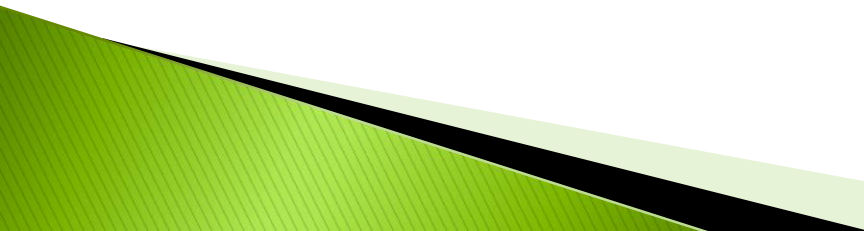
Energy Companies Want it All

- ▶ Mechanical aptitude
- ▶ Physically fit
- ▶ Strong math
- ▶ Excellent troubleshooting
- ▶ Willing to relocate
- ▶ No felonies
- ▶ Misdemeanors (none or traffic only)
- ▶ Ability to pass psychological tests
- ▶ Good credit history
- ▶ Pass a drug test
- ▶ Basic computer skills
- ▶ Valid driver's license and passport

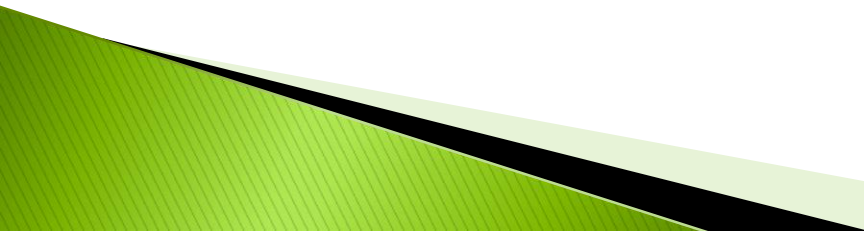
The Industry is in Panic Mode!



What is the Industry Starting With?

- ▶ Recruiting special populations
 - ▶ Remedial math training programs
 - ▶ Reviving apprenticeships
 - ▶ Partnering with elementary schools to get kids interested in energy careers
 - ▶ Energy Boot Camps and Academies
 - ▶ Partnering with community colleges/technical schools for gap training
 - ▶ State energy consortium projects
 - ▶ Programs to get minorities interested in energy careers
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Pre-Employment Screening

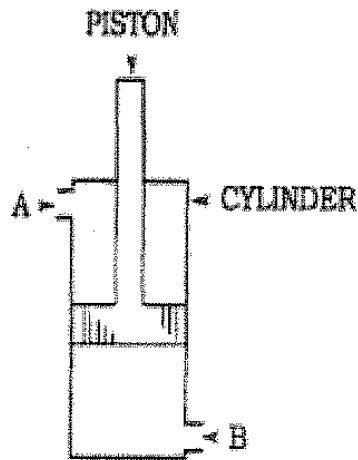
- ▶ Physical Exams: pass physical and pulmonary tests
 - ▶ Industry knowledge tests (written or practical)
 - ▶ Psychological Exams: written and/or oral
 - ▶ Background Checks: felonies and misdemeanors
 - ▶ Homeland Security: TWIC card
 - ▶ Drug Tests: 10 panel urine or hair (DNA)
 - ▶ Computer skills: general MS Office, typing, or email
 - ▶ Credit Checks
 - ▶ Driving Record
 - ▶ Mechanical Aptitude Tests: pass POSS, MASS, CAST
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POSS Test– Mechanical Concepts

Mechanical Concepts. This test measures the ability to understand mechanical principles. There are 44 multiple-choice items. Each item contains a pictorial description of a mechanical situation, a question, and three possible answers. This test has a 20-minute time limit.

Examples of the **Mechanical Concepts Test** are:

x) In the figure below, at which point should pressurized air enter the cylinder to lower the piston? (If both, mark C.)



