

My Document  
Drake

Storm outage - a symptom  
but what's the strategy?

TESTIMONY before PSC - 1/06/2004 - Dr. R. Drake

1. Why does Pacific Corp and Scottish Power (conveniently called Utah power) spend more money than all lobbyists combined every year with the Utah State Legislature? What favors are they trying to curry that ultimately appear to be adverse to Utah consumers of electrical power?
2. Is the Public Service Commission just going through the motions in carrying out its charge to "ensure safe, reliable, adequate and reasonably priced utility service?"
3. What standards have the Public Service Commission put in place to ensure reliable service?
4. What objective, independent evaluations have been conducted by the Public Service Commission to determine whether Pacific Corp and Scottish Power have met certain standards, or have they just believed that the Companies are giving them the real facts? Have they gone to any outside engineering experts to determine the facts? How many engineers, and other power company professionals, 50 yrs. and older, did the company terminate or phase out when Pacific Corps took over the company?
5. What percent of the company's total revenue is being put directly back into routine and preventive maintenance? When Portland Power displayed an absolute abysmal record of providing dependable electrical service in Portland and other areas of Oregon, the **Oregon Public Service Commission demanded** that the Company dedicate a specific percentage of the Company's total revenues to routine and preventive maintenance, along with other forms of infrastructure development and improvement. What percent did the Commission require the company to dedicate for the above stated purposes?
6. Why did the female CEO of Pacific Corp go on Utah Television, and, like an adolescent **blame** the Utah Consumer claiming that the Power Company cannot gain access to the trees that need to be trimmed, when in fact there are many individuals who have begged the company to come and trim their trees?

For example, William Van Cleaf, as he experienced 5 power outages last year (2003) specifically asked the line-man who came to his place at 2132 E. Lambourne Ave., if they would trim the huge elm trees that were impinging on the power lines. The answer he got was, "The Company doesn't do that anymore." Ron Madsen, who also lives on Lambourne Avenue, who experienced 5 outages last year (2003) was witness to many blue and white sparks coming from two tree branches touching a 7K-V-Line carrying high voltage to a transformer. He called the problem to the linemen's attention and they said, "the company doesn't do tree trimming anymore."

A company engineer personally told me they had essentially eliminated the budget for carrying out a task (trimming trees) essential to the success of any electrical grid. And yet a CEO of Pacific Corp has the temerity to excuse their conduct by blaming the consumer for a decision the Company consciously made to cut the tree-trimming budget.

7. When Mr. Eskelsen talks about there being 500 people working on this 12/25/03 outage what he ignores is that **meter readers and estimators are not the lineman necessary to restore power**. He essentially is saying that triage is very successful, but **they've terminated the bulk of the physicians and surgeons (skilled linemen) necessary to restore life and vitality to the stricken patient (electrical consumer)**.
8. When Mr. Eskelsen talks about an **automated system** what he seems not to understand is that **you cannot fix a broken line by pushing a button**. The numbers of qualified linemen employed by the company is abysmal.
9. The PSC needs to know what the maintenance budget, (percent and total dollars, adjusted for inflation) was before Pacific Corp took over. They need to look at the annual maintenance budget for 1998-99 and compare that budget with the Utah Power Budget just before Pacific Corps. took the reins of Utah Power. **(Point of information: It was after the 1998-99 budget that Scottish Power came on board and they did begin to address some of the maintenance problems of Pacific Corp, but they are in a game of catch-up that is frightening when one realizes the extent of deterioration that occurred under the aegis of Pacific Corp.)**
10. **Is the PSC going to allow this Company to run this power-grid into the ground just before they abandon the project, move elsewhere, while taking all of the revenues out of state? Why is the home office in Portland? Why are all the calls for help from Utah consumers routed to Portland?**
11. How well is the Company doing with regard to having **adequate Sub-Stations**; with regard to buying **quality, vs. inferior equipment**? What efforts are being made towards the laying of underground cable? What is being done about the **hardened copper lines that chemically and physically change when too much power is put through such a conduction system**? Is the company even addressing this problem?
12. Is Pacific Corps and Scottish Power much like the airline manufacturer who sells the State Legislature, the Governor's office, and the Public Service Commission an **aircraft, whose manual reads, "Flies beautifully in good weather, but if you encounter inclement conditions you may experience a catastrophic event?"**
13. Since most patients, who used to be hospitalized for treatment, are now being treated at home, with sophisticated electrically powered equipment, such as

ventilators, oxygen concentrators, and infusion pumps, what responsibility does the PSC and the State of Utah have to ensure a predictable, quality power supply?

14. With many employees working out of their homes, some with sophisticated electrical equipment, what costs are incurred by those employees when they cannot count on a predictable supply of electrical power?
15. **A final observation:** Pacific Corp and Scottish Power were very fortunate that thousands upon thousands of homes and businesses did not have ruptured water lines, which would have happened if the **temperatures had fallen to the minus 20s and 30s. The damage would have been catastrophic.**

I am expecting the Public Service Commission to hold Pacific Corp and Scottish Power accountable for a quality electrical grid. Too many years have gone with what appears to be a 3<sup>rd</sup> rate service, almost analogous to some 3<sup>rd</sup> world countries.

