Public Power Workforce Issues

Texas Public Power Association
South Padre Island, Texas
March 28, 2007

Mycoff & Associates

Where are we?

Demographics

Baby Boomers (1946 – 1964)
About 78 million

Generation X (1965 – 1980)*
50 million
(36% drop!)

Generation Y (1978 – 2000)*
(Millennial Generation)
Approximately 76 million

***Dates vary depending on source**

Forecasted age of workforce

By 2010, 30% of the U.S. workforce will be over 65 and 52% will be between 55 and 64.

Graduating Engineers

“During the past 15 years, colleges and universities reported a 50 percent drop in the number of graduating engineers.”

Sept. 1, 2002 issue of *Transmission & Distribution World*

Graduating Power Engineers

“today there are only about 500 undergraduate degrees awarded annually in power engineering, compared to nearly 2,000 in the 1980s”

IEEE

Utility Worker Age

Average age of utility workers is nearly 50, several years older than the national average.

Average age of the workforce in power plants is 48.

Average age of Plant Managers is 48.

Average age of operations, maintenance, and engineering managers on power plants is 50 to 52.

2010 Labor Demand

Skill Type	2003 employment	2010 demand	Percent Change
Electrical Engineers	149,540	175,000	17%
Mechanical Engineers	214,070	251,000	17%
Lineman	99,290	108,000	9%
Electricians	575,980	819,000	42%
Boilermakers	17,970	28,000	56%
Construction Laborers	845,890	926,000	9%

Bureau of Labor Statistics

PUBLIC POWER

In 2002, anticipated retirements by 2006:
First Line Supervisors (43%)
Senior Managers (41%)
General Managers/CEOs (27%)

By 2005, anticipated retirements by 2010:
Skilled Trades (63%)
First Line Supervisors (50%)
Senior Managers (36%)
General Managers/CEOs (30%)

Reported by the American Public Power Association;
Workforce Planning for Public Power Utilities, 2005, Page 5

RURAL COOPERATIVES

Nearly one-third of employees are 50 or older.

Over the next five years, one-third of General Managers will be eligible for retirement.

Nearly two-thirds of line superintendents and half the vice presidents for operations/engineering are older than 50.

Reported by the National Rural Electric Cooperative Association

Investor-owned utilities

American Electric Power (AEP): As of 2005, 50% of exempt supervisors, 38% of non-exempt line crew supervisors, and 37% of meter reading personnel in electric distribution were eligible to retire.

“at least one-half of the technically trained workforce is expected to reach retirement age in the next 5–10 years”

Survey of utility executives reported by the Electric Power Research Institute
Electricity Sector Framework for the Future Vol 1 August 6, 2003 Page 21