- A
- B
- C (Both A & B)

Full Disclosure

- ▶ Multiple page applications
- ▶ Want to know everything
- ▶ Truth may hurt chances
- ▶ Misdemeanors– case by case based on company policies/locations
- ▶ Background checks: driving, alias, multi–state criminal, sexual conduct, education verification, work verification
- ▶ Background Checks (3 year, 7 year, 10 year, Forever)



Energy Industry Interview Trends

I. Conducted by Field Managers instead of Human Resources

- ▶ Technical knowledge
- ▶ Personality
- ▶ Attitude

II. Behavioral Based Interviews

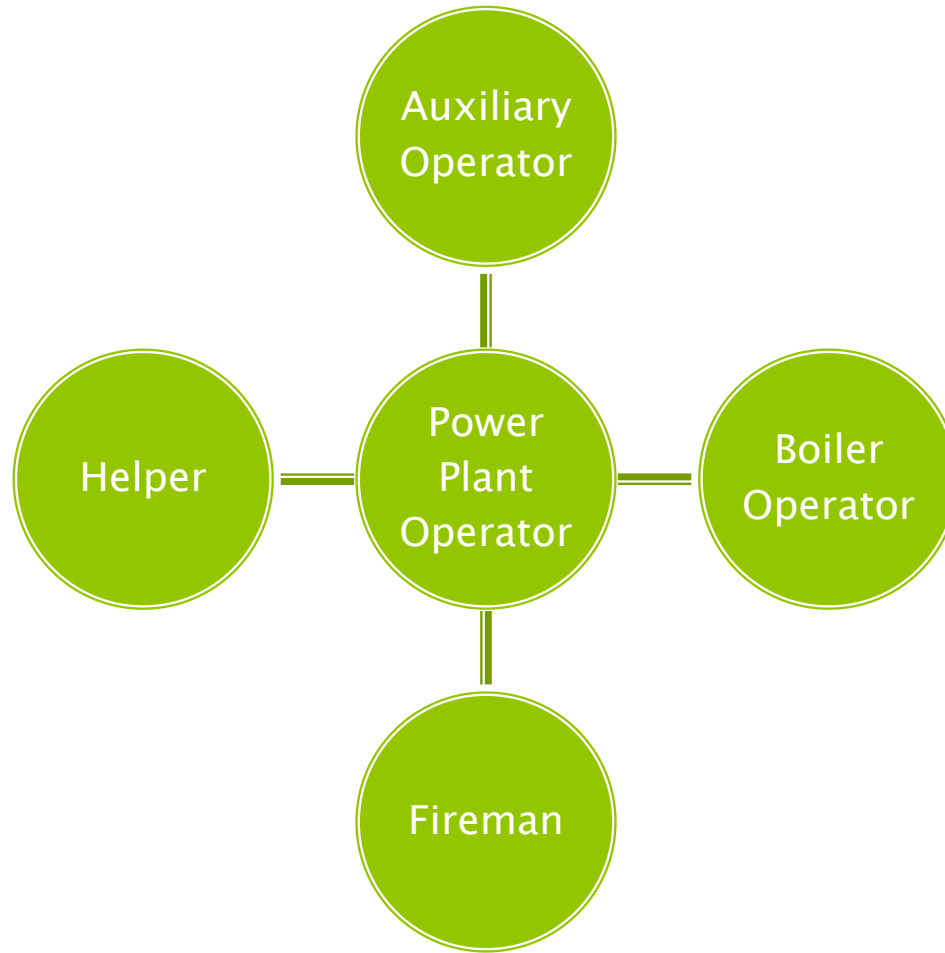
- ▶ Tell me about....
- ▶ Give me an example....
- ▶ Describe how you handled.....