Most sincerely,  
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A handwritten signature in black ink, appearing to read "Richard E. Drake", is written over a horizontal line. The signature is fluid and cursive.

# FACT SHEET

## WHY POWER LINES FALL DOWN

Why do power lines fall down under snow and wind? Often not for the reasons given by the power company.

When a power line fails under snow, wind or ice, the problem is usually the conductor, connectors, conductor fastenings, crossarm or poles have become weak and have not been maintained. Except for the occasional house or large tree falling on them, power lines are designed and constructed to withstand snow, ice, tree branches and wind.

The main reason for copper and aluminum power lines to fail is that the wire has become annealed. (Annealing means to soften a metal by heating). All overhead wires are hard drawn wire (high strength). A wire that has been overloaded or has suffered a number of short circuits becomes annealed. An annealed wire has lower strength and stretches easily. It sags more. When a tree limb falls on an annealed wire, it has a greater chance of breaking. Annealed wires with excessive sag easily blow together and may burn down. Excessive conductor sag is also caused by improper installation or improper guying. Sooner or later these lines will short out and become annealed. The conductor sag on many lines owned by PacifiCorp exceed the "final sag" permitted under PacifiCorp's own engineering standards. ACSR (aluminum conductor steel reinforced) fails due to vibration caused by installing the wire with too much line tension. This problem is aggravated by cold weather. Vibration fractures the hard drawn aluminum conductor strands and forces the current to flow over the steel core wire(s). The steel core wire softens and the line falls down. ACSR lines also fail from insulator abrasion caused by not using or incorrectly installing line guards, armor rod, cushioning rubber pads or tubes between the wire and insulator. Again the aluminum strands are damaged and current is forced to flow through the steel core wire(s). The factory formed tie used by PacifiCorp are among the cheapest on the market and uses no cushion or other abrasion protection.

Another reason for lines to fall is that many older lines use old rosewood posts (insulator pins) to support insulators. With time these wood insulator pins become charred, eroded from leakage current, and break very easy. Wood insulator pins need to be replaced after a number of years. The current standard is to use a steel insulator pin. PacifiCorp has no program to find and replace damaged, charred, weak wood insulator pins.

Wires fall when weight is added to split, cracked or burned wood crossarms. Crossarms split and crack with age. The biggest cause of crossarm fires is wood insulator pins falling part way through the crossarm. This allows the insulator to rest on the crossarm increasing leakage current. The single skirt type of pin insulator used by Utah Power is very prone to cause crossarm fires when a wood insulator pin falls part way through a crossarm. Utah Power has no program to find and replace failed wood insulator pins. These failed pins are very common on Utah Power lines and are easy to spot. Another cause of crossarm fires is strain insulator with cracks in the porcelain under their steel caps. These cracks can develop from rough handling or cold temperatures. Crossarm fires caused by cracked insulators usually occurs in foggy or damp weather. Porcelain strain insulators should be tested before they are reused. PacifiCorp does not test them.

Lines come down when poles fail. Pole failures can be separated into three types: (1) Poles that lean or fall over fail due to soft, plastic ground conditions or improper guying; (2) Poles that break above the ground line (usually 2 to 20 feet up) usually splinter and have broken due to excessive line tension or high winds; (3) Poles that break at or slightly below ground usually have ground rot from neglect. One of the reasons so many PacifiCorp poles fall into this category is the company has no pole inspection or replacement program for its distribution lines.

## **Questions for Utah Power**

1. The existing rate base has money set aside for maintenance. How much of that money has been diverted to other areas other than maintenance?

## **Questions for the P.S.C.**

1. It appears rate payers payed for maintenance that was not done; now are they going to be charged to rebuild the system due to lack of that maintenance?

2. PacifiCorp's maintenance history, prompted the Oregon PUC years ago to require PacifiCorp to spend a percentage of revenue on maintenance. Why not follow their lead: they have the most experience in dealing with PacifiCorp's lack of proper maintenance?

3. While PacifiCorp serves 7 states, Utah Power has the majority of all PacifiCorp's customers, electric facilities, power generation and provides the majority of PacifiCorp's revenue. Why does the P.S.C. not require PacifiCorp's electric operations headquarters to reside in Salt Lake City, where it will be more accountable to Utah Powers customers and the P.S.C.?

## **Questions for Scottish Power**

Why are the headquarters for PacifiCorp's electric operations in Portland, Oregon where PacifiCorp only serves a small portion of the outskirts of northeast Portland and has fewer customers than Ogden, Utah? Most Portland, Oregon customers are served by Portland General Electric.

Why continue with short sighted and inept PacifiCorp, Portland based, management, when it has been a disaster for PacifiCorp stock holders, and a disaster for its customers?