





- The dispatcher usually fulfills three functions:
 - Overview of transmission and distribution functions
 - Short term ("real time") transactions
- Management of electric frequency by adjusting plant operations
- These three functions establish a "control area" -an area under the control of a dispatch center
 As a general rule, these are simple operations
- without significant interest in our context since most power supply decisions are significantly divorced from these functions

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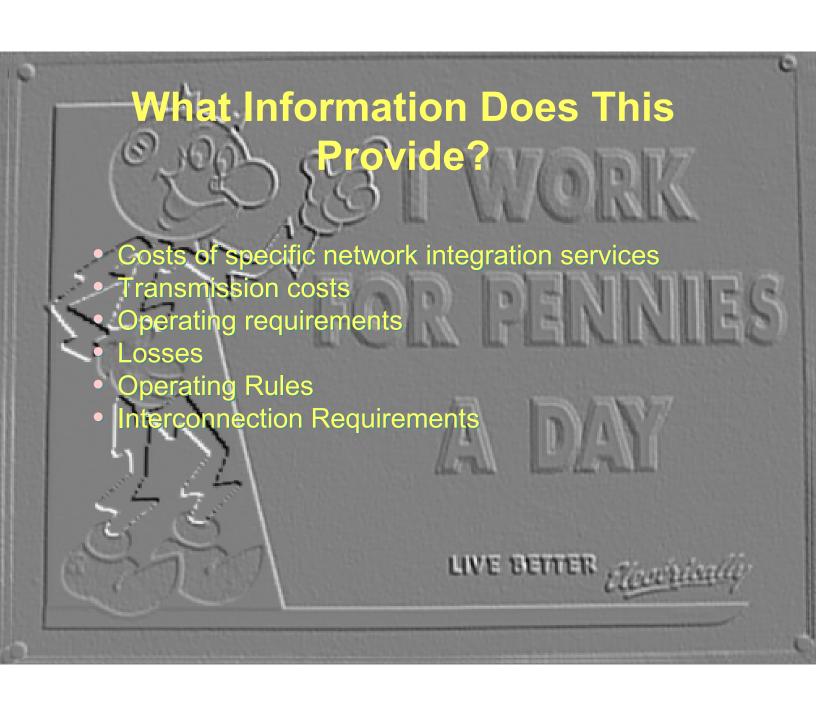


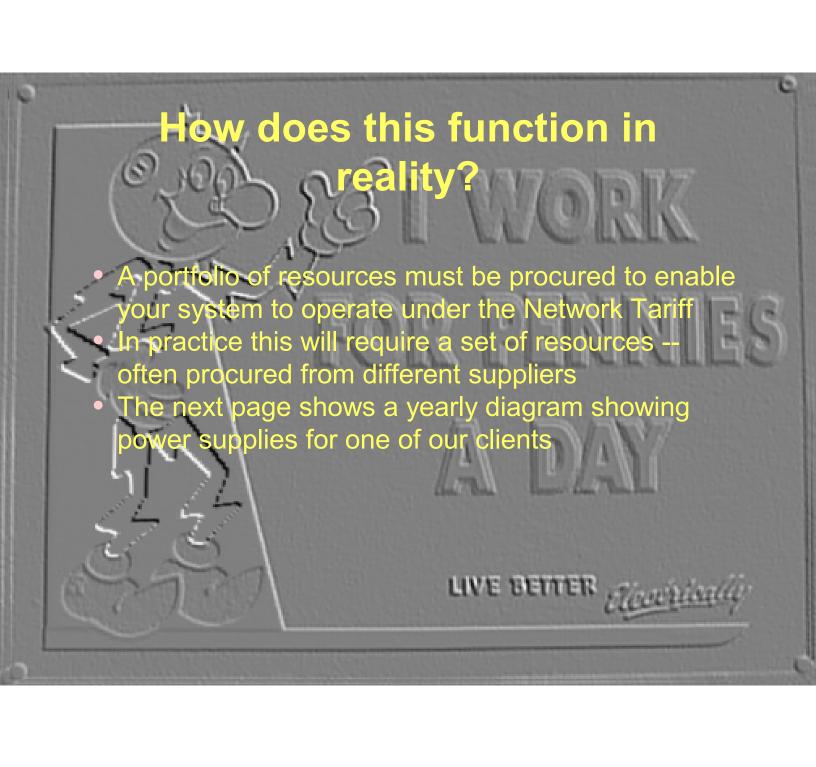
- Schedulers meet on a weekly basis to coordinate purchase and sales, make significant economic dispatch decisions, and to administer bulk power contracts
- Schedulers can administer our power supply
 without our having any contact with the dispatch
 center or the dispatchers
- To be exact, much of the drama of the power system is completely unrelated to the day to day economic issue concerned with the purchase and sale of electricity to meet our loads

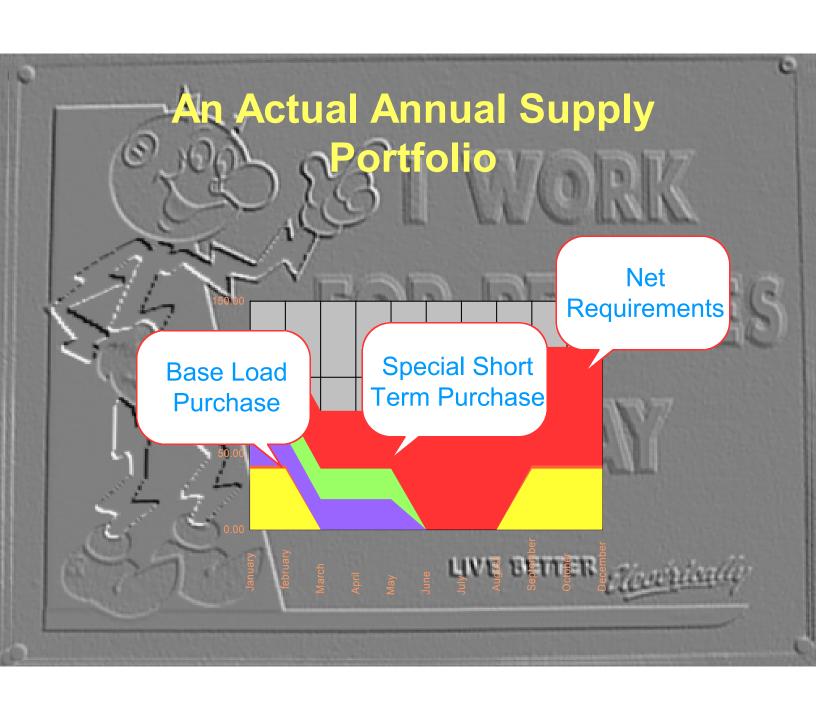


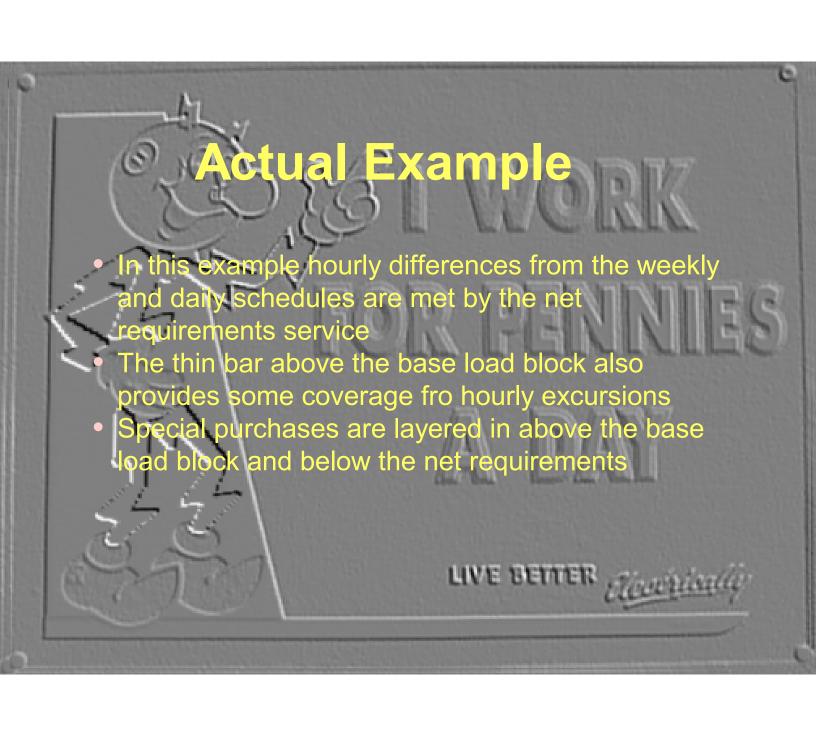
- The power supply is actually a series of contracts that provide specific solutions to operating problems
 - Base load power is rarely dispatched -- it represents blocks of "take or pay" resources
 - Peak load power operates at low load factor -- it must be dispatched to meet system peaks
 - Spinning reserve (and a variety of similar requirements under similar names) meets the reserve requirements that your load puts on the system
- Actual operational requirements are often clearly summarized under the serving utility's FERC comparability tariff

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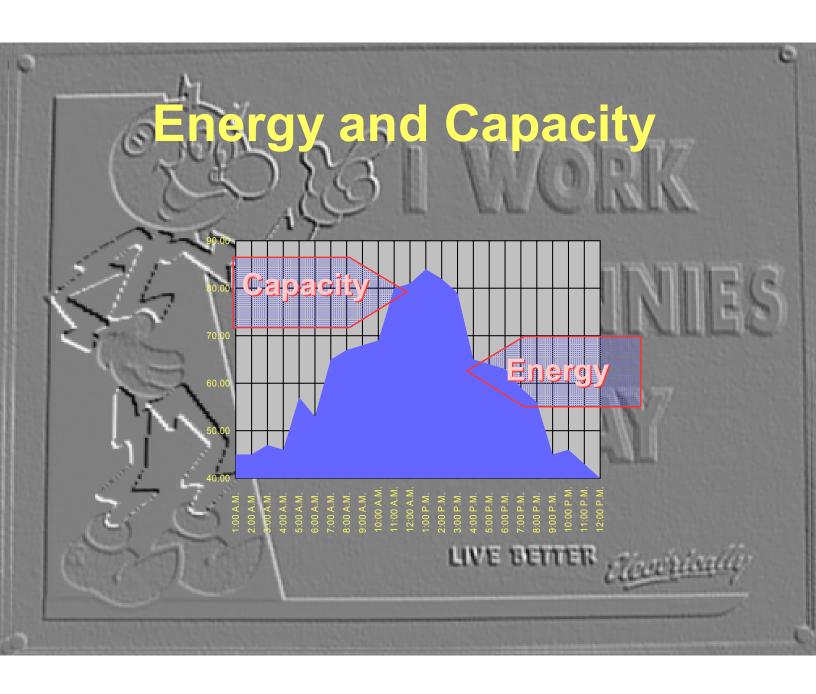


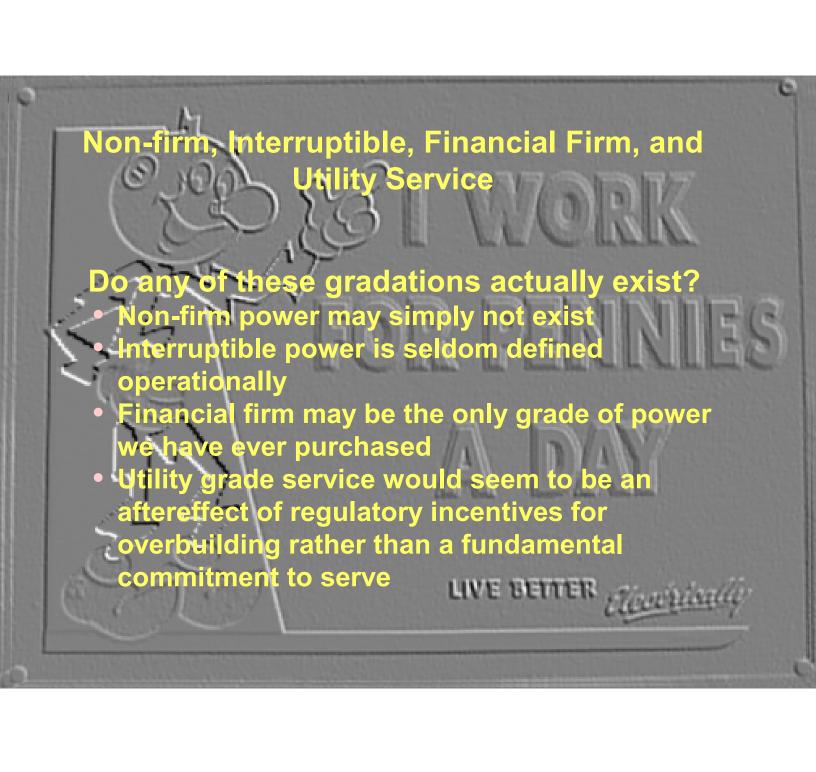


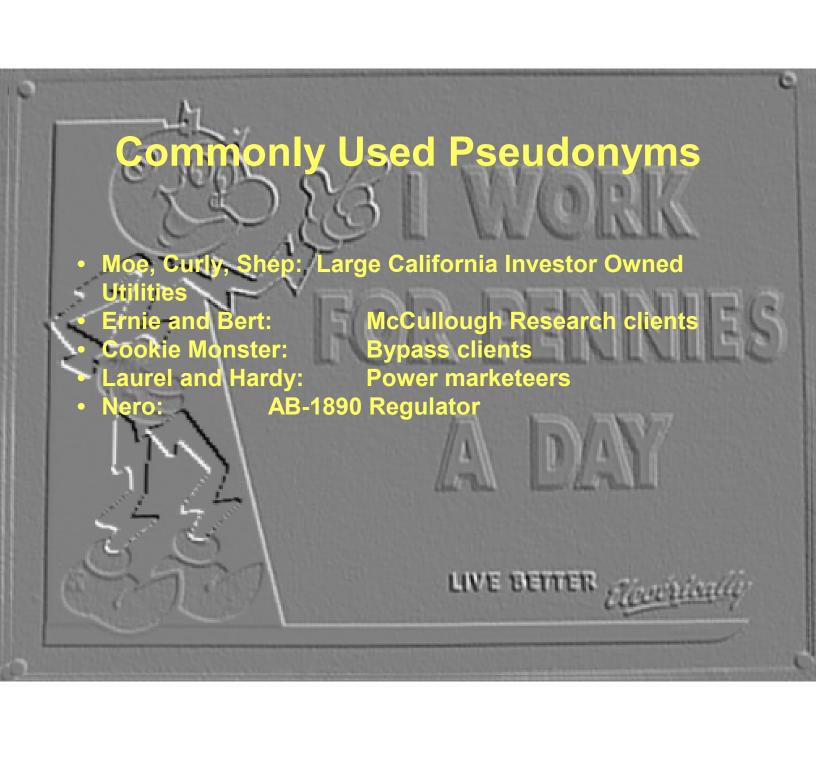


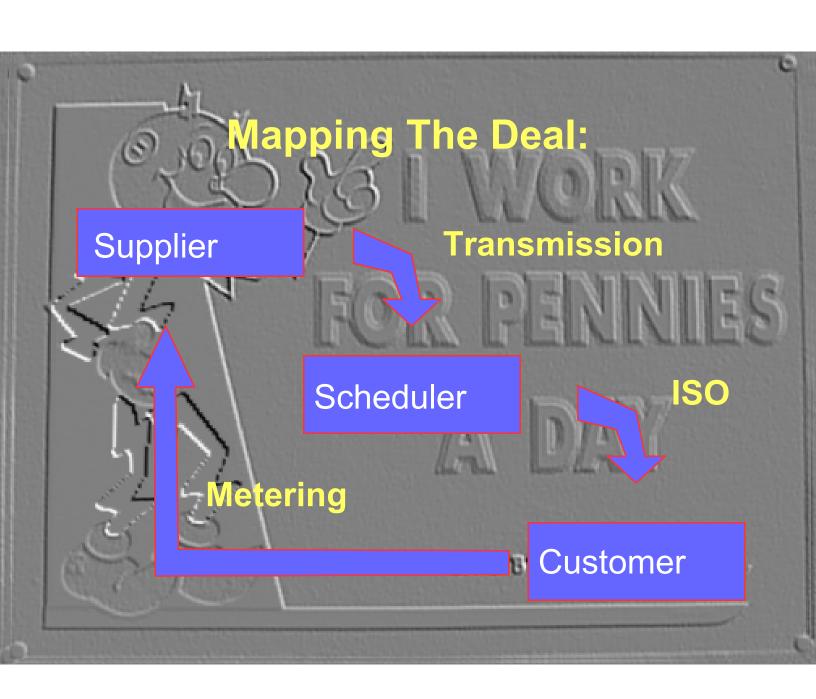


- Energy: Pure energy completely unscheduled -- like monthly bus pass in a slow an unreliable bus system
- Capacity: Pure capacity is the ability to schedule the bus
 - Mills: One tenth of a cent
- Megawattl Two large stores, 500 homes, one one hundredth of a steel mill
- Capacity Factor: the ratio of average energy to capacity
- Load Profiler A simple characterization of a load -- usually on a weekly or monthly basis
- Oh-Peak: Also known as High Load Hours (HLH) -- usually the 16 hours on Monday through Saturday
- Off-Peak: Also known as Low Load Hours -- all other hours including holidays