Relocation is Key

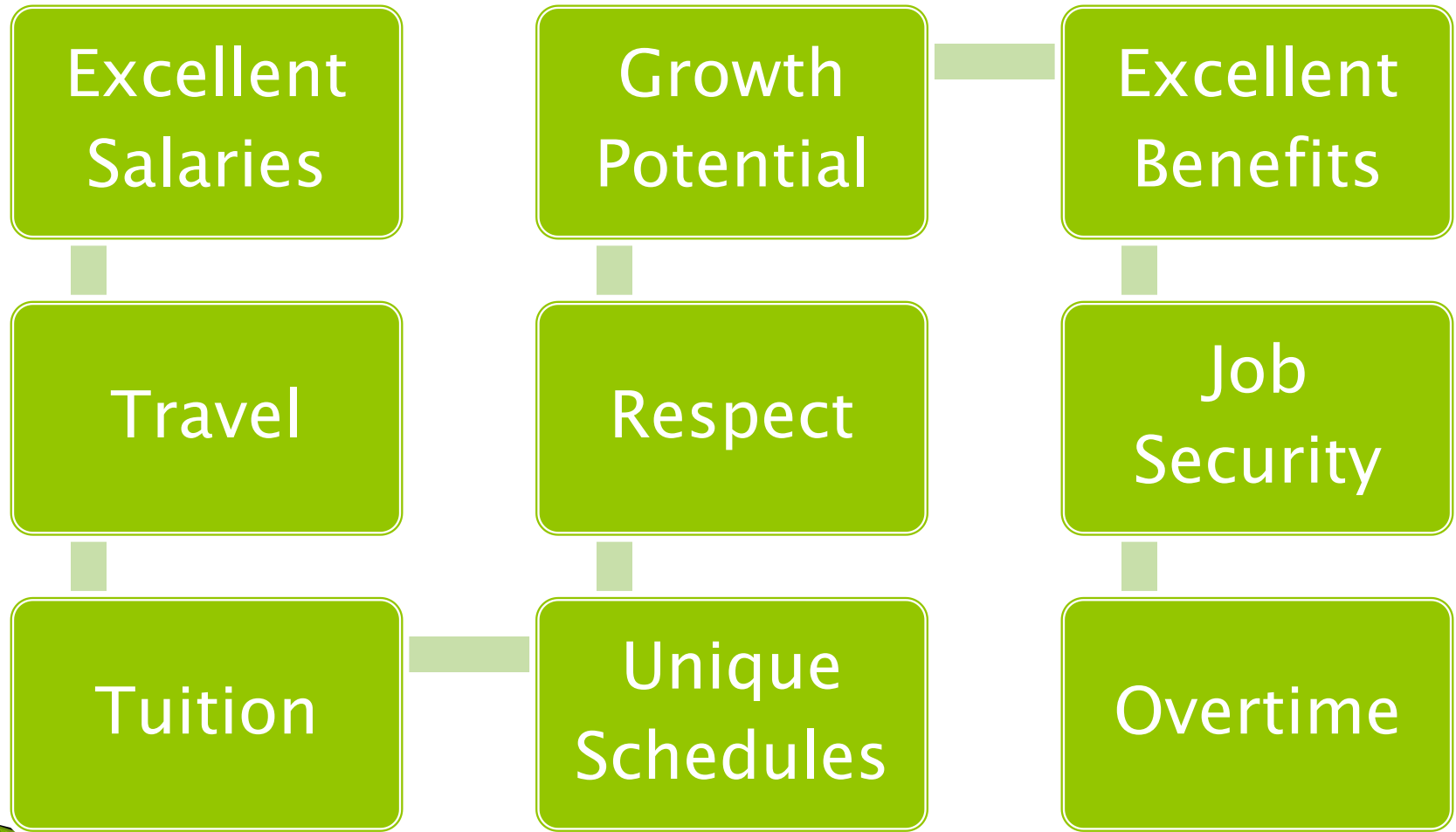


- ▶ Power Plants are in rural areas
- ▶ Wind farms in remote areas
- ▶ Oil and Gas industry heavy in the south
- ▶ Traveling must techs live near airports or service centers
- ▶ Interview process: convince them they will relocate and stay, make a connection
- ▶ Very few have relocation packages

No Consistency With Job Titles



Is It Worth It?



Resources


- ▶ Getting kids interested in energy careers: www.cewd.org
- ▶ Job Titles: www.renewableenergyjobs.com
- ▶ Job Titles: www.thinkenergygroup.com
- ▶ EEI Tests: POSS, MASS, CAST (www.eei.org). Practice test on DTE Energy site
- ▶ Sample high level positions: www.energycentral.com
- ▶ Training schools approved by energy companies: www.cewd.org (web site is still in process)
- ▶ Behavioral Interview Questions:
<http://blog.emurse.com/2007/05/21/complete-list-of-behavioral-interview-questions/>
- ▶ Pulmonary Function Test (PFT)
www.daviddarling.info/encyclopedia/L/lung_function_tests.html

Resources

- ▶ Interactive math practice in 2011: www.eei.org
- ▶ Nuclear Energy Information: www.nei.org
- ▶ Power Plant Jobs: www.powerplantjobs.com
- ▶ Drug Testing: <http://www.uatests.com/types-of-drug-tests/index.html>
- ▶ Wind Energy: www.awea.org
- ▶ Energy-related conferences: www.energycentral.com
- ▶ Teacher tool kits for teaching energy www.cewd.org
- ▶ Energy Industry Info <http://www.energy.gov/>
- ▶ Michigan Energy Fair www.glrea.org
- ▶ Free wind curriculum www.windwiseeducation.org

Meet Energy Companies

5th Annual Career Expo

- ▶ Thursday, May 12, 2011
 - ▶ 12p–5pm
 - ▶ Free, open to public
 - ▶ Energy exhibitors
 - ▶ Demonstrations
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Questions

Thank you for your time today!

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