Legislative Influence

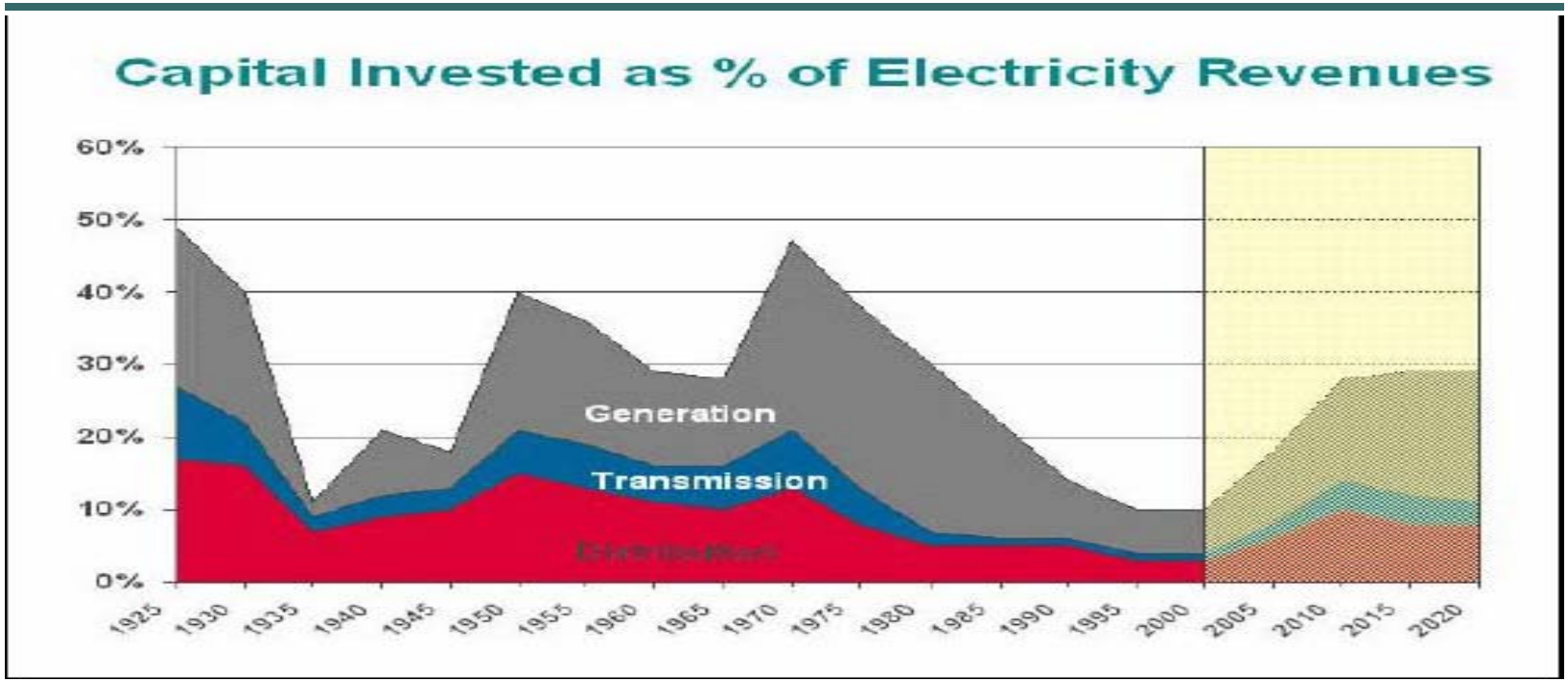
Energy Policy Act of 2005 repeals Public Utility Holding Act (PUCHA) requirements.

Mergers and Acquisitions Continue

March 2006: MidAmerican Energy Holdings Co. acquired PacifiCorp.

April 2006: Duke Energy acquired Cinergy.

Capital investment to increase



"Capital expenditures by US electric providers were 12% of revenues during the 1990's, less than one-half of historic minimum levels and even below the level reached only briefly during the Depression."

Proposed new projects

May 2005: NuStart Energy named six sites from which it will pick two to build and operate new nuclear plants.

January 2006: Progress Energy Carolinas selected the Harris Nuclear Plant site for possible future nuclear generation expansion.

February 2006: South Carolina Electric & Gas Co. and Santee Cooper selected the preferred site and reactor design for a potential new nuclear facility.

March 2006: Duke Power selected a site for a potential new nuclear plant.

April 2006: Florida Power & Light intends to submit a license that could lead to new nuclear plant.

May 2006: TXU will spend $10 billion to build 11 new coal-fired power plants with a combined capacity of 8,600 MW.

August 2006: TXU plans to develop applications for two to six GW of new nuclear generation.

Current Situation Summary

The Baby Boomer workforce is approaching retirement.

The population of Generation X is 36% to 75% insufficient to replace the Baby Boomers.

The demand for engineering and line personnel is anticipated to increase between 9% and 56%.

Continual mergers mean large utilities will not hire and train personnel in sufficient quantity.

Capital expansion is forecast to increase dramatically putting more pressure on workforce demands.

How did we get here?

“Those who cannot remember the past are condemned to repeat it.”

George Santayana

Legislation

Public Utilities Regulatory Policies Act (PURPA) 1978.

Obligation to purchase energy at avoided cost.

Advent of the Independent Power Producer (IPP).

Disputed avoided cost.

Forerunner to retail competition.

Utilities and consultants added significant staff.

Perfect storm of capital expansion, inflation, and a catastrophic event.

March 28, 1979: Three Mile Island Accident.

Perfect storm of capital expansion, inflation, and a catastrophic event.

TMI symbolized nuclear power in the US:

- Significant capital expansion.
- Compulsory plant modifications.
- Vindicated environmental opposition.
- Perfect storm of double digit inflation and runaway construction costs.
- Triggered rate increases.
- Consumer opposition.
- Hostile regulatory relations.
- Utilities and consultants added staff.

