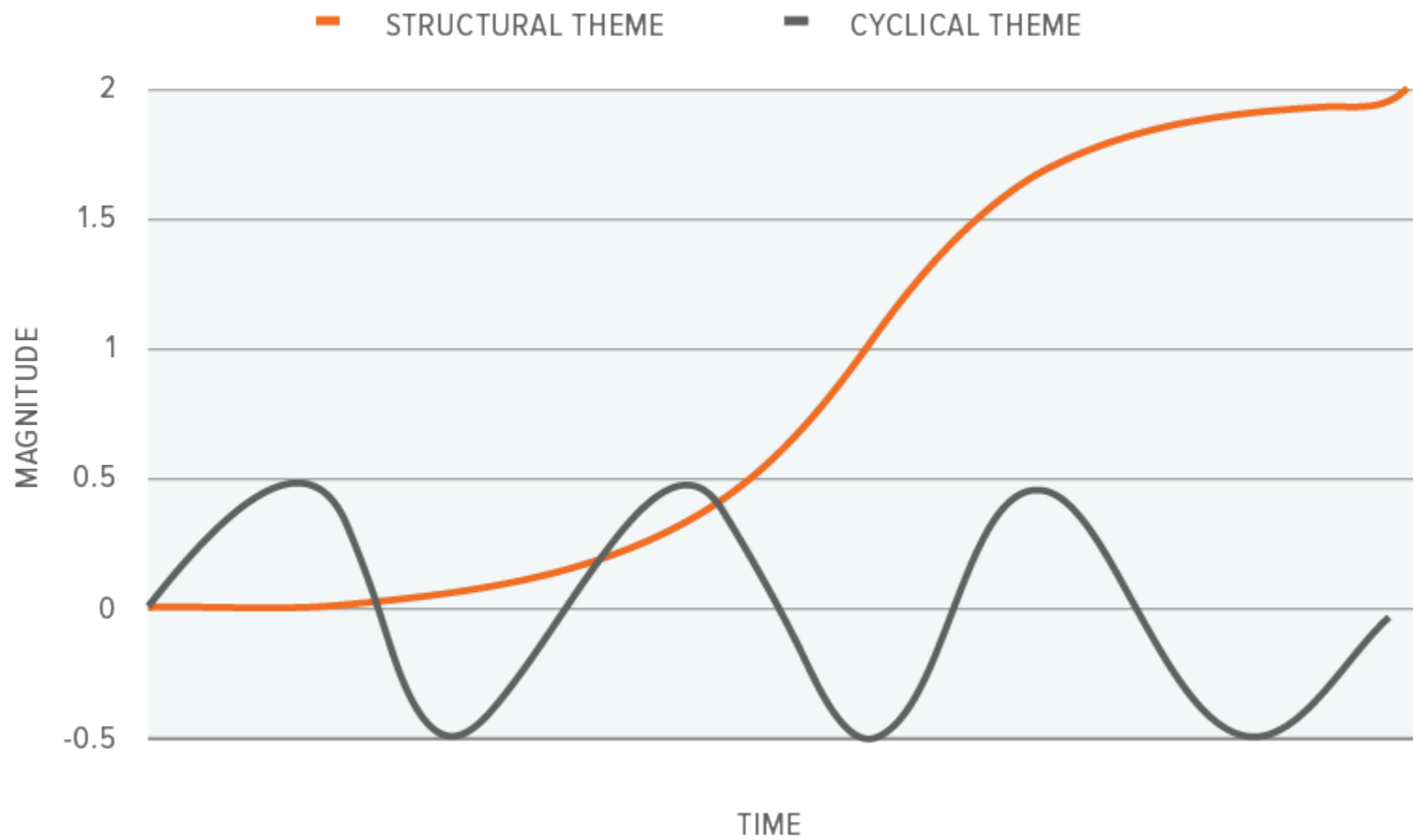




Lignite Industry Career Choices

Kent Ellis

CYCLICAL vs. STRUCTURAL THEMES