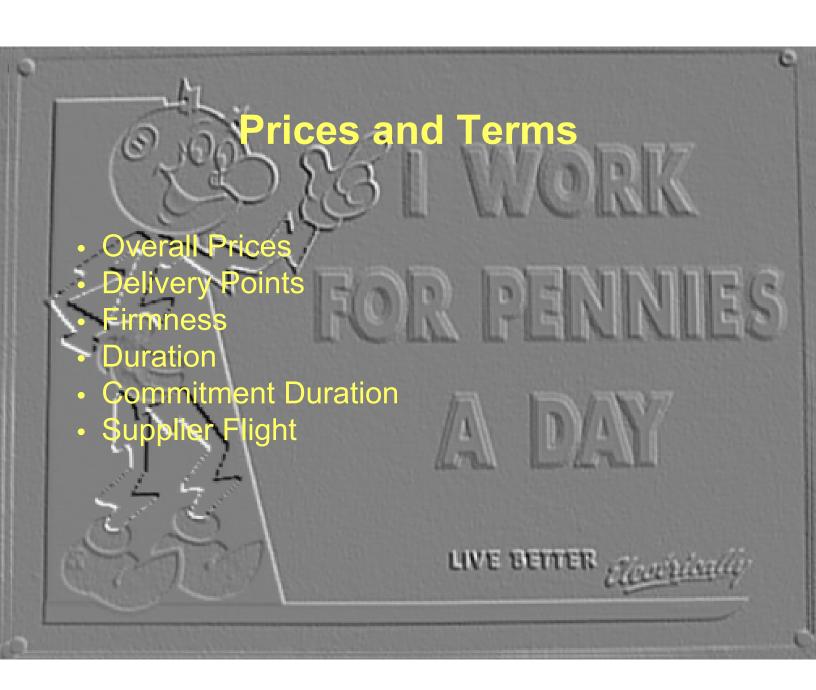


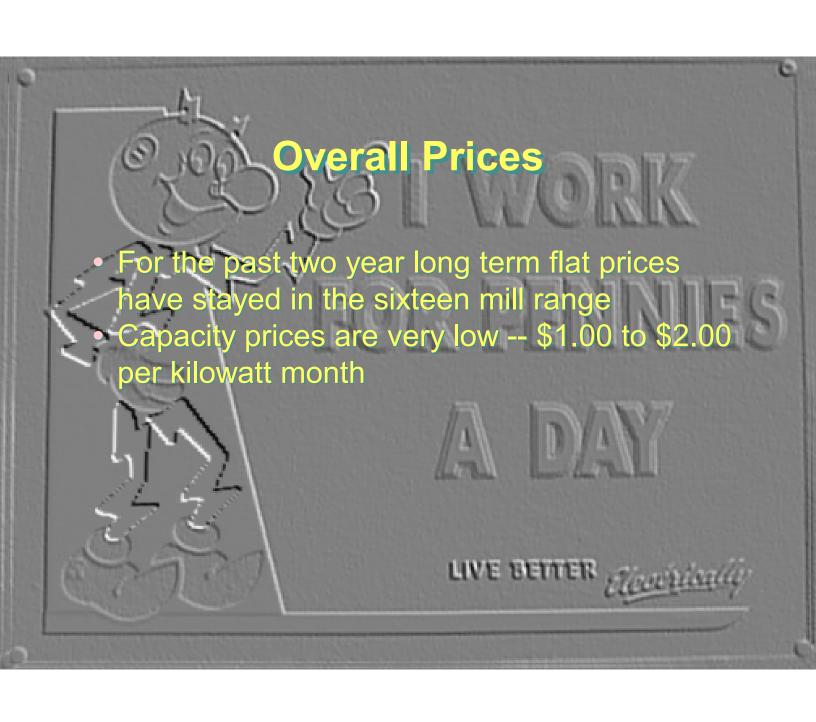


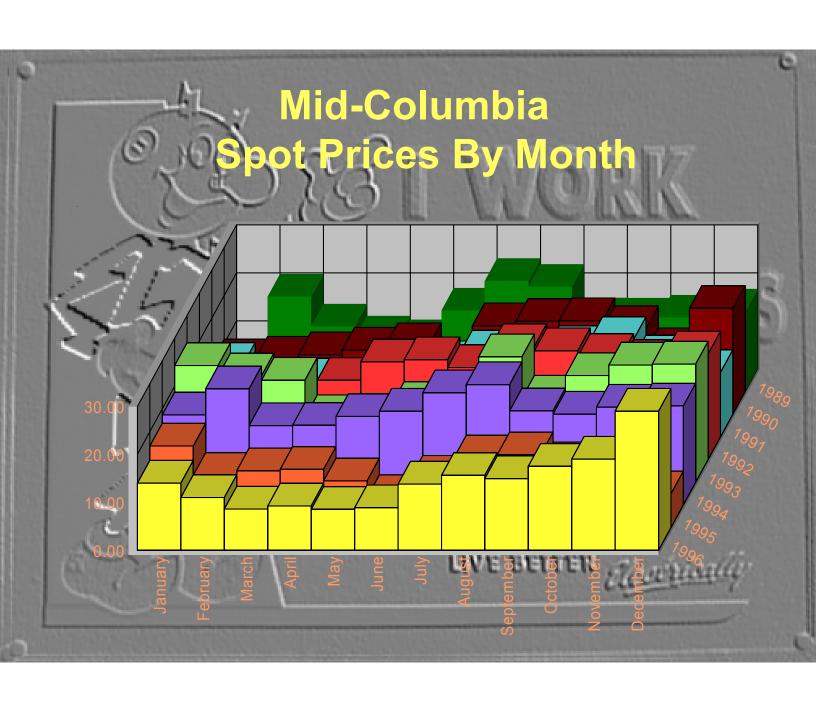


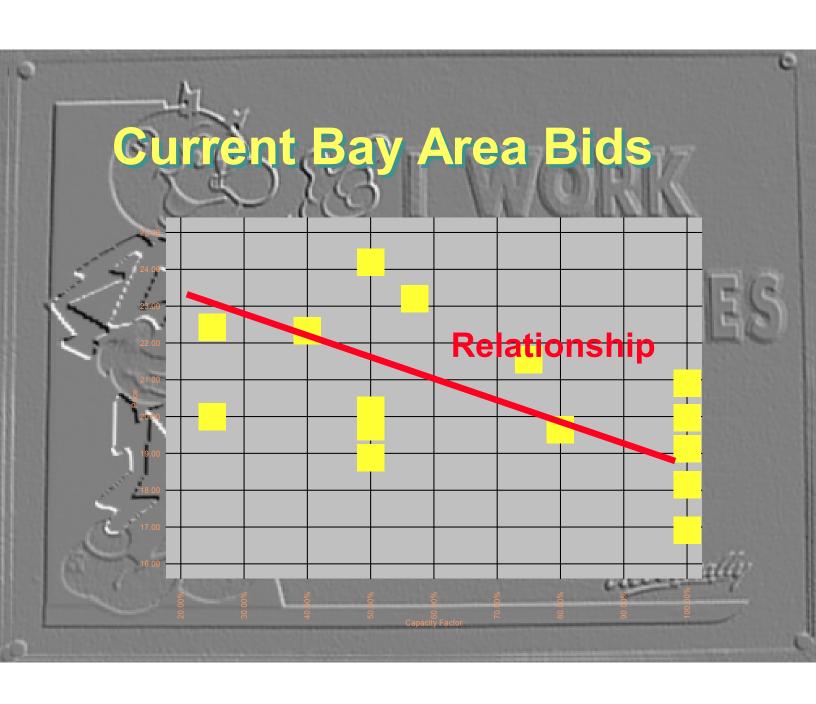


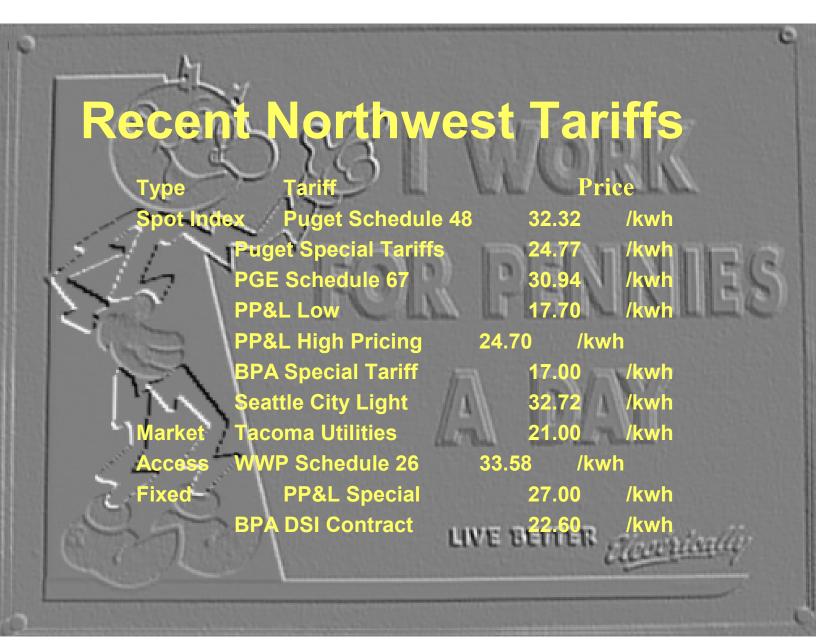




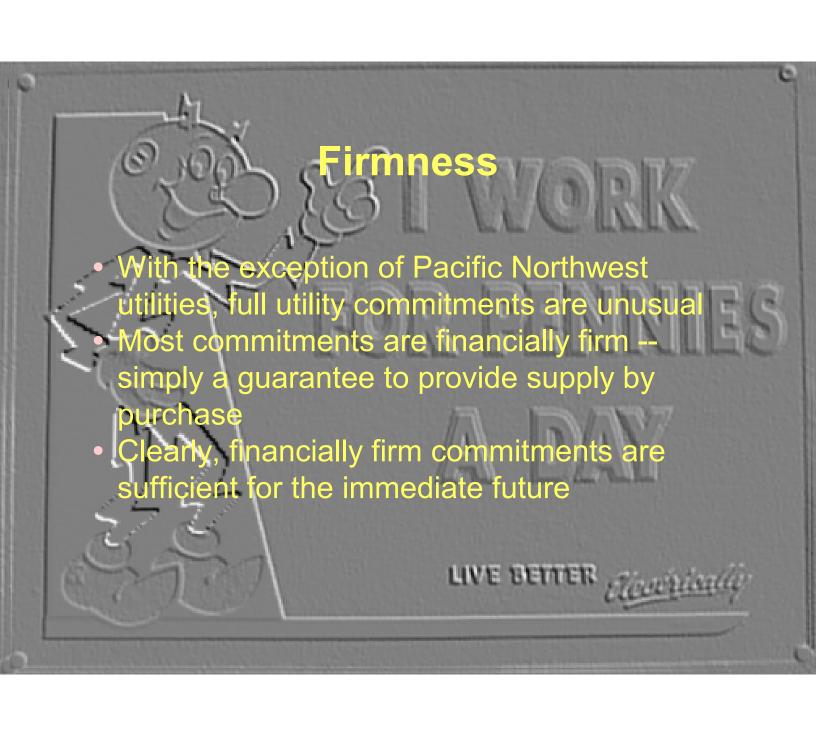


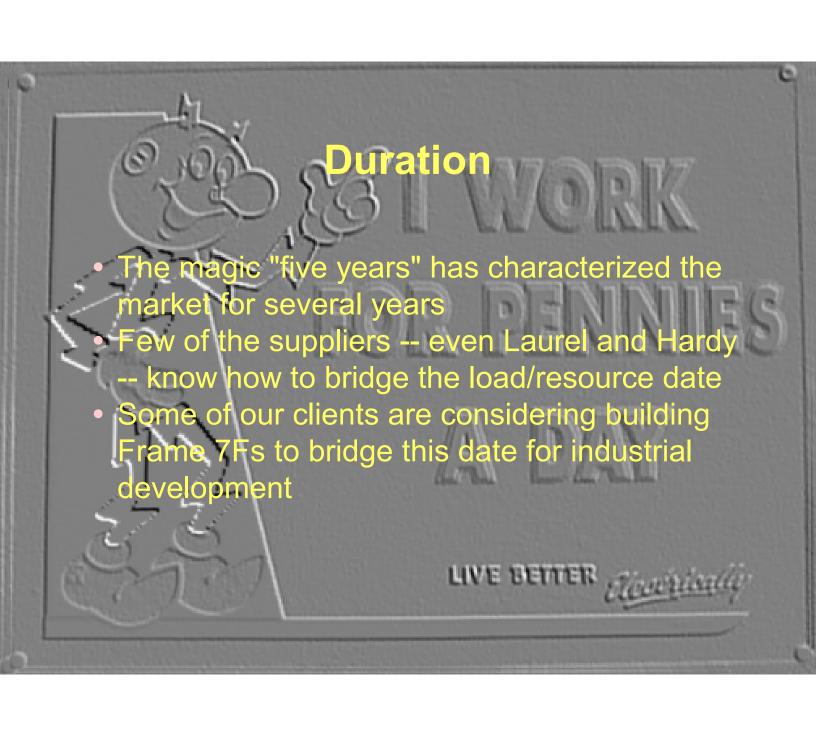






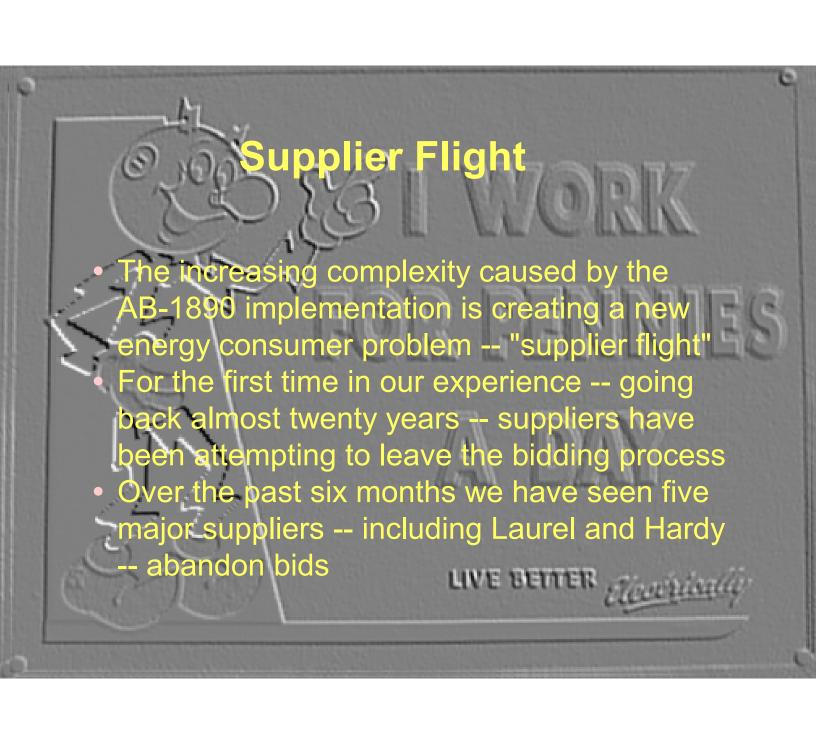


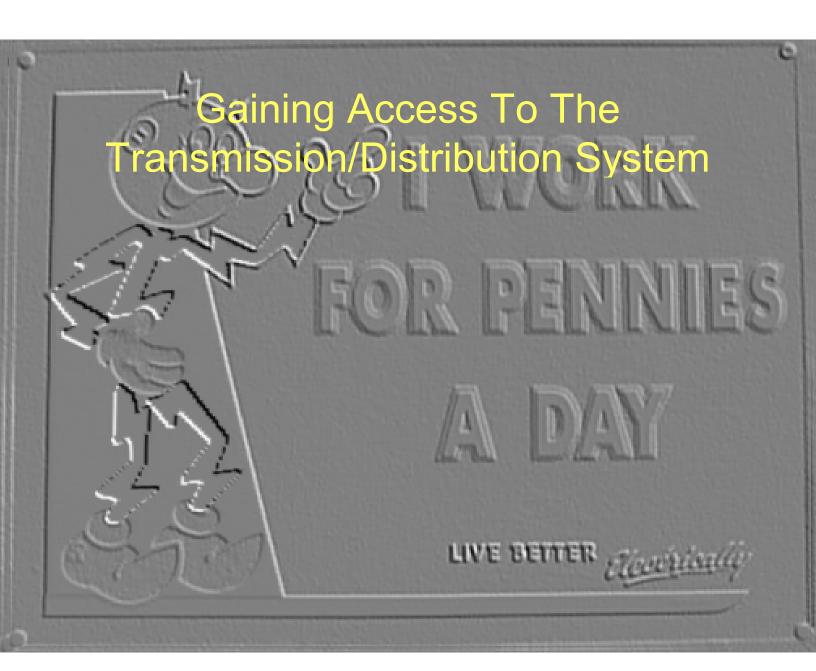


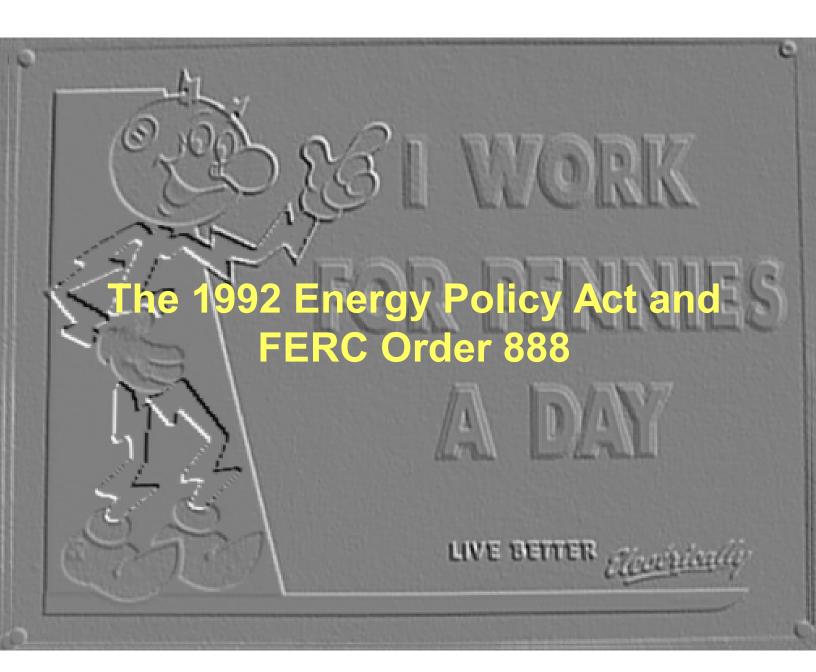


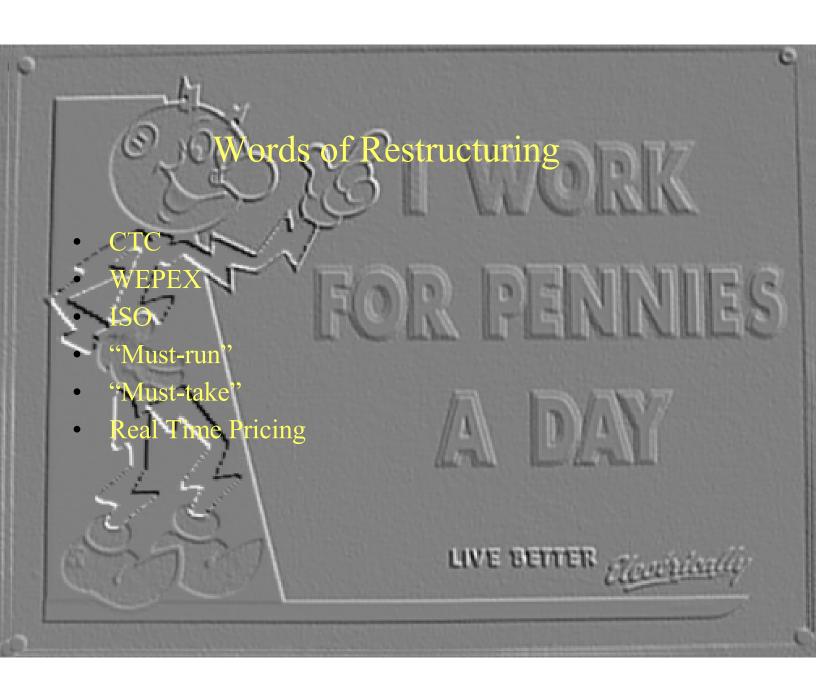


- Most suppliers are unable to commit (or provide, even after they commit) to bids for more than a few months
- Some of this is due to inexperience -- Laurel once assured us that the rapid evolution of the market made commitment impossible -- even though Laurel's bids really haven't changed over the past few years
- Given the increasing evolution of the business towards gas standards over electric -- contractual guarantees may be required for bid commitments

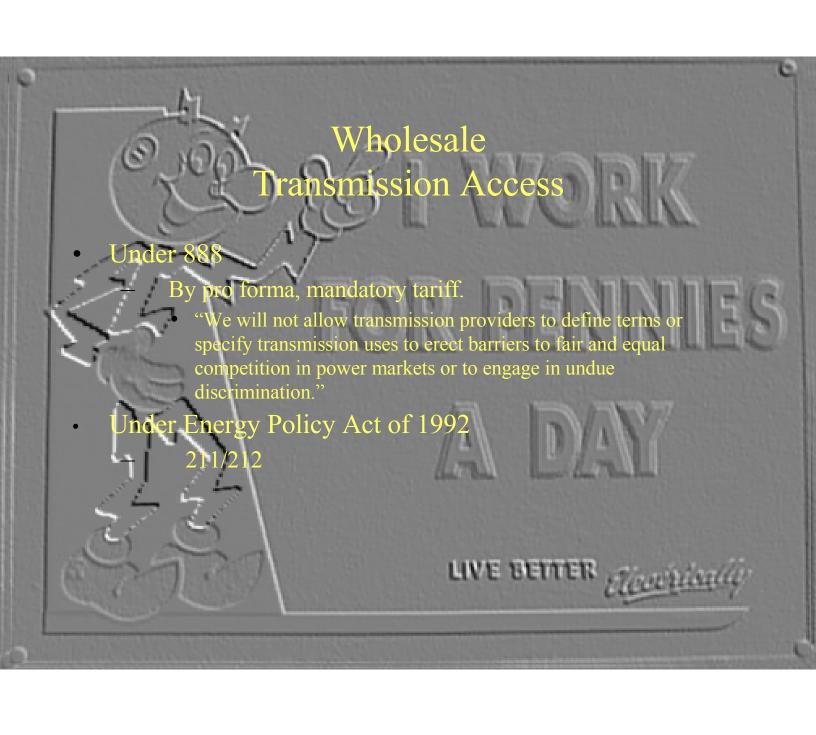


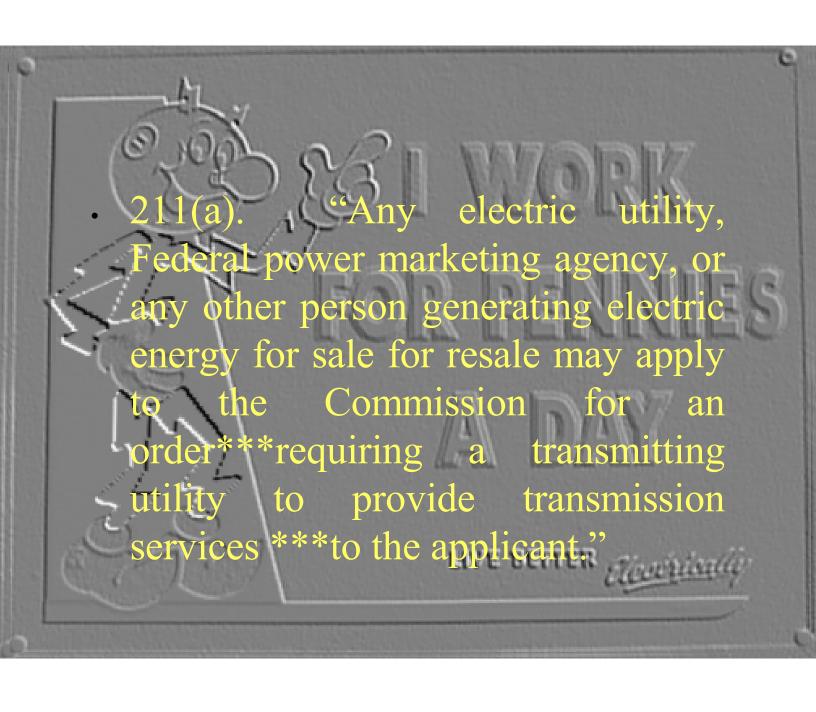










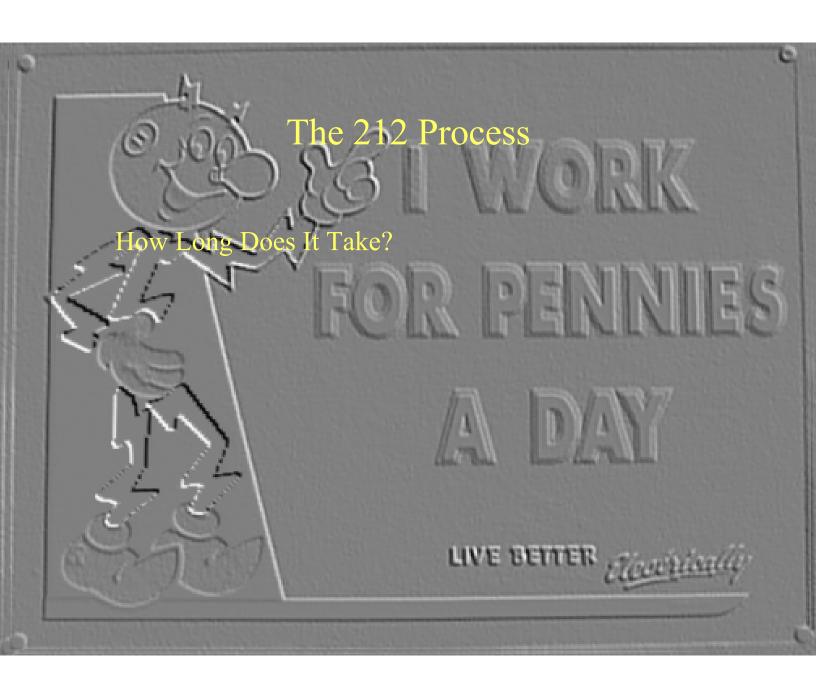


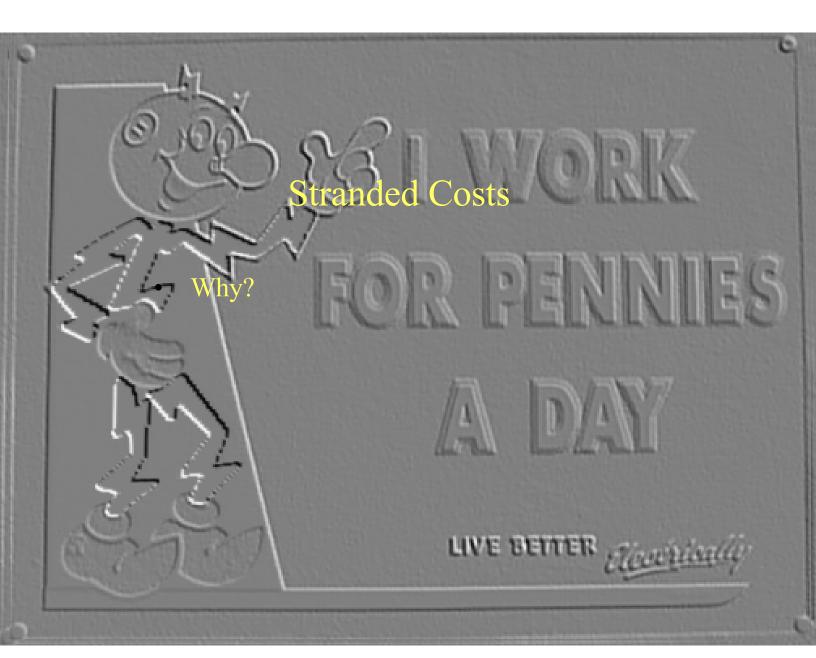
212(h). "No order***shall ***require transmission***(2) to***an entity if such ***energy would be sold to an ultimate consumer, unless:***(B) such entity***would utilize transmission or distribution facilities that it owns or controls to deliver all such ***energy to such ***consumer."

Palm Springs

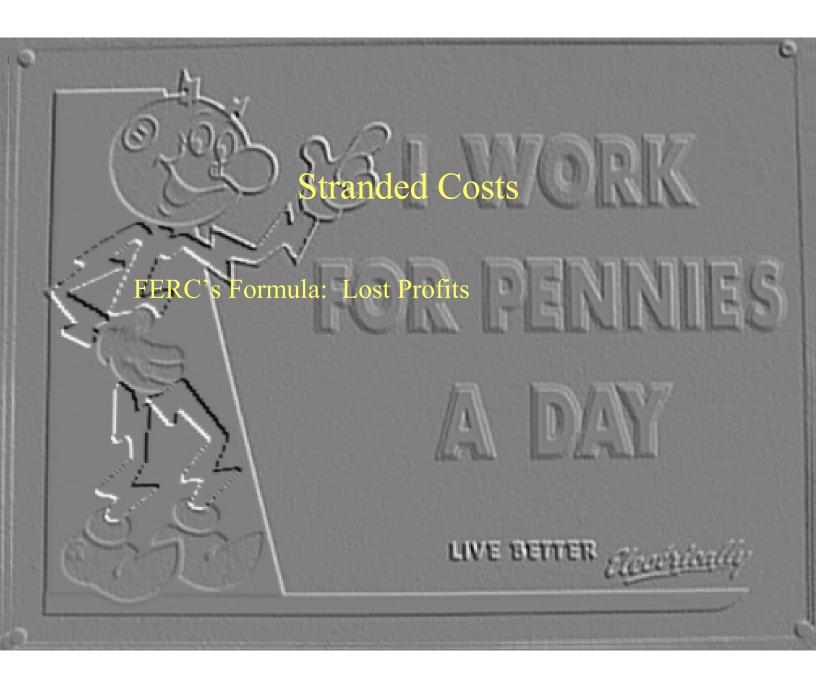
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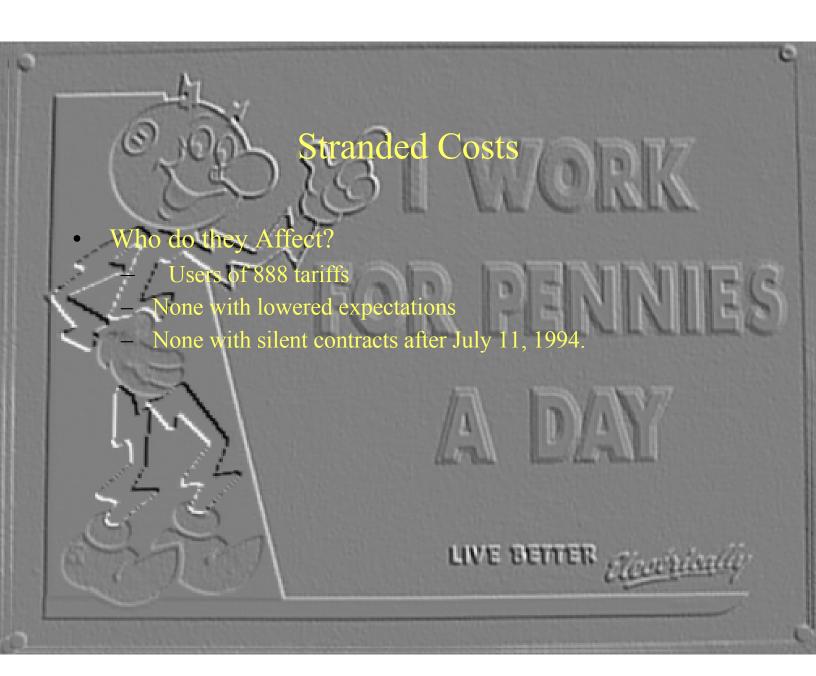
Cleveland Public Power

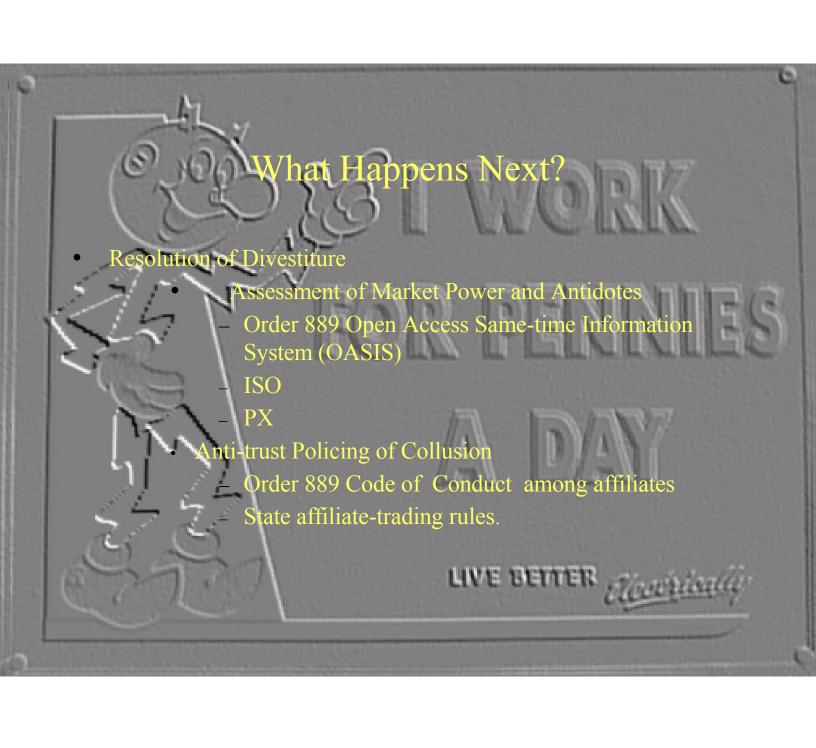


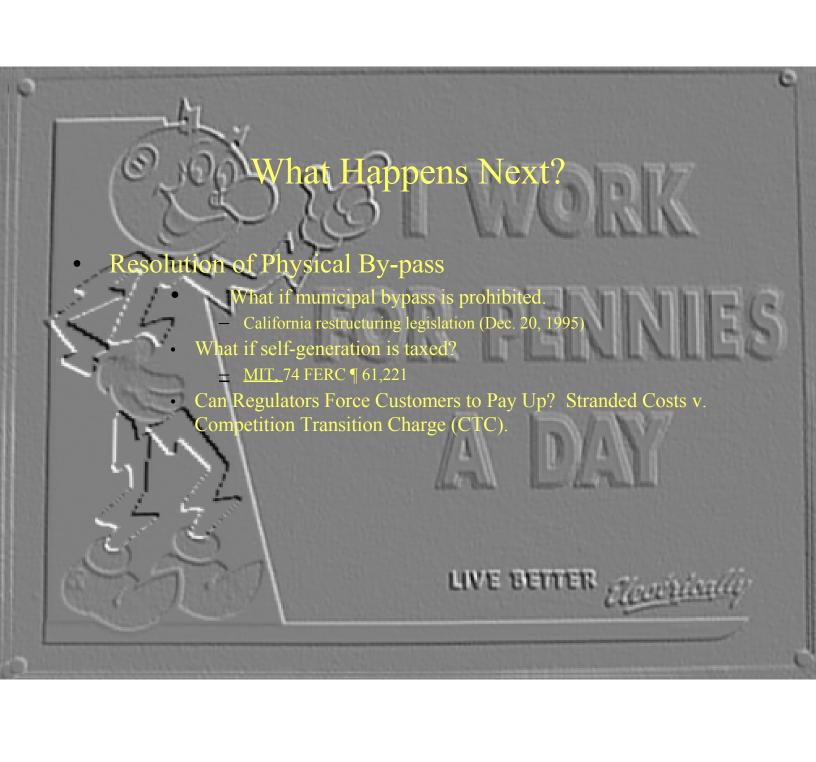


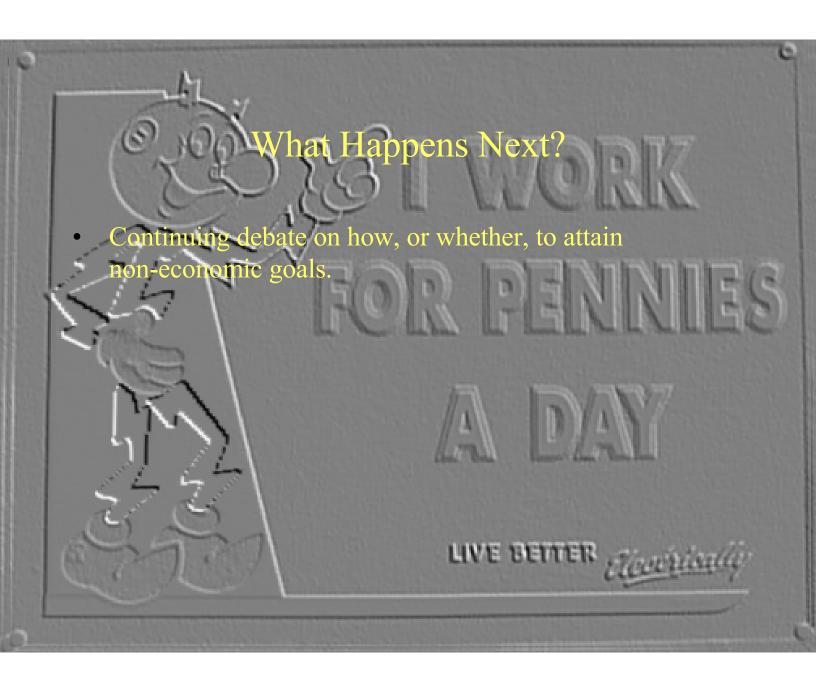
nolesale bulk power segment of the electric industry is undergoing a fundamental transformation from a monopolistic industry regulated on a cost of service basis to an open access, competitively priced industry.****We do not believe that utilities that made large capital expenditures or long-term contractual dommitments to buy power many years ago should now be held responsible for failing to -foresee such fundamental changes in the industry." MegaNOPR, 155! LETTER AND LONG

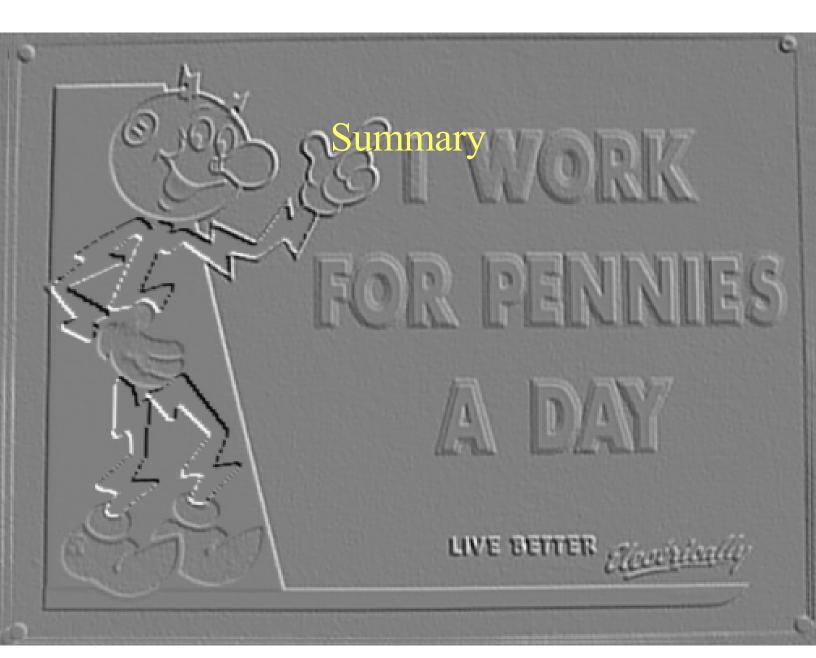


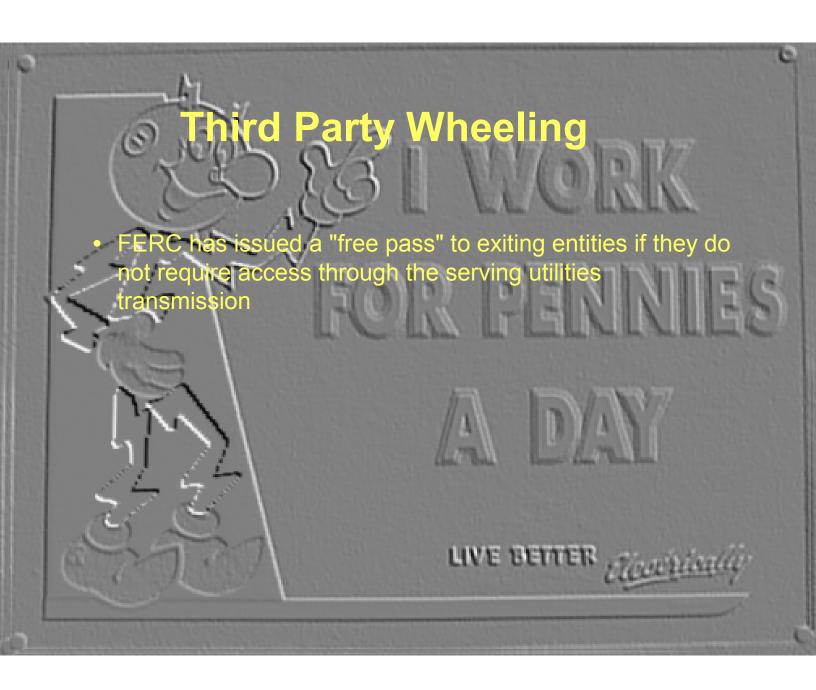


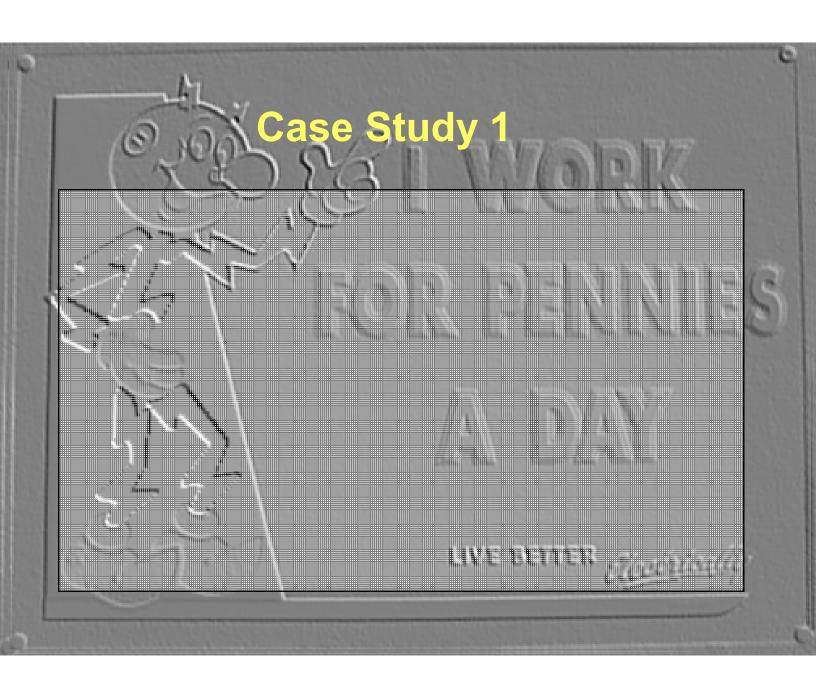














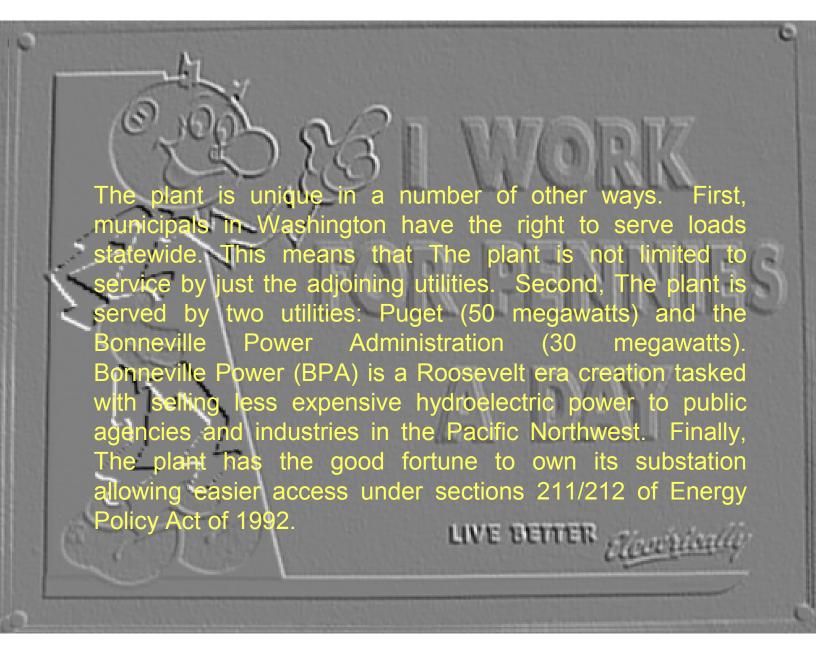
For the last eighty years the world class paper mill at Bellingham, Washington has possessed a number of critical strategic advantages. Fiber supply in the Pacific Northwest has always been a plus, but short sighted Federal forestry policies have now driven fiber costs to high levels. Power supplies have also been advantageous, but poor business decisions on the part of The plant's two power suppliers also have forced energy prices to higher and higher levels. With power costs higher than two million dollars per month, some active policy was required. Plant management responded by putting together an impressive electric bypass strategy.

LIVE BETTER Sicovilla

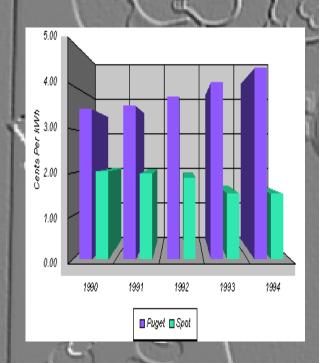
Unique Circumstances

The Bellingham mill has a number of unique advantages that can be marshaled to its advantage. First, the mill was in a state without strong service territories. Washington state has overlapping service territories in many places. In the case of Bellingham, a city close to the Canadian border, two different utilities have rights to serve. Puget Sound Power and Light is a traditional investor owned utility with average rates of approximately five cents per kilowatthour. The second utility is the Whatcom Public Utilities District. Whatcom was formed more than 40 years ago to serve Bellingham and its environs. It has served industrial customers, but has not chosen to expand its operations against its least cost effective competitor. Whatcom's overall rates are less than three cents per kilowatthour.

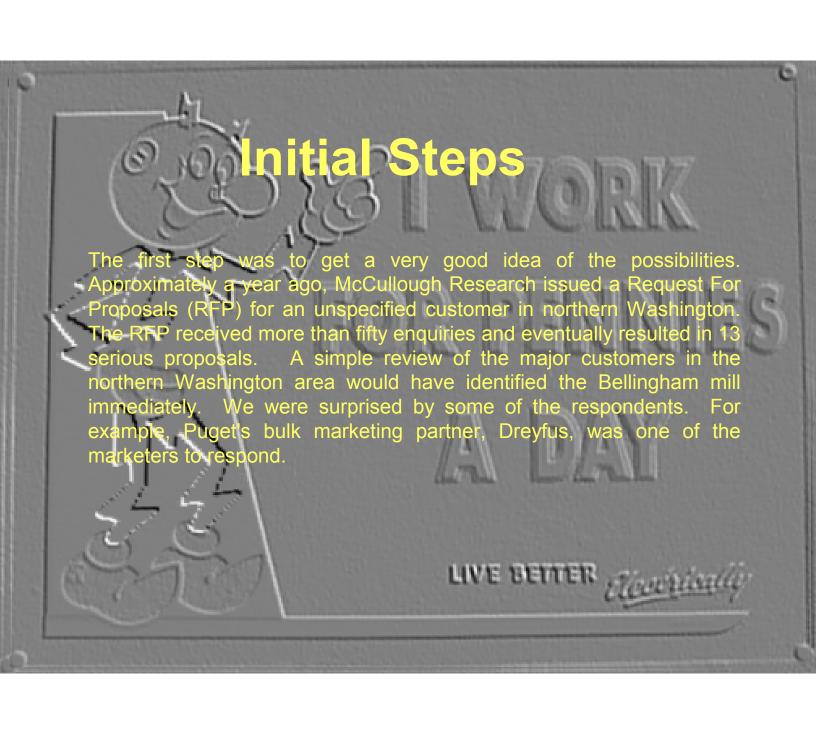
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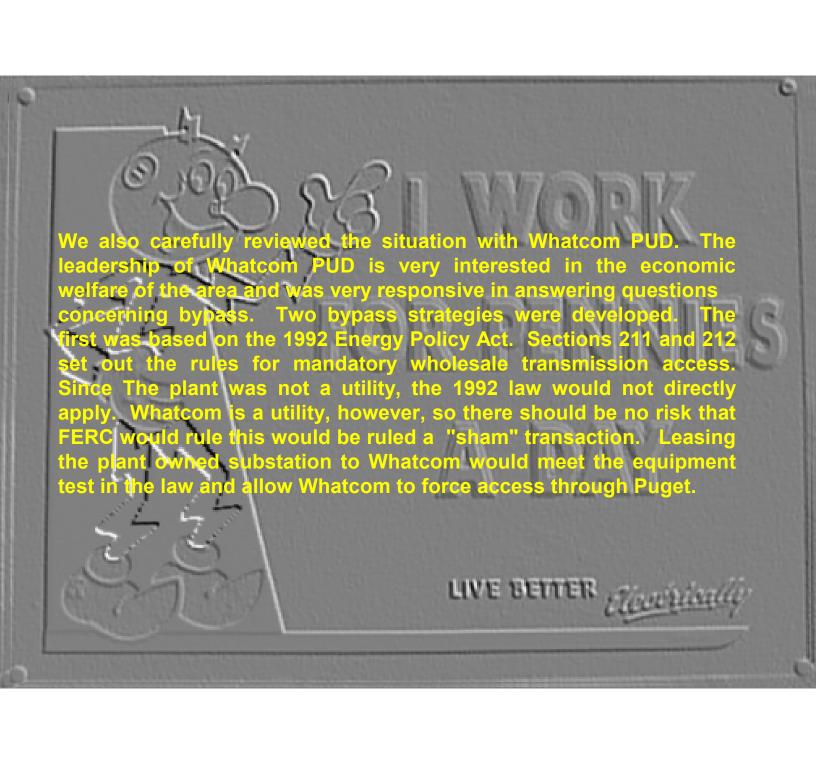


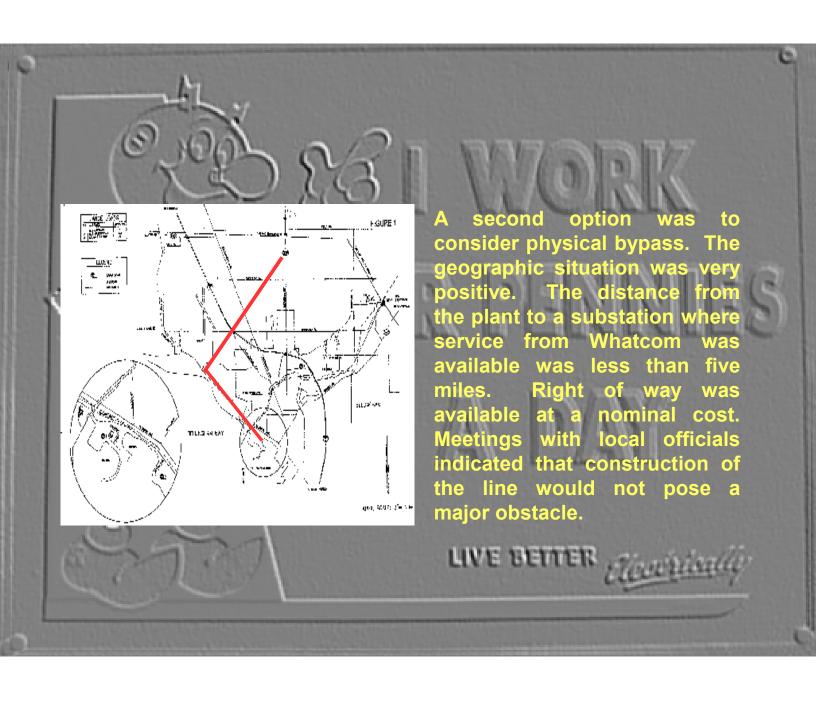
Rising Electric Costs



Both Puget and BPA have increasing costs onto their ratepayers in recent years. In BPA's case, ill-judged investments in the largest nuclear project in history (WPPSS 1 through 5) increas by twentyfold over the 1980s. BPA also was harnessed to a strong political agenda that even today expends massive dollar amounts in conservation, environmental measures, and renewable acquisition. Puget's problems were simpler. In the late 80s and early 90s, Puget purchased a number of PURPA projects in the five cents per kilowatthour range. Although Both Puget and BPA have announced rate freezes and reduction in response to current market pressures, neither utility really planned to address the size of the problem the Bellingham mill was facing.





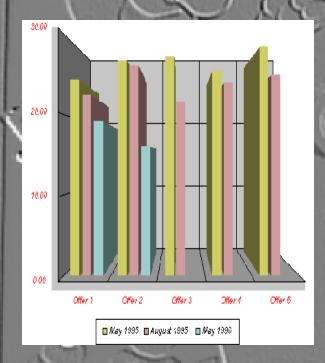


1992 EPAct 211/212 Access

In spite of the clear advantages of a 211/212 strategy, the decision was made to pursue both alternatives. The primary reason was a concern over the timeliness of FERC's response to the 211/212 request. Under the 1992 law, Whatcom would first make a request to Puget. After Puget had rejected (or more likely, ignored) the request, Whatcom could approach FERC to iorce access. With the Mega-NOPR still under consideration at FERC, Whatcom and The plant were concerned that Puget would be able to cause substantial delays. Physical bypass was simpler. The time line for physical bypass was predictable and did not expose the parties to extended litigation. Another concern was the issue of exit fees. Puget asked for exit fees in the decision of one of its wholesale customers seeking alternative supplies. Puget's proposed exit fees appeared artificial and inconsistent with simultaneous filings in other arenas, but debating such issues in front of FERC could easily push the effective bypass date past the physical completion of a transmission line.

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Power Supply Options



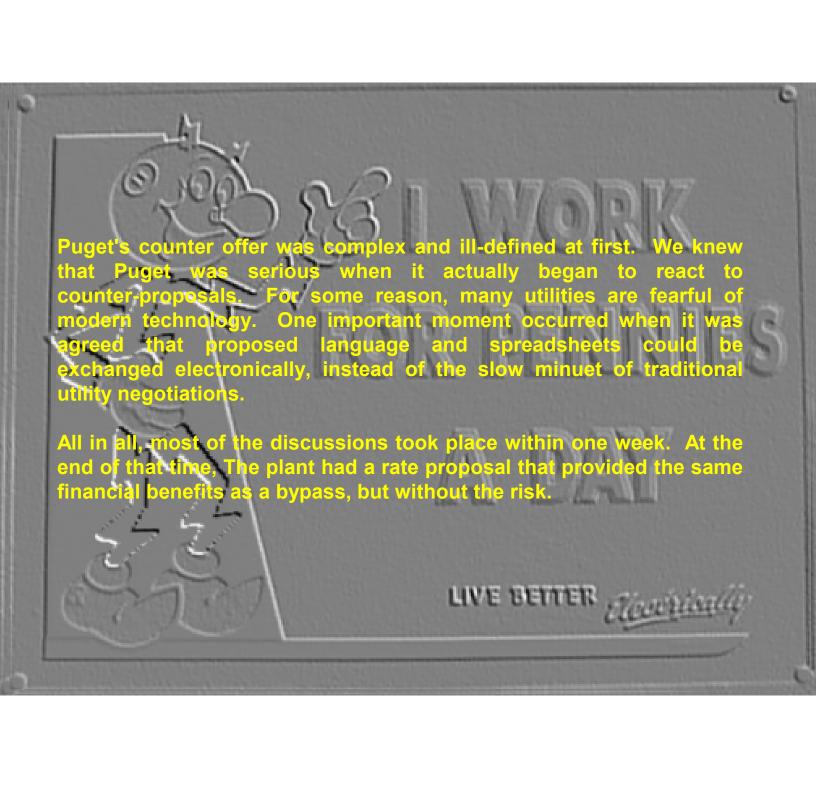
Response to the initial RFP was very gratifying. With the general decline in bulk power prices over the past year, many participants elected to "sweeten" their bids. The original responses were less than two and one half cents per kilowatthour. Final fixed price options were as low as one and one half cents per kilowatthour.

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The Grizzly Wakes Up

Puget's response to our preparations had been very quiet. Puget representatives sat through several presentations to local officials and the Whatcom PUD board. Meetings between the plant and Puget staff tended to be passive and procedural. It was expected that Puget would respond violently to the 211/212 request, but, with that exception, we had begun to believe that Puget was so enmeshed in its merger preparations that the exit of their second largest customer might take place without their notice. On the week when the approval of the power supplier was placed on the Whatcom board agenda, Puger finally, began to realize that the bypass was a serious possibility. On Monday of that week the Puget negotiating team was replaced. For the first time, an officer was included in Puget's negotiating team with the power to actually make decisions.

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Virtual Bypass

The final agreement provided for a spot indexed price. Puget had argued for indexing at the California Oregon (COB) border. With a basis difference between COB and the Pacific Northwest network (erroneously called "Mid-Columbia" by many) at a mill, this difference was a major pricing issue. It was finally agreed to adjust the indexing location back to an appropriate location.

Both parties agreed on a five-year duration. With bulk power prices falling precipitously and new gas fired technology promising lower marginal costs in the future, a twenty-year contract simply is not appropriate for most industry. Although utility planners are usually focused on twenty years, the average industrial facility in the United States is only 17 years old. Given Bellingham's age, a short horizon seemed appropriate.

LIVE BETTER Electrica

The Last Act

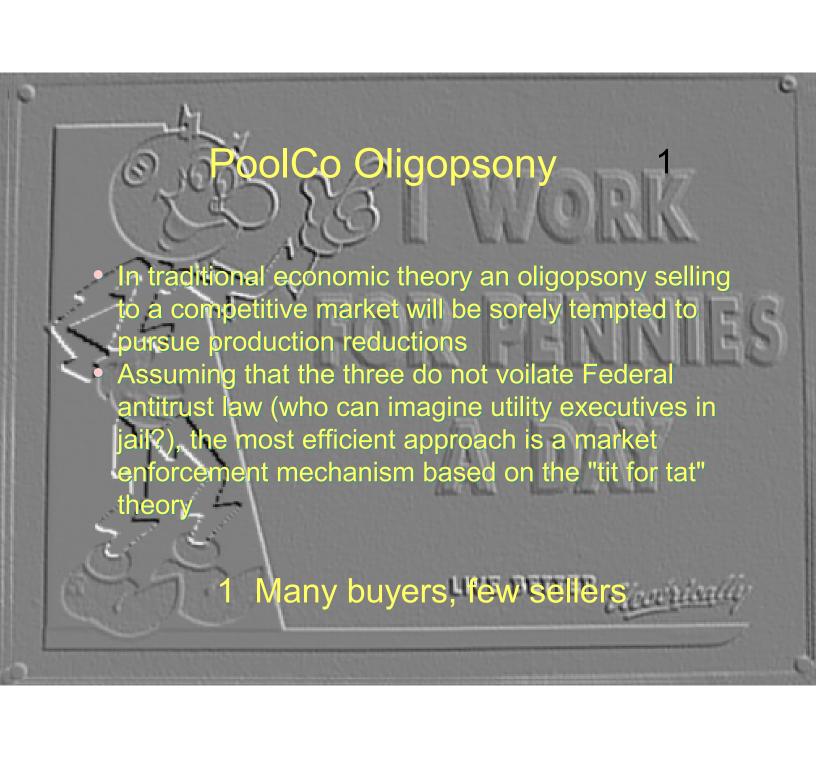
Puget carried the new contract through regulatory approval by June 7—La record for most regulatory approvals. One key to acceptance was our detailed preparation of the bypass alternative. The plant helped gain approval by continuing our preparation for bypass throughout the regulatory process. If the Washington Utilities and Transportation Commission had blocked the settlement, The plant and Whatcom were prepared to continue with bypass without the loss of a single day. Puget has subsequently offered the same model (although at a substantially higher rate) to the rest of its major industrial customers as part of settlement of their merger intervention.

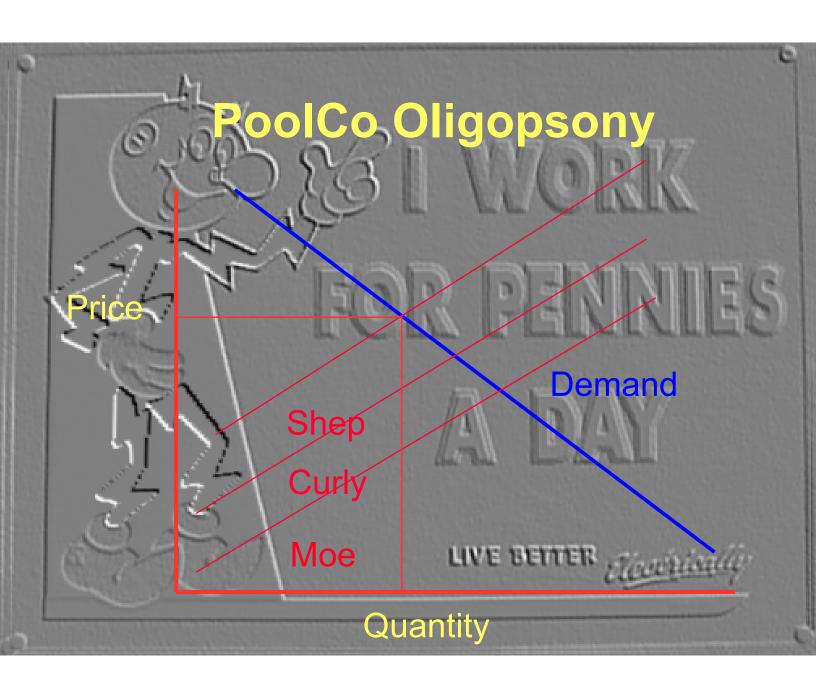


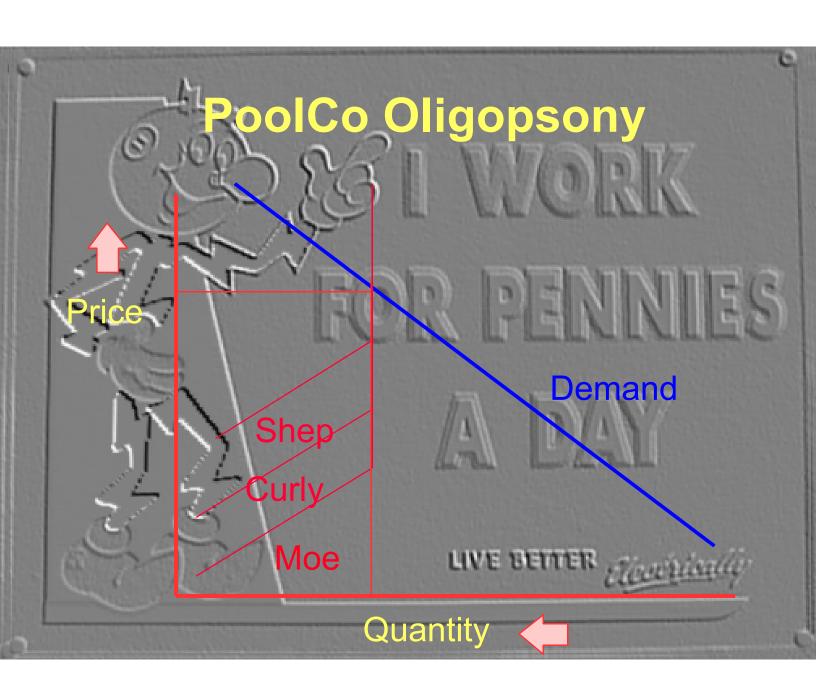
- Experience with other "poolco" style administered markets is that they are volatile and often unfair
- The problem isn't with the theoreticians who set them up -- it is with the real people who have to operate against them
- As currently constituted, California's poolco should devolve into a classic oligopsony model -- three sellers and many buyers
- traditional economic theory indicates that the sellers
 should win -- at the cost of uncertainty if they do not collude

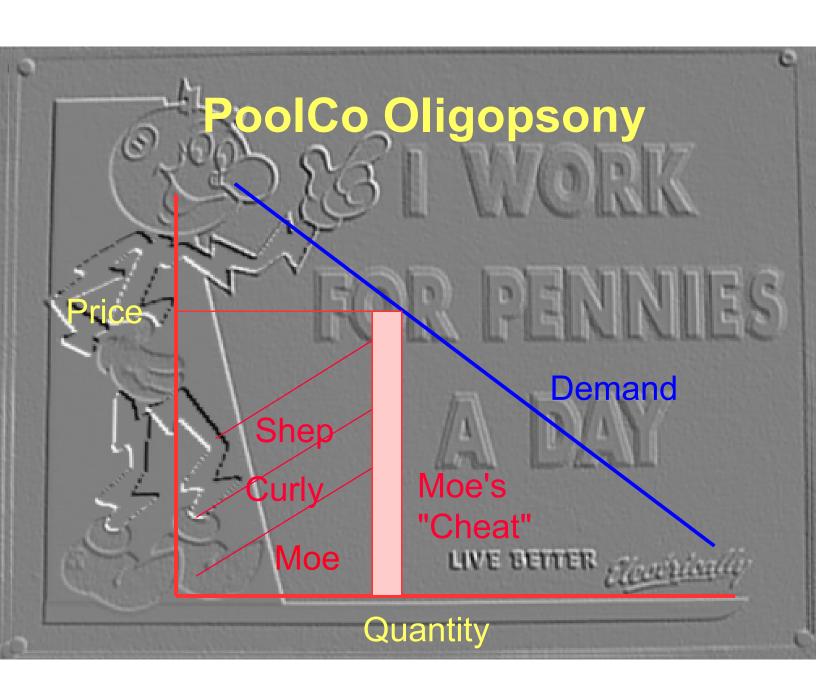
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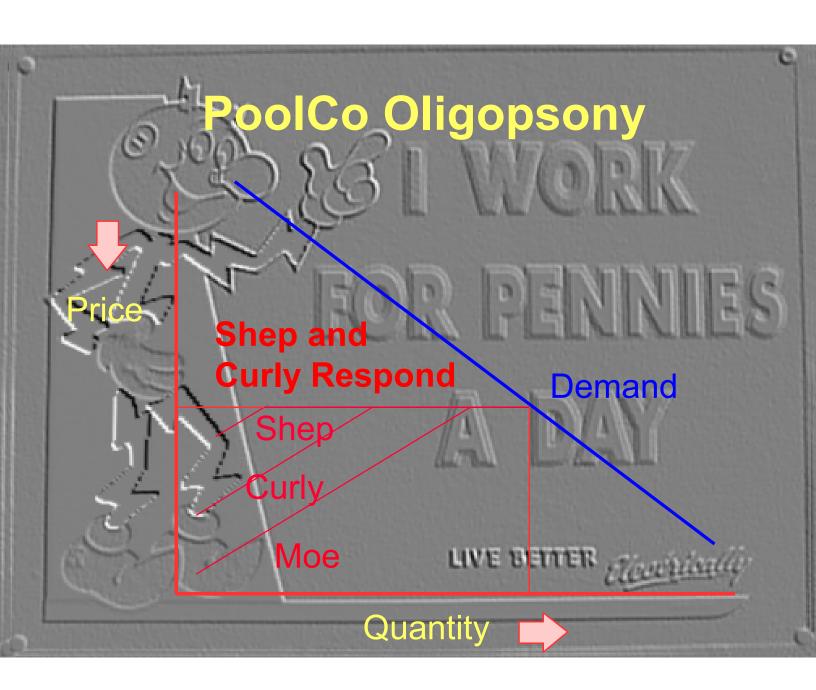


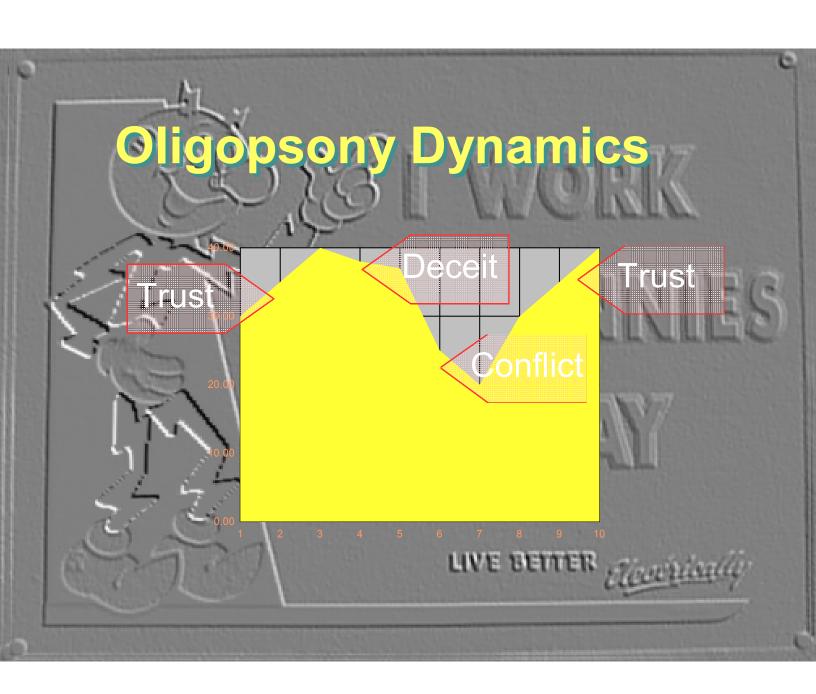


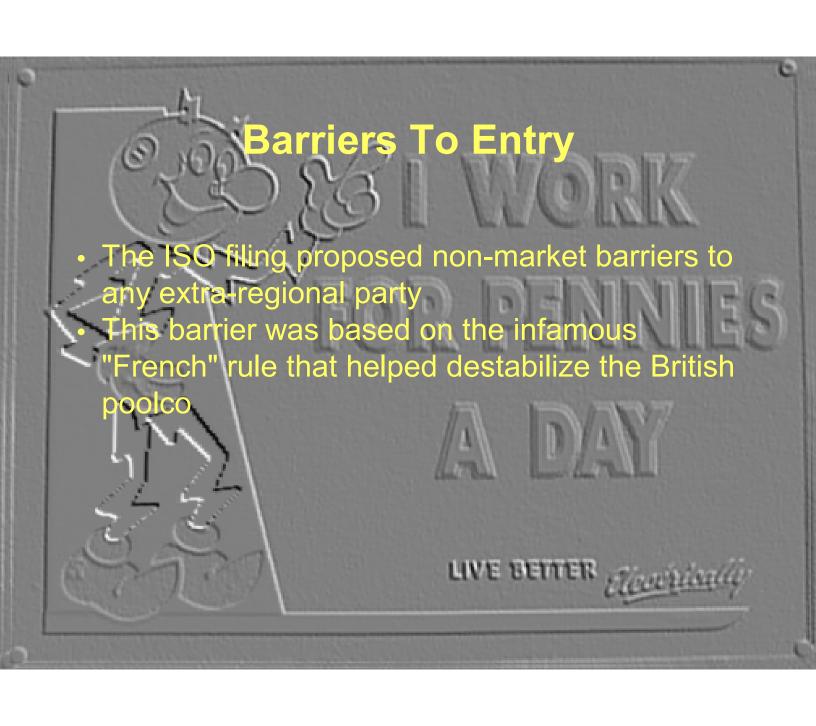














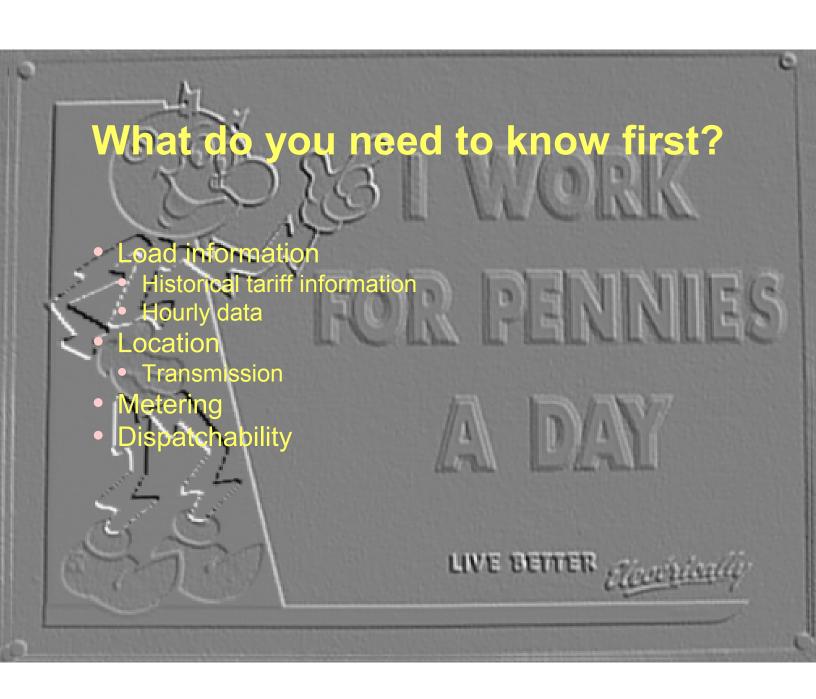


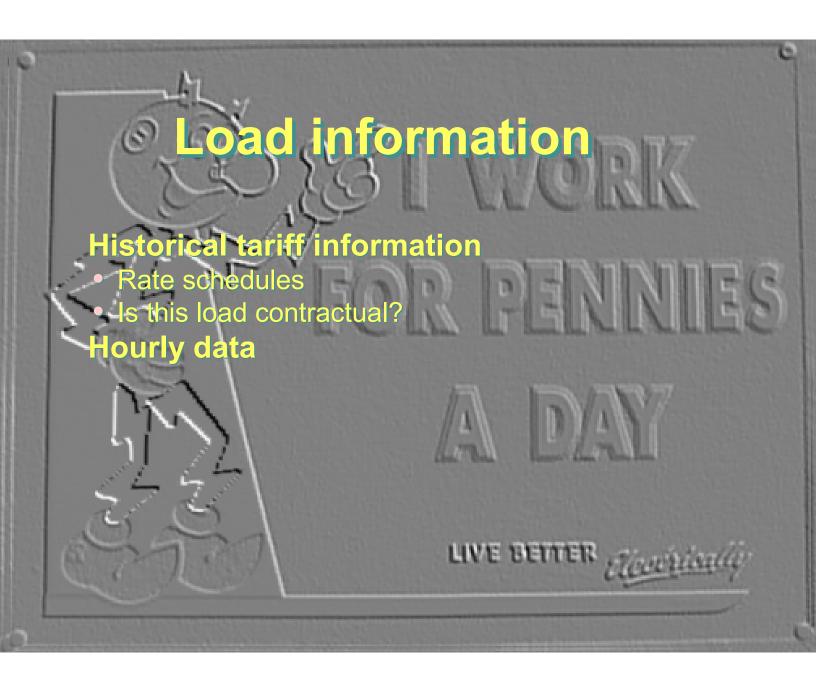


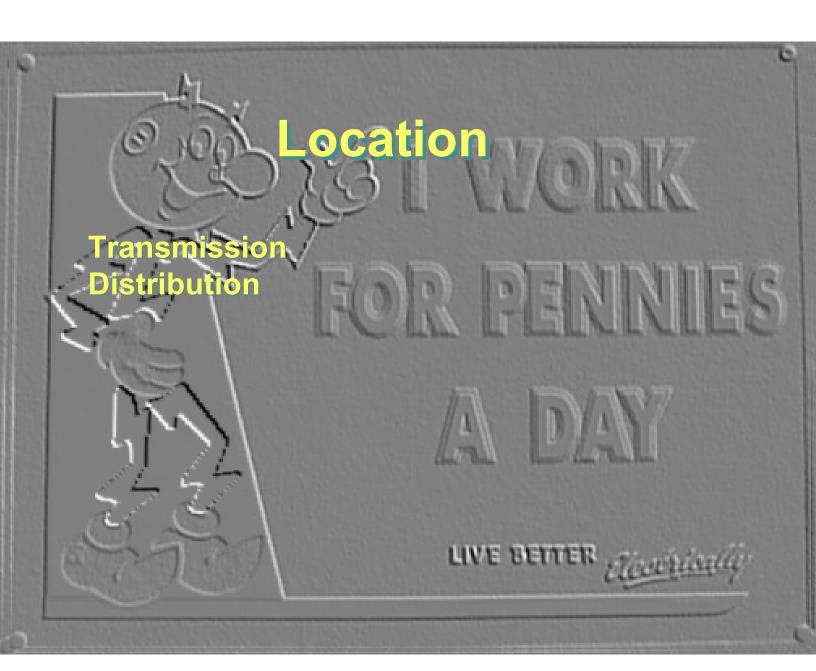
- /larriage
 - Eas<mark>ilt ad</mark>ministered
 - Cost effective
 - Requires high confidence in the marraige partner
- asual Dating
 Short term commitments create competition but lack
 - security

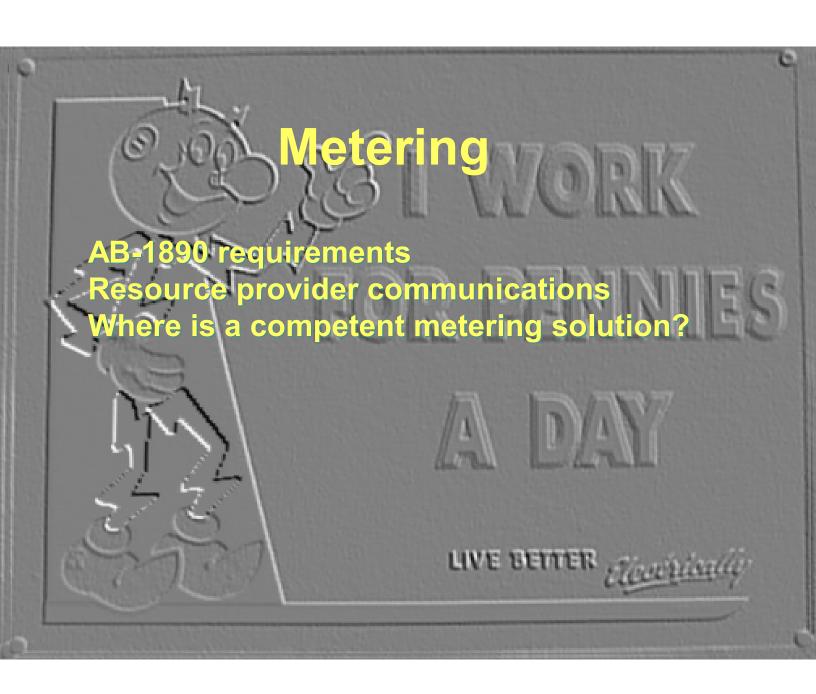
 California's complex implementation may not provide sufficient incentive to stay the course
- Serious promiscuity
 - Pools allow internal competition
 - Mulitple suppliers police each other LIVE BETTER decertion

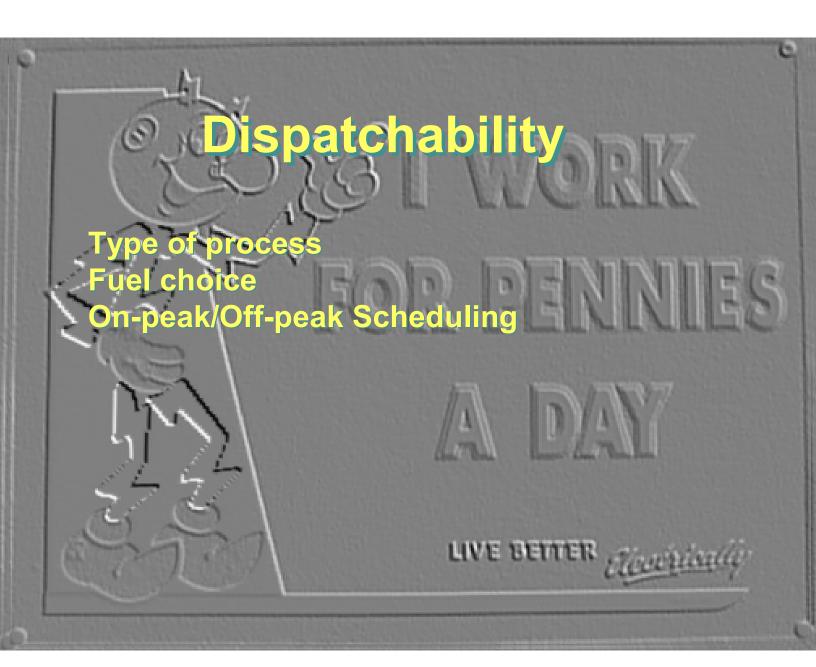


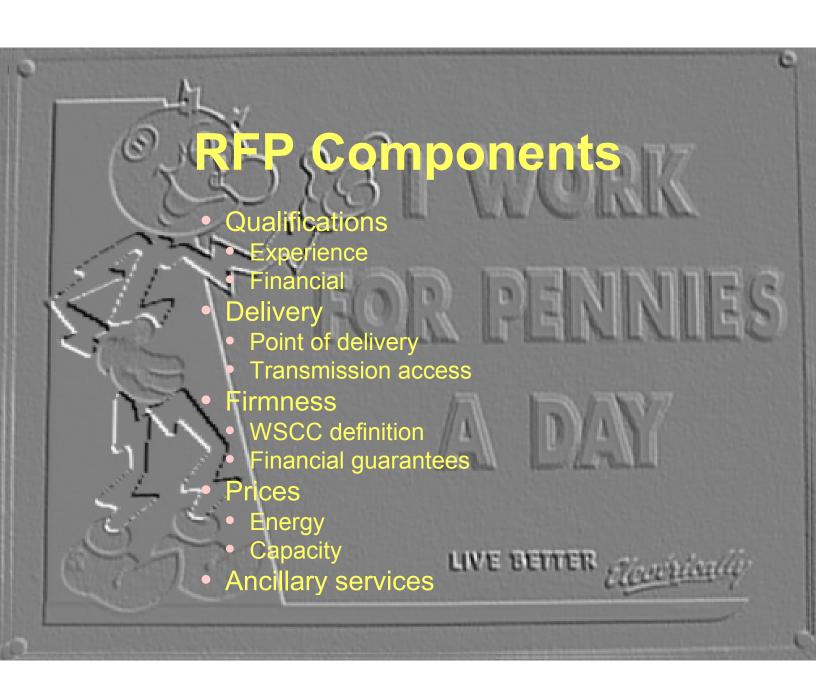






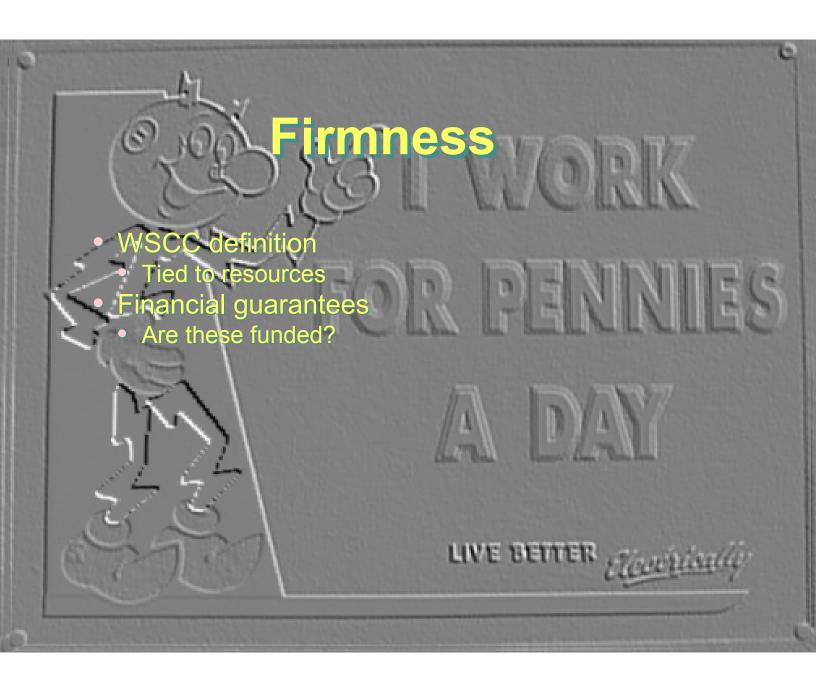


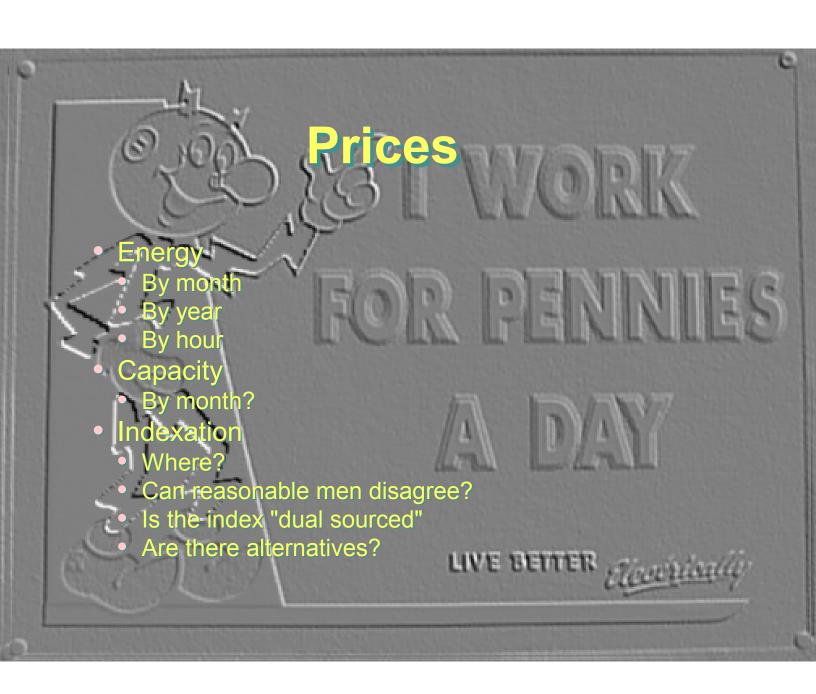








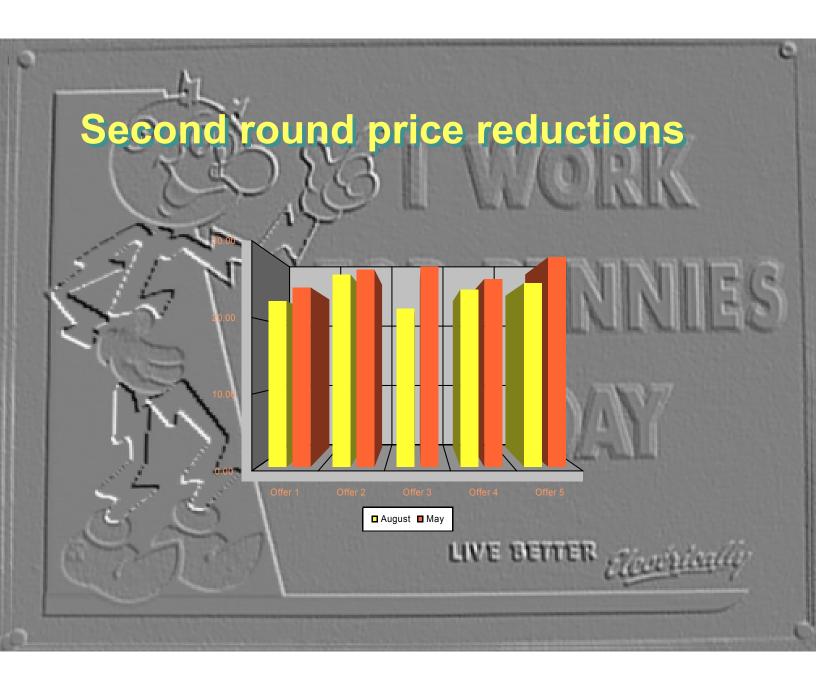


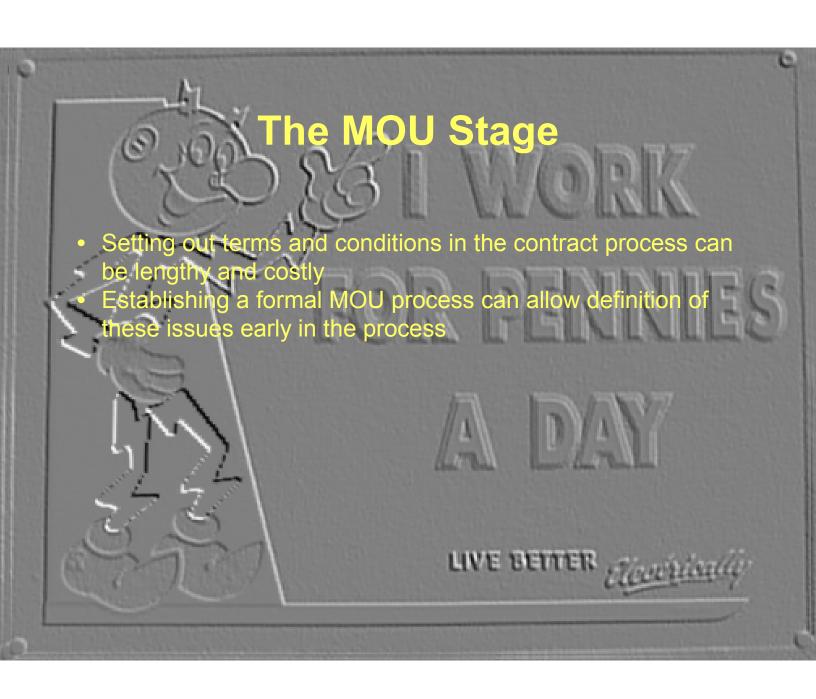




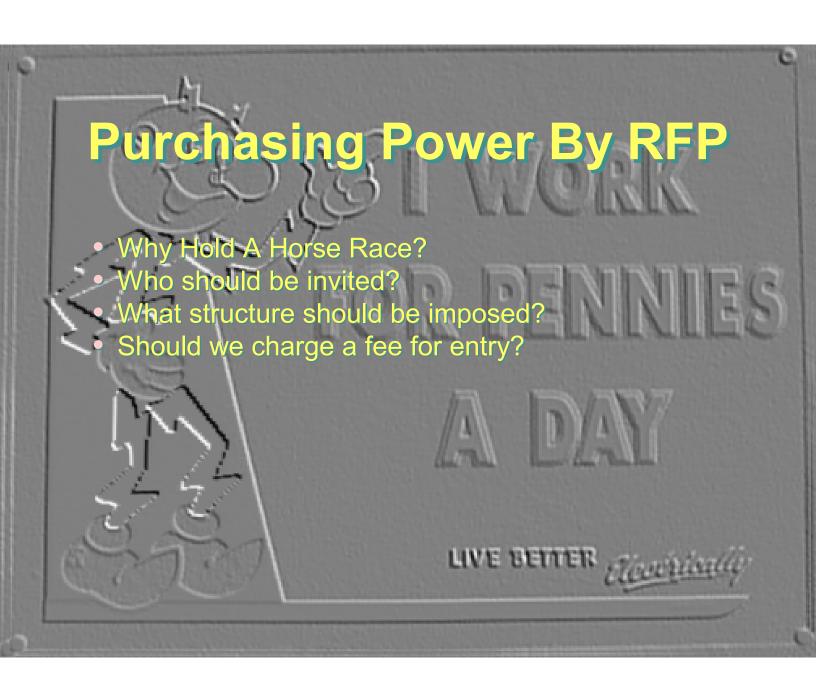


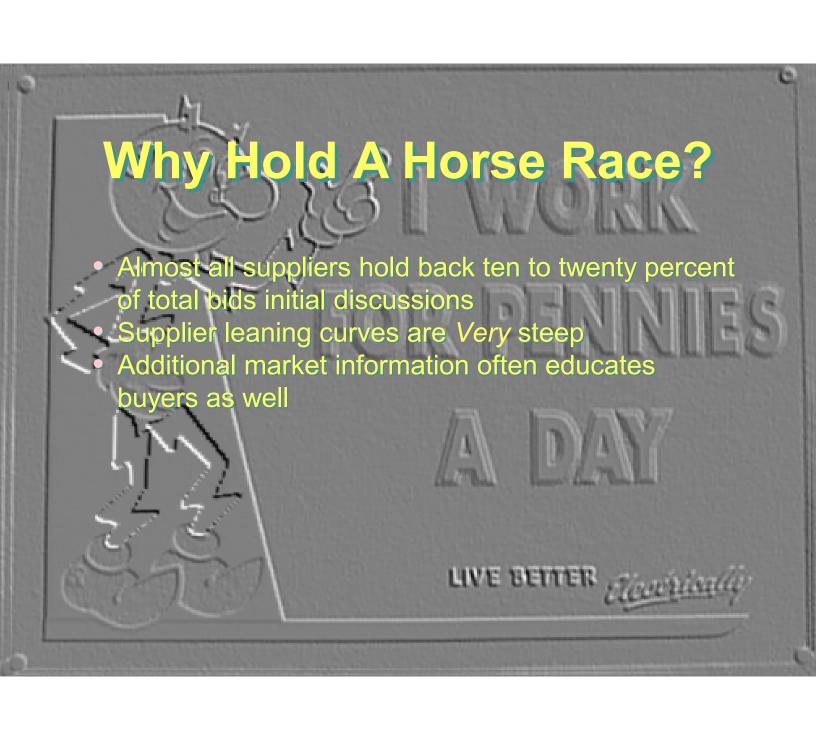


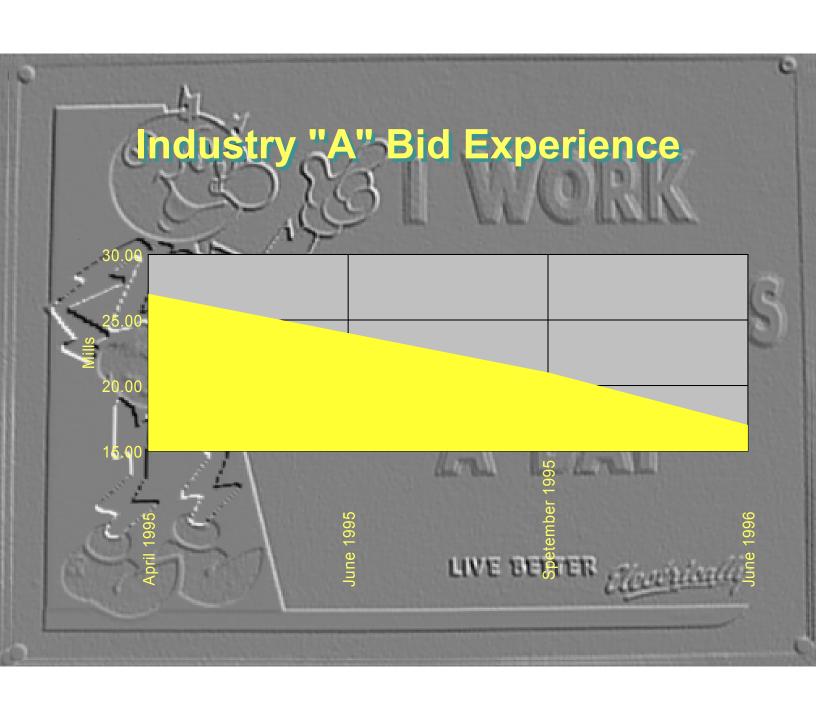


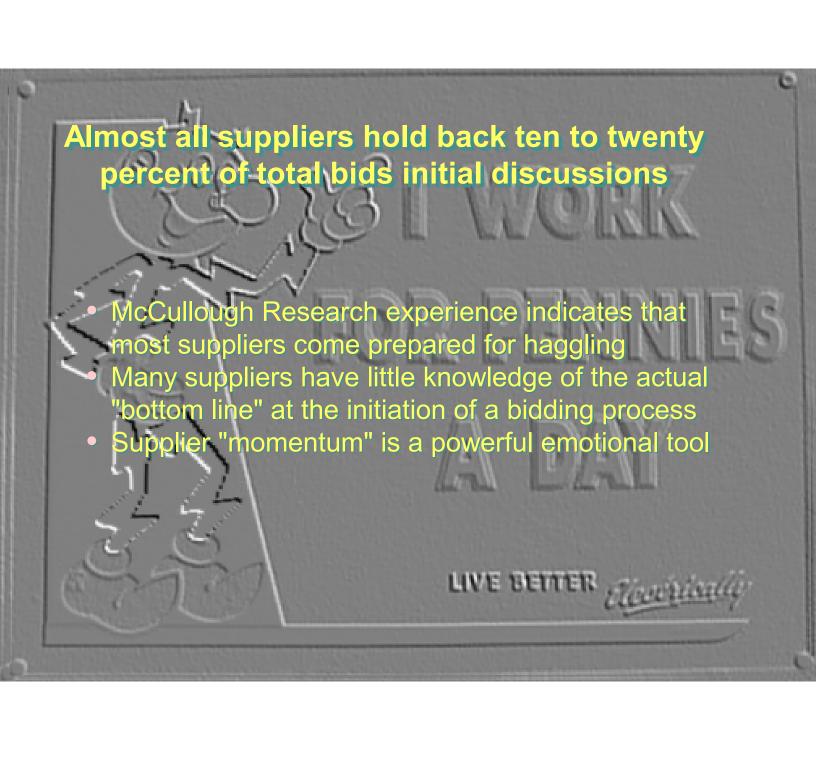


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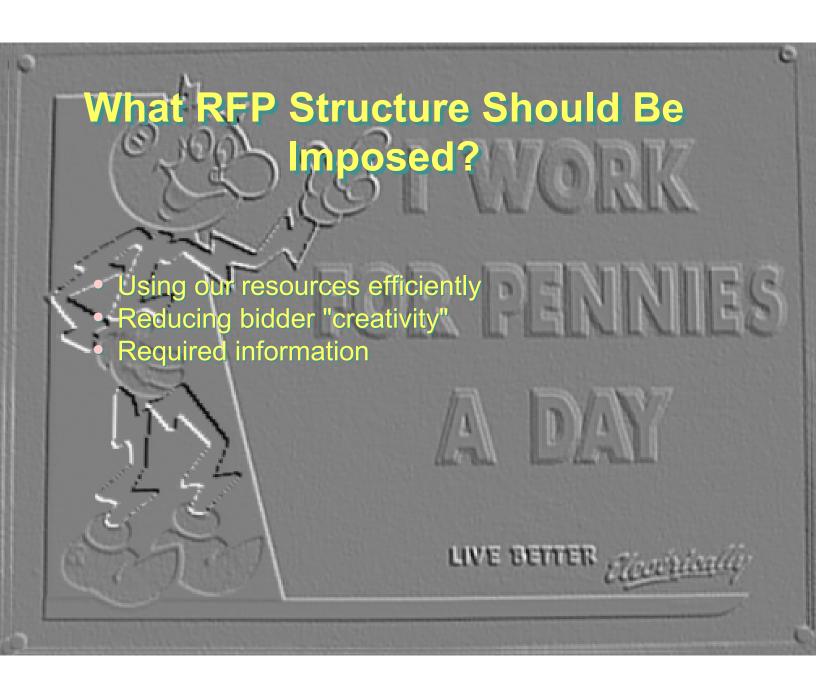
- Our experience is that suppliers have a lot to learn
- Transmission arrangements are a common source Lof-learning curve "value"
- For example, many existing utilities have power contracts that already involve transmission in the opposite direction of the proposed transaction
- This is called "counter-scheduling" in real world operations

LIVE BETTER Secretical



- Many buyers structure their bid around a limited set of resources
- The bid process often firms up the possible inter-rationships between bidders
- A common example is timing:
 - Bidder A has resources for one to five years
 - Bidder B has resources for six to twenty years

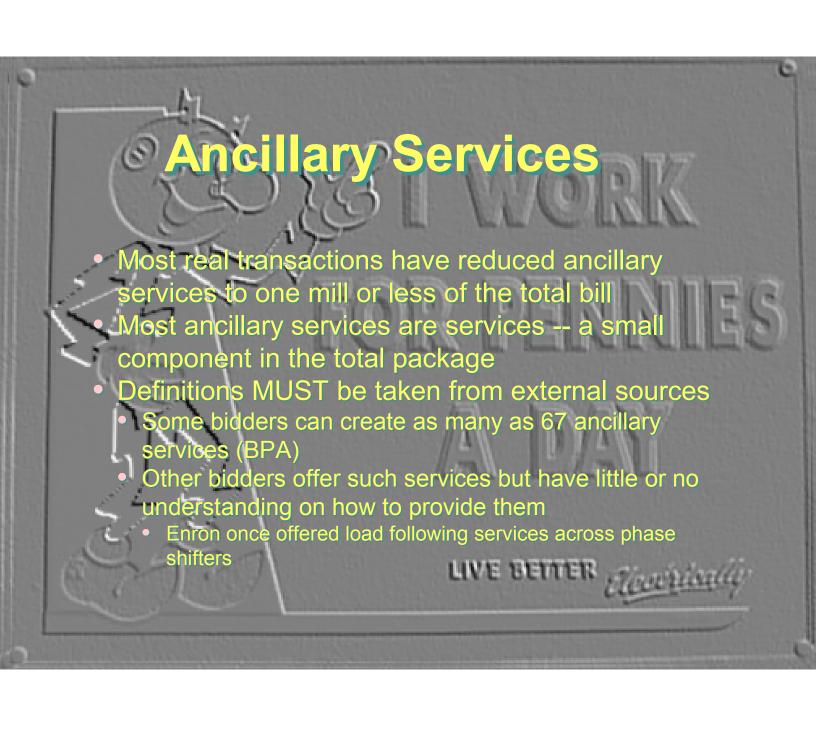
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- McCullough Research has gone to a "quantum" approach
 - Bidders are invited to provide 10 megawatt blocks with a minimum capacity factor
 - This allows easy comparison between competing bidders
 - The minimum capacity factor allows easy classification of peak and baseload resource
- The "quantum" approach also reduces the need to provide bidders with detailed load information





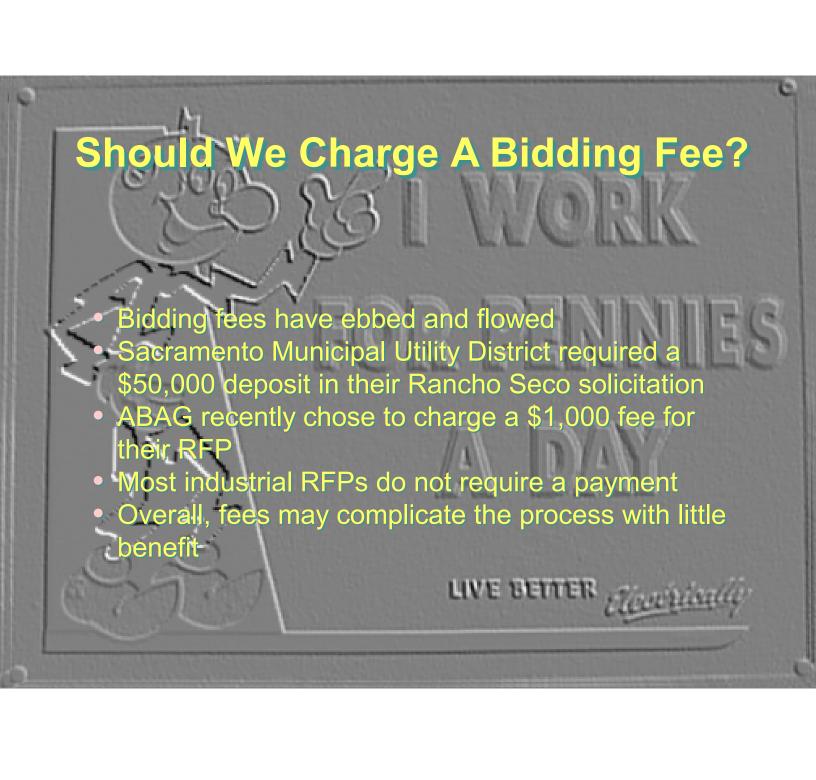
- Bidders tend to request more information than they actually use
- Most pricing is currently based on supplies rather than specific demand characteristics
- Overall loads -- on a monthly or daily basis -- are useful, but not required
- More important information is location, transmission arrangements, and operating requirements

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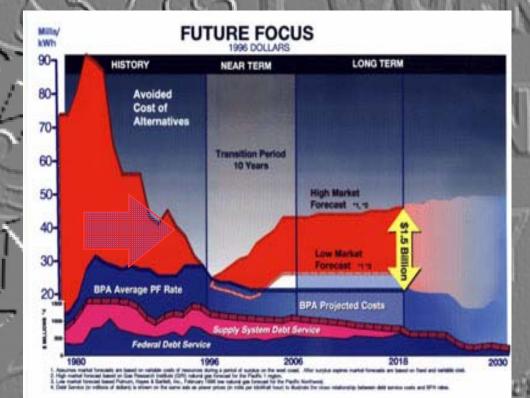
- Recently the building management association of San Francisco proposed eliminating brokers from participation because they "lacked experience" In reality, the brokers and the utilities are often difficult to distinguish
 - Enron, LG&E, Illinova and others are closely tied to large retail utilities
 - New entrants often are staffed with skilled personnel and bring new solutions to old problems
 - More is often better

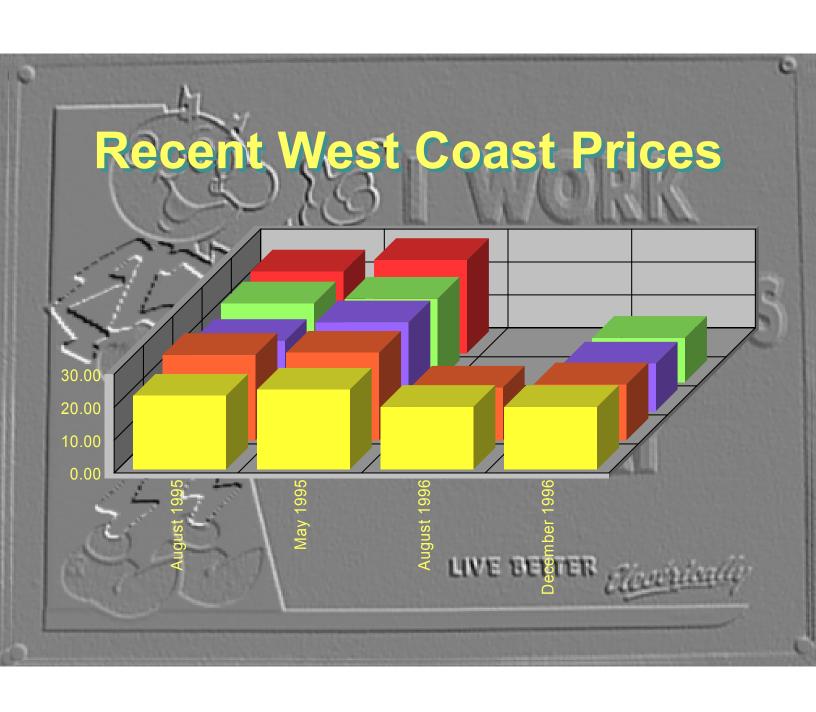
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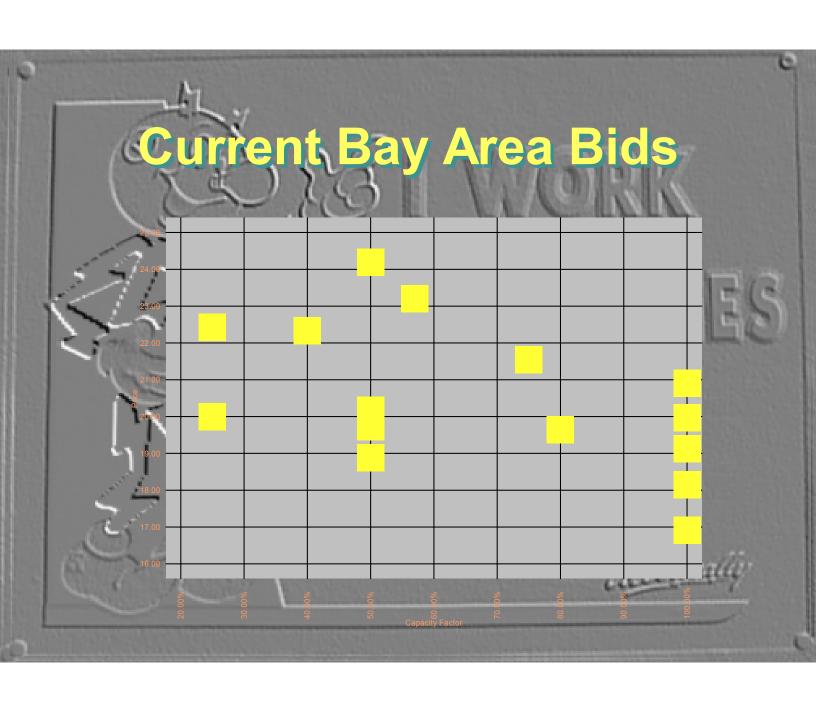


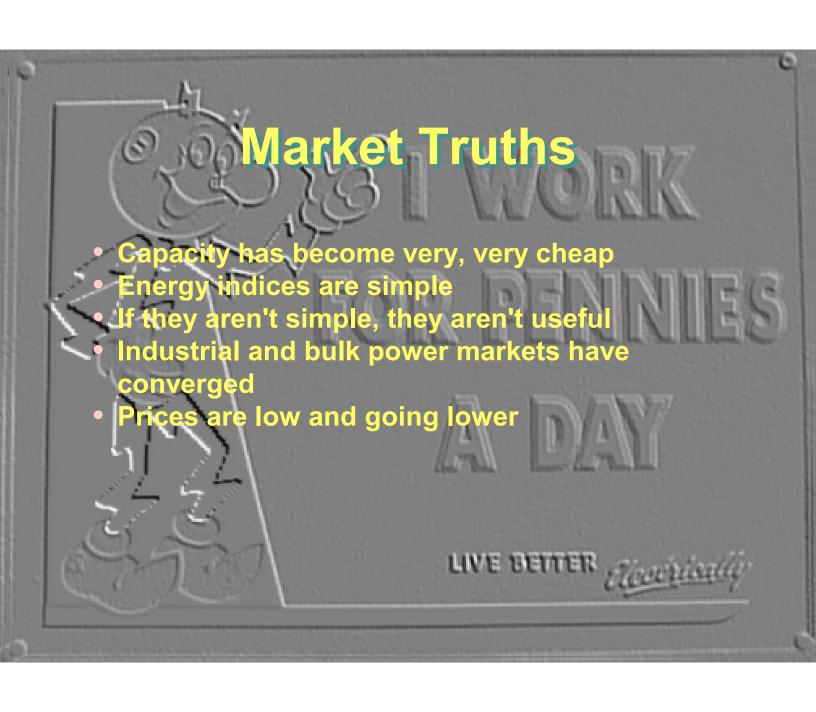


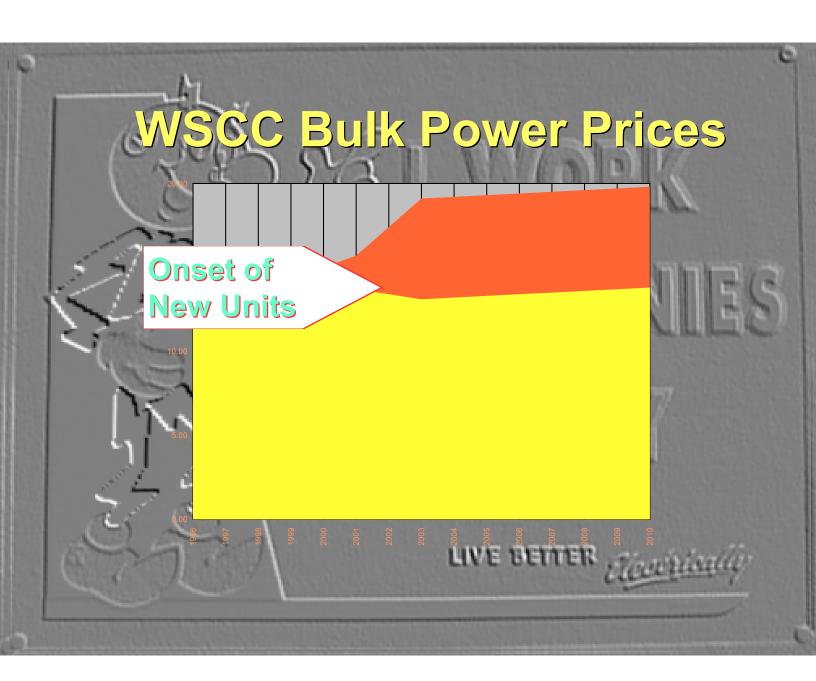
Prices Fall Again

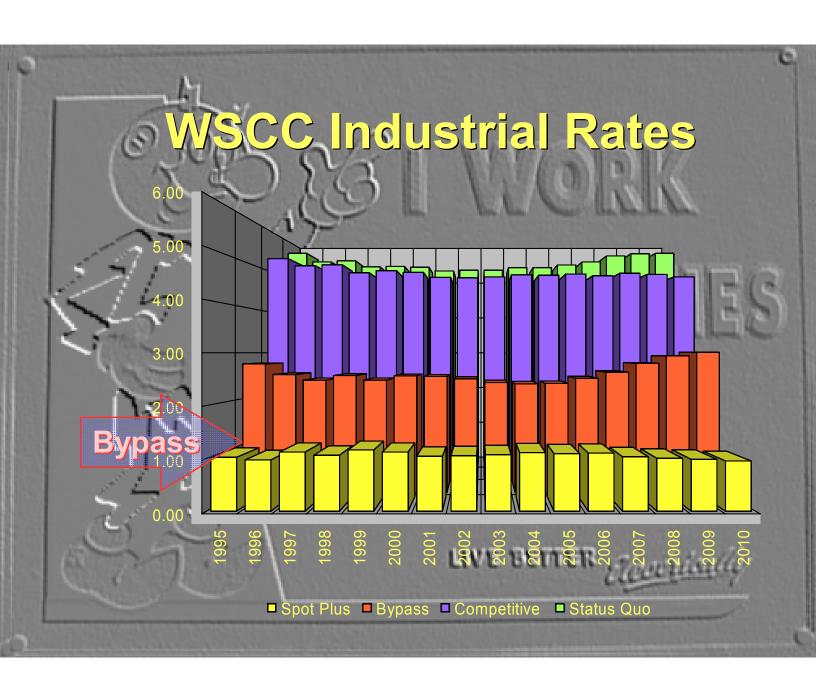