Regulation

FERC issued Order # 436 in 1985 and Order # 636 in 1992 officially launching "deregulation".

Mergers and Acquisitions

In 1985, InterNorth Pipeline acquired Houston Natural Gas creating Enron.

Mergers and Acquisitions

In March 1988, Northeast Utilities acquired the bankrupt Public Service New Hampshire.

Mergers and Acquisitions

In 1992, Kansas Power & Light merged with Kansas Gas & Electric to become Western Resources.

Mergers and Acquisitions

Utilities consolidated to achieve a larger customer base, increase revenues and more physical resources. Bigger was better.

The Mantra was to obtain synergies through reducing staff, re-engineering, business process improvement, downsizing or right sizing.

More regulation

1996: FERC Orders # 888 and # 889 opened transmission access, provided for stranded cost recovery and created the Open Access Sametime Information System (OASIS) rule.

1999: FERC Order # 2000 “encouraged transmission owners to voluntarily join regional transmission organizations”.

ISO/RTO

ERCOT: 141 active Qualifying Scheduling Entities, about 400 staff, expected to reach 650 by 2008.

PJM: over 500 employees.

MISO: over 640 and plans to add 300.

CAISO: approximately 600 plus 150 contractors.

Summary

Industry, especially investor-owned utilities, added substantial personnel in the 1970's and 1980's, which were primarily "baby boomers".

Cost cutting, mergers and acquisition by investor-owned utilities resulted in dramatic personnel reductions beginning in the mid 1980's and continuing through today.

RTOs/ISOs depleted the supply of trained transmission and system operations personnel.

Entry-level personnel recruitment and training were the most significantly reduced.

What do we do now?

1. **Recognize the importance of intellectual capital.**
2. **Compensate competitively.**
3. **Recruit constantly.**
4. **Change personnel selection to focus on quality.**
5. **Train.**
6. **Retain selected individual beyond retirement.**
7. **Adapt policies for generational needs.**

What is intellectual capital?

The creators of technologies.

- Computers
- Nuclear
- Improved heat rates from combined cycle and pulverized coal.
- Circulating Fluid Bed (CFB)
- Integrated coal-gasification and combined cycle (IGCC)
- Wind (renewables)

Those that optimized existing systems.

- Interconnected system planning and operations
- Reliability (CAIDI, SAIDI, SAIFI)
- Power marketers (TEA, ACES)
- Joint purchasing affiliations (Co-Electric)

Those that developed new markets.

- Wind (10%, 5%, 95%)
- Branding (Touchstone Energy)

Compensate competitively!

Constant data collection.

Trap of old statistics.

Competitors for intellectual capital are in three, not one sector.

CEO compensation including incentives

IOU's (About $1 billion in revenues): $1,000,000+.

Generation & Transmission Coops ($400 million to $1 billion in revenues): $350,000 to over $600,000.

Public Power utilities (About $1 billion in revenues) $300,000 - $500,000.

Distribution Coops ($150 to $250 million in revenues): $275,000 - $400,000+.

Public Power utilities ($100 - $200 million in revenues): $110,000 - $200,000.

Distribution Coops ($25 – $100 million in revenues): $140,000 - $250,000.

Public Power utilities ($25 - $100 million in revenues): $100,000 - $150,000.

Is this a new trend?

February 2006: Bill Fehrman, President of the Nebraska Public Power District, accepted a position as Senior Vice President of MidAmerican Energy Holdings Company responsible for the integration of PacifiCorp into the MidAmerican organization. Fehrman is now President of PacifiCorp Energy.

Public Power is positioned to be the biggest loser in the competition for intellectual capital.

Third in a three sector race is not a good position.

Averaging those in third place is a poor strategy.

It may be politically defensible, but it ensures mediocrity.

Who wants average personnel?

Recruit constantly!

Experience is preferable.

More must be put in the pipeline.

Universities, colleges, technical schools, and high school.

Traditional recruiting techniques.

Give universities and colleges a reason to resurrect power programs!

Internships, cooperative work-study programs, summer jobs, supporting power professors, grants.

Thomas Edison State College and PSE&G Partner to Develop Nation's First Bachelor of Science Degree Program in Energy Utility Technology the nation's first baccalaureate degree program in energy utility technology, a program designed to help the energy industry meet labor shortages expected over the next 15 years.