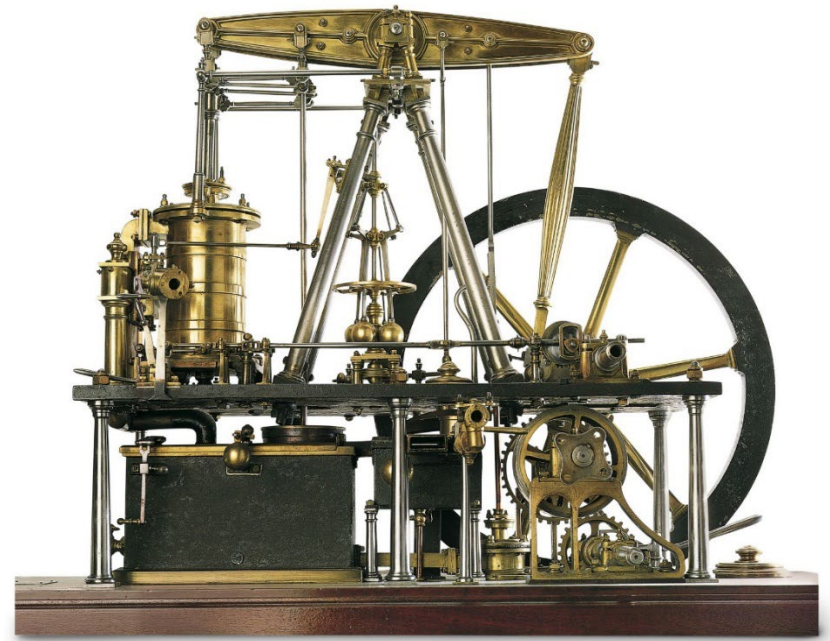
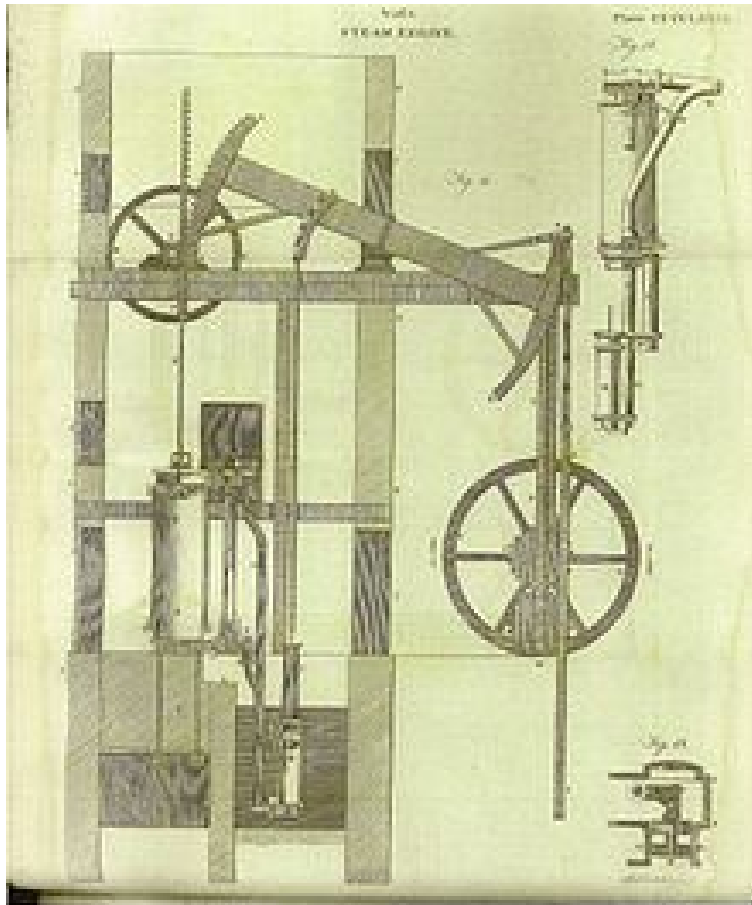


For illustrative purposes only.

1701



1765



1882

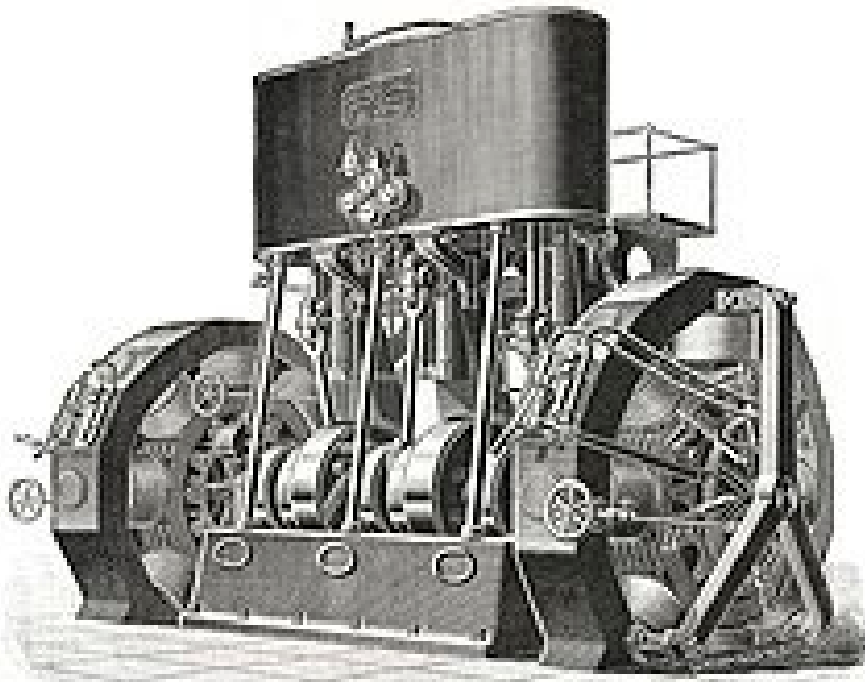
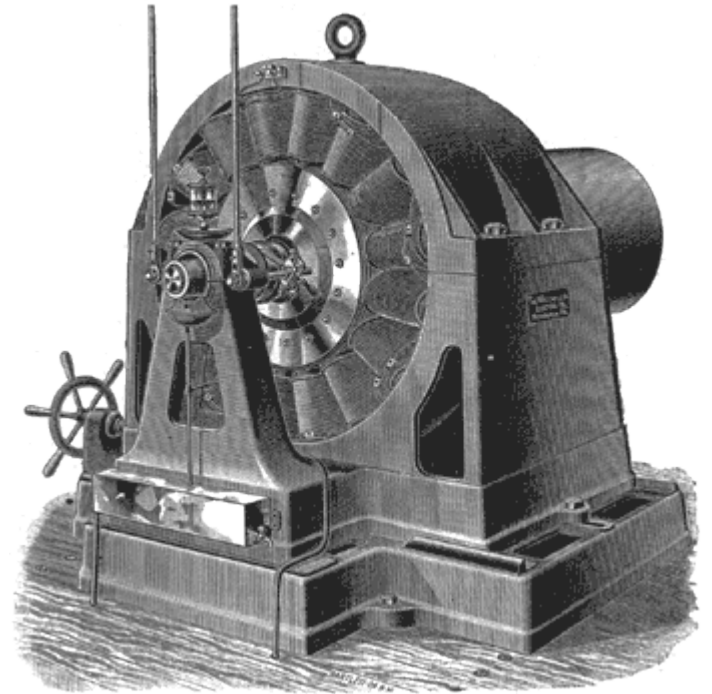
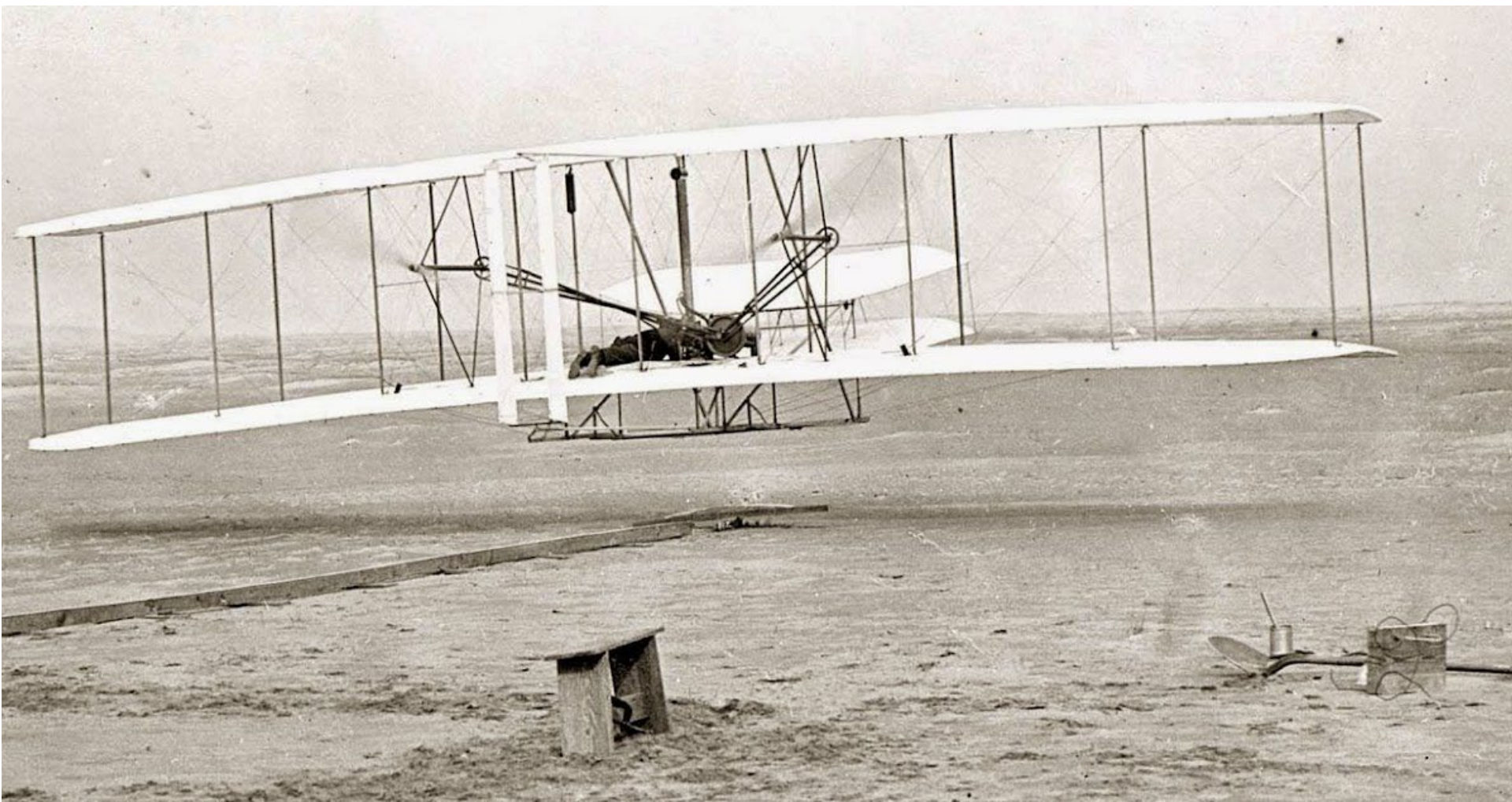


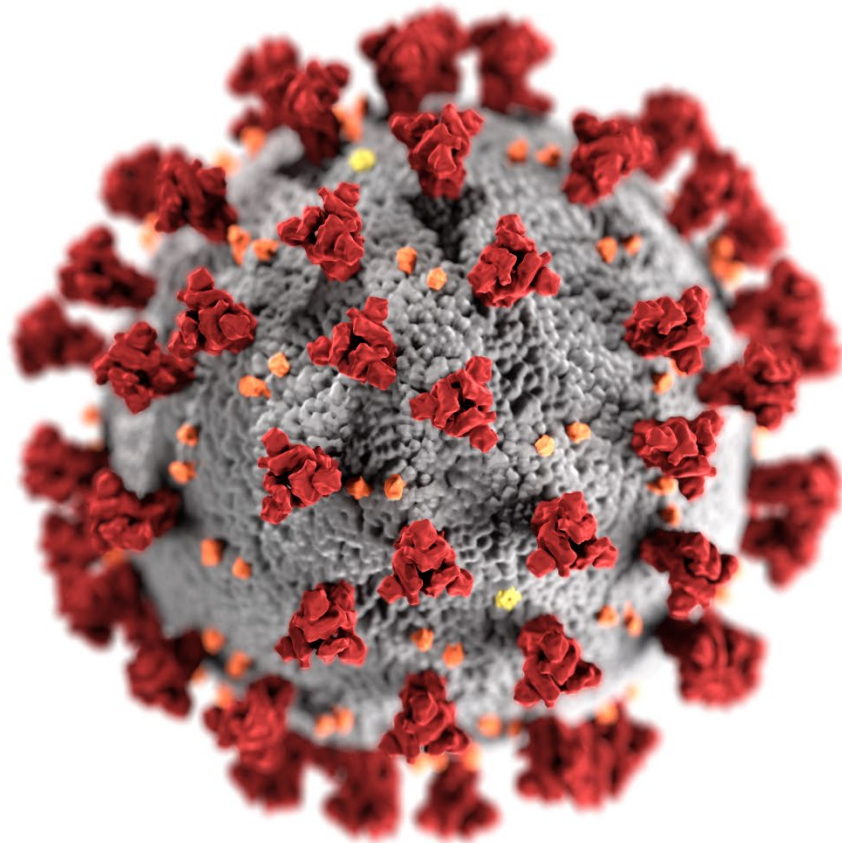
Fig. 363.—Edison Central Station Dynamo and Engine.



1903



2019



Constructive Destruction

- de-urbanization / de-globalization
- localized supply chains and manufacturing
- online / hybrid education
- videoconferencing / telemedicine
- e-commerce / delivery services / post office
- remodeled homes for office space & day care
- automation / robotics / AI

1890-2022



Question

What percent of the ND population have a high school diploma as a terminal degree?

- A. 43%
- B. 50%
- C. 56%
- D. 68%



- 30.7% Bachelors Degree or Higher
- 13.3% Associates Degree

Question

What percent of male high school graduates make more money than college graduates?

- A. 15%
- B. 21%
- C. 26%
- D. 32%

Question

What percent of male college graduates will make less than the average high school graduate?

- A. 15%
- B. 21%
- C. 26%
- D. 32%

“The staggering jobless numbers for twenty something workers are no surprise to Lindsey Rhein, 24, of Placentia, Calif. She’s been out of work for nearly four months after getting laid off as a legal assistant for a construction company.”

“She’s applied to over 700 jobs and has gotten only seven interviews, leading nowhere. Even with a master’s degree in forensic psychology and a bachelor’s in sociology, she hasn’t been able to land a sales associate job at Target, and she can’t even get a call back from McDonald's, where she applied for the fast food chain’s management training program two months ago.”

“The experience has shocked Rhein.”

TECHNOLOGICAL LITERACY

“We need engineers desperately . . . technological literacy is no luxury – it’s now basic.”

“People think computers are technology, but computers are only a tiny part.”

Ioannis Miaoulis, Director of Boston’s Museum of Science

MARKET BASED ECONOMY

Large wage premiums demonstrate that the labor market is signaling that skill is highly valued.

Help Wanted:
Starting Salary
\$63,750



Question

Which North Dakota county has the highest median income?

- A. Burleigh
- B. Cass
- C. Mercer
- D. Williams

\$82,087

Mercer County

2020 US Census

BSC

Electrical Transmission Tech	\$67.31
Energy Management	\$76.92
HVAC	\$80.00
Instrumentation & Control	\$47.50
Process Plant Technology	\$60.10

NDSCS

Construction Management	\$37.50
Diesel Technology	\$37.50
Electrical Technology	\$42.60
John Deere Technology	\$43.75
Welding Technology	\$45.50

APPRENTICESHIPS



94%

94% of apprentices who complete an apprenticeship program retain employment, with an average annual salary of \$70,000

www.apprenticeship.gov

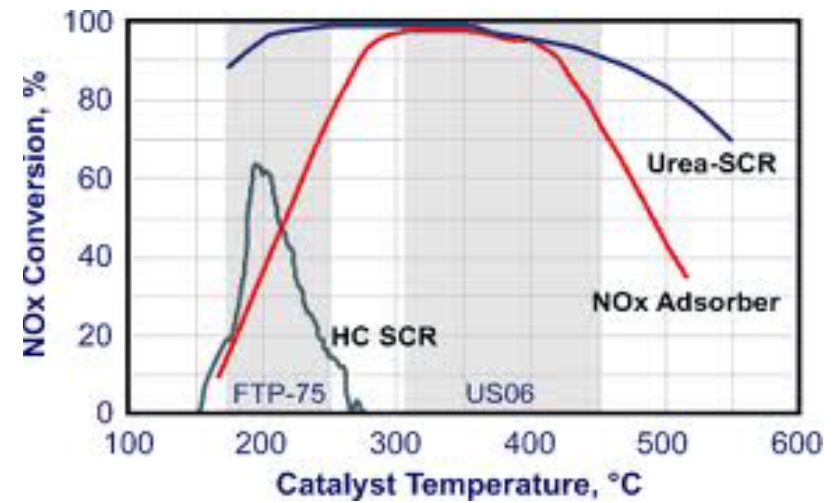
OPERATING ENGINEERS



BOILERMAKERS



INSTRUMENT CONTROL TECH



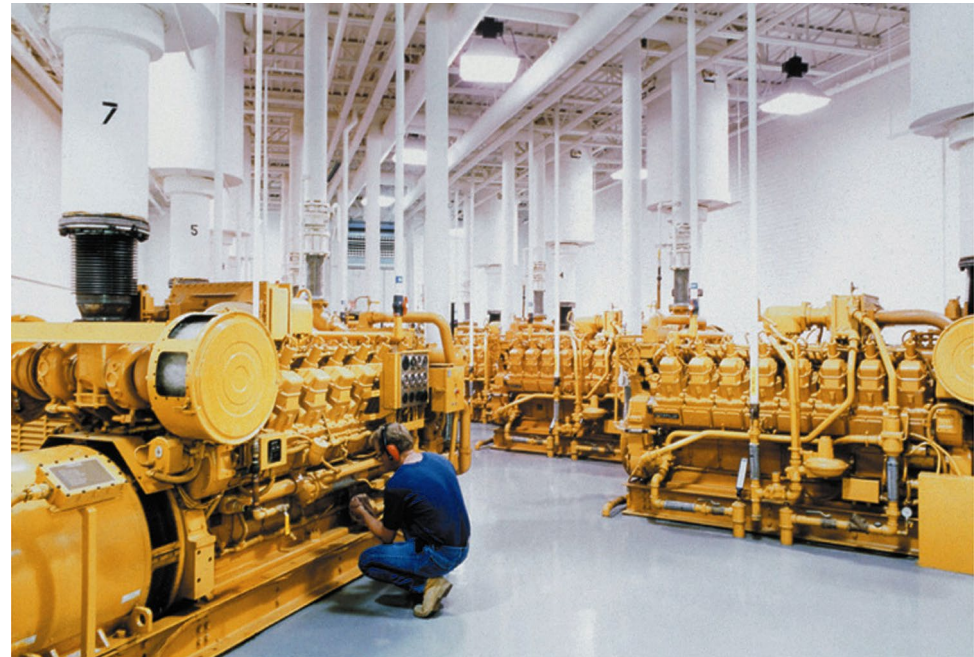
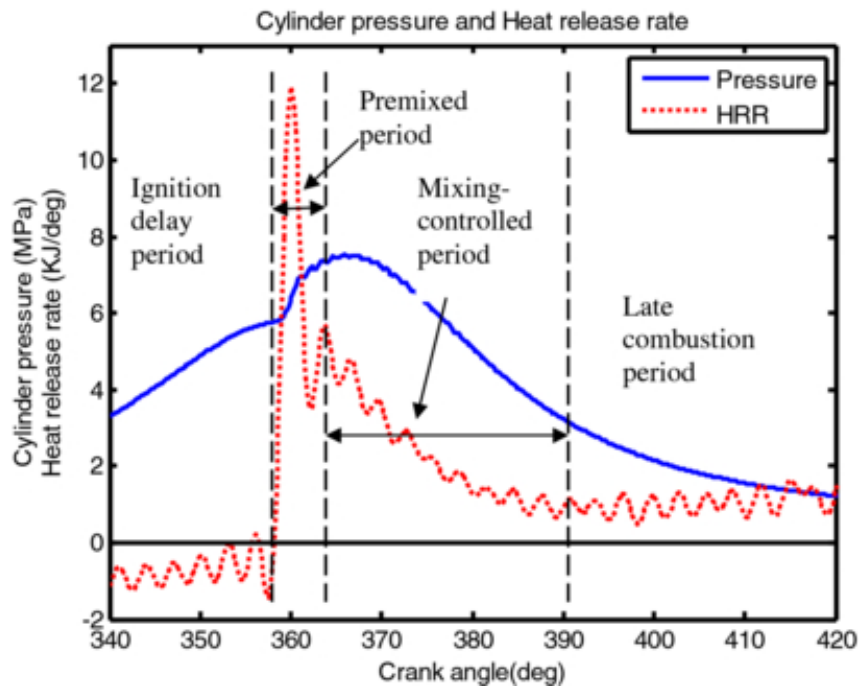
LINEMEN



IRON WORKERS



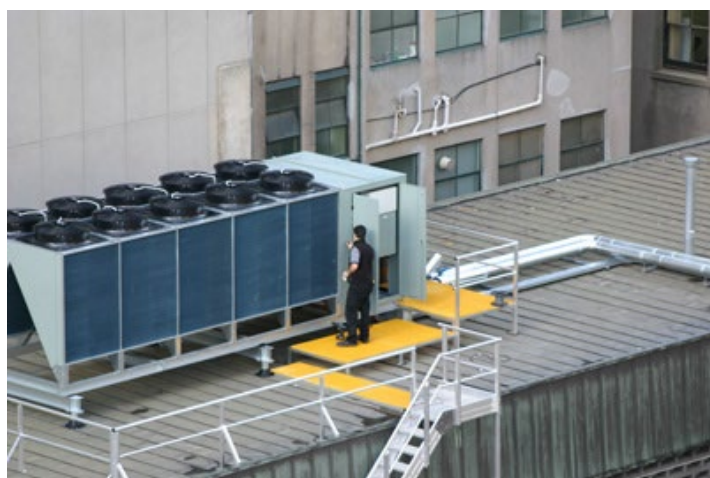
DIESEL TECH



Mechanical Maintenance



HVAC



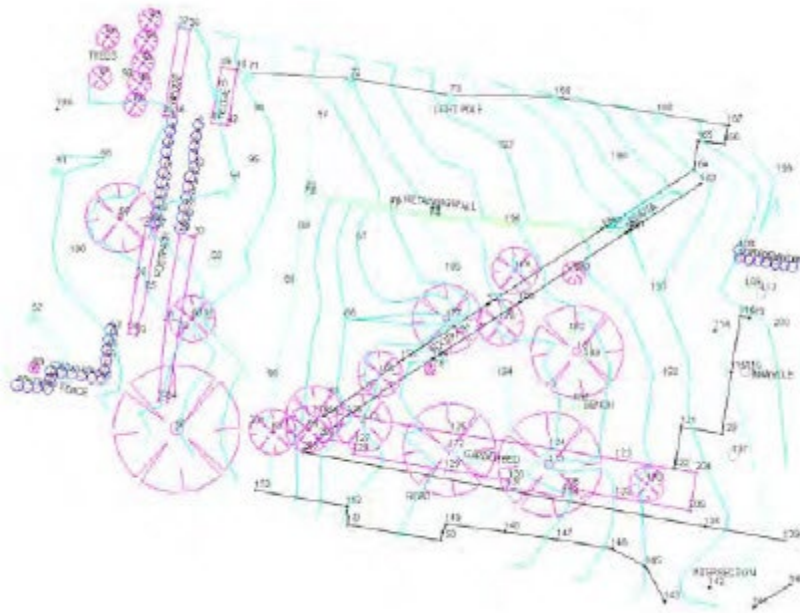
Electrician



MILLWRIGHT



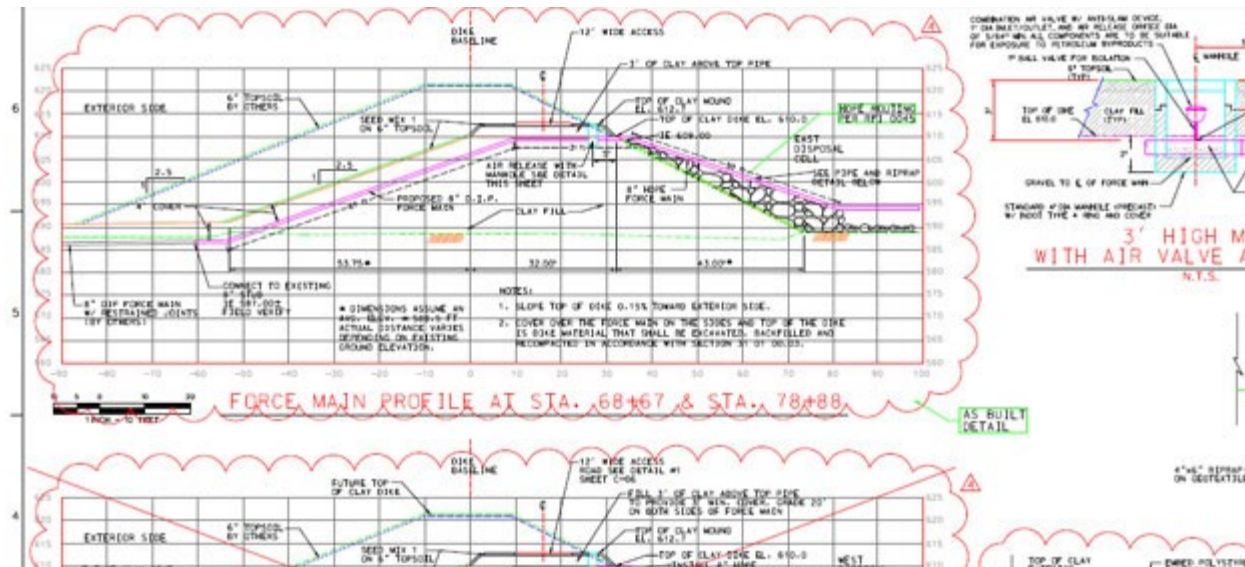
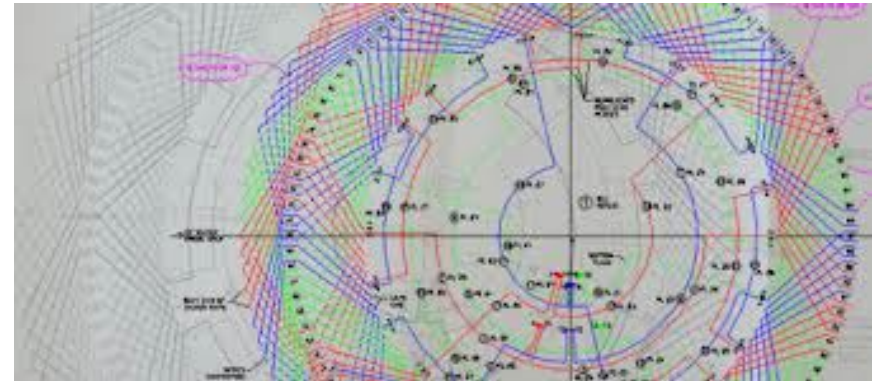
Surveying and Engineering Tech



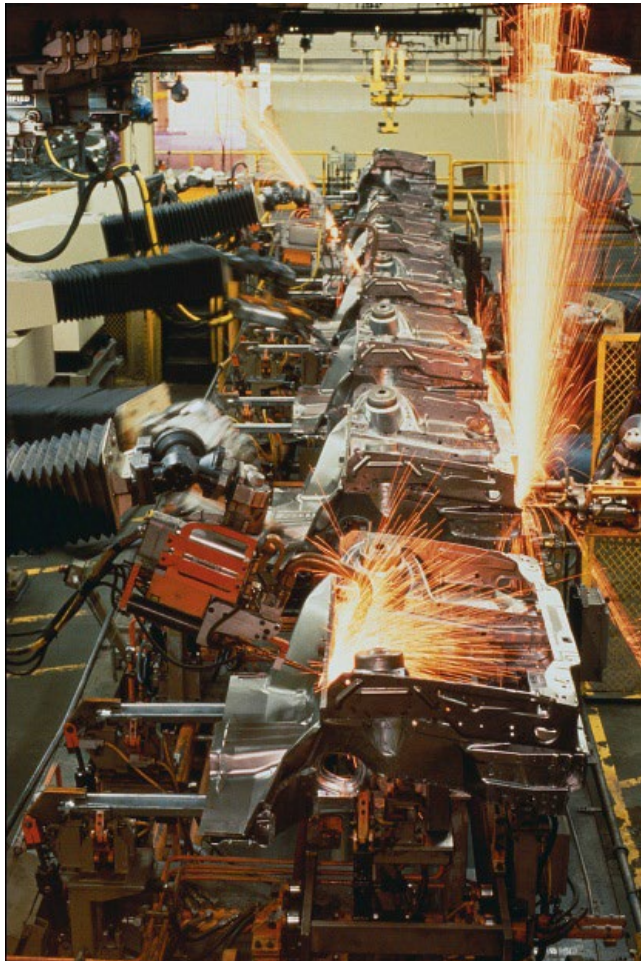
COMMERCIAL PLUMBING



Drafting & Estimating Tech.



WELDING





Machinist & Toolmaker



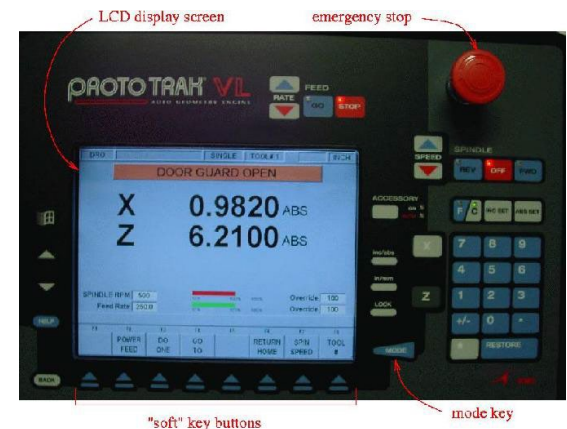
Skills Sets in the Energy Industry

- Accountant / Financial Analyst
- Auditor / Lineman
- Plant Operators / Legislative Lobbyist
- Chemist / Biologist / Soil Scientist
- Public Relations / HR
- Safety Director / Attorney
- Surveyors / Explosive Experts



Required Skills For New Energy Workers

- Math, science, vocational / technical skills
- Focus on workplace safety.
- Strong communication skills.
- Ability to work in like-skill or multi-skill teams.
- Computer literate, especially, PC operating systems, controls systems, and computerized maintenance management systems.



65 years old

“HE SIMPLY RUNS
OUT OF WORDS”

Census Bureau

3,300,000

Fargo, West Fargo

and Moorhead

Every 3.0 Weeks

Build and Electrify

Airport

12 Hockey Rinks

7 Golf Courses

33 Elementary Schools

7 Middle Schools

7 High Schools

4 Colleges

Restaurants

Grocery Stores

Fire Stations

Police Stations

Lumber Yards

Bridges

Roads

Hospitals

Shopping Centers

?

HELP WANTED: \$600/week



TXT MSG:



“U R FIRED”