TRENTON, N.J., March 15, 2006
PRNewswire

Change personnel selection to focus on quality.

Recruitment must be experience AND talent based.

- **A**bility
- **S**ubstantive Knowledge
- **S**uccess
- **E**thics
- **S**trategic Vision
- **S**tyle

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Ability:

Talent, aptitude, capability, wisdom, or intellect. Un-teachable ability to think, reason, and learn.

Substantive Knowledge:

Some applicable experience is essential. Old clichés like “a good manager is a good manager,” must be discarded. A fast food restaurant manager will not automatically run a utility well.

Success:

Use metrics. Brilliant, experienced people who accomplish nothing add no value.

Verify. “People say believe half of what you see and none of what you hear.”*

The true measure of ability.

*I Heard It Through The Grapevine; Gladys Night and the Pips in 1967 and Marvin Gaye, 1968

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Ethics:

Call it core principles, moral fiber, moral center, or integrity, but it is essential.

What is right or what can he or she get away with?

Strategic Vision:

Think globally; act locally.

A global perspective of industry issues is essential.

Executable ideas of what must be done is critical.

Someone waiting to be told where he or she is to take the organization is not a leader.

Style:

Ability, Substantive Knowledge, Strategic Vision, and Ethics, are what is done.

Style is how it is done.

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Be especially wary of those who lack ethics.

Substantive Knowledge is what we will be losing.

Ironically, it is the only topic that can be taught.

Quality, not quantity!

Pay more for a smaller staff that produces results, than less for more employees that do not.

Train!

Identify performers and future leaders.

Develop industry knowledge.

Retain retirees

Succession Planning

Intellectual Capital for Knowledge Transfer

Retains Industry Expertise

Mentoring

Adapt policies for generational needs!

Retiring Baby Boomers

Generation X

Generation Y / Millennial Generation

Retiring Baby Boomers

Optimistic, sacrifice family, lead by consensus, annual feedback.

75% of baby boomers plan to continue working in some capacity according to a study by Merrill Lynch and AARP.

Flexible work schedules and leaves of absences to allow more leisure time.

Individual contracts to accommodate varying compensation and fringe benefit requirements.

Generation X

Skeptical, Pragmatic, practical, Self-reliant, individualistic.

Work, life balance: Time away from work is as important as the career.

Two career families, latch key kids, and a killer lifestyle.

Not intimidated, reject rules, mistrust institutions.

Lead by competence.

Consistent feedback.

Generation Y / Millennial Generation

Traits

Hopeful, realistic, self-inventive, and individualistic.

Determined work ethic.

Rewrite the rules.

McNeil/Lehrer September 2006 poll

84% say their life is excellent or good.

(67%) believe immigrants strengthen American society; 47% of those ages 41-60 say immigrants strengthen society;

Top life goals are to be rich (81%) and famous (51%). Freshman in 1967 thought it was essential to "develop a meaningful philosophy of life" (85.8%) while just 41.9% thought it essential to "be very well off financially."

47% of young people favor gay marriage, 46% opposed; 64% over 25 oppose; 30% favor.

36% tattooed and 30% pierced in a place other than the ear lobe; 25% have dyed their hair a non-traditional color.

46% said sharing music or video files without paying was OK.

41% say they consumed alcohol; 31% smoked cigarettes and 9% took illegal drugs. 30% believe it is OK to drink a lot of alcohol; 41% believe it's OK to smoke marijuana.

Generation Y / Millennial Generation

The college graduation class of 2010 were born in 1988. To them:

John Lennon, John Belushi, Richard Burton, Ricky Nelson, Truman Capote, Lucille Ball, Gilda Radner, Billy Martin, Andy Gibb, and Secretariat have always been dead.

Afghanistan has always been a front page story.

The Soviet Union has never existed.

Text messaging is their email.

The U. S. has always been trying to put nuclear waste in Nevada.

George Foreman has always been a barbecue grill salesman.

In Conclusion

1. **Value intellectual capital.**
2. **Competitive compensation.**
3. **Constant recruitment.**
4. **Focus personnel selection on quality.**
5. **Train.**
6. **Retain retirees.**
7. **Adapt policies for generational needs.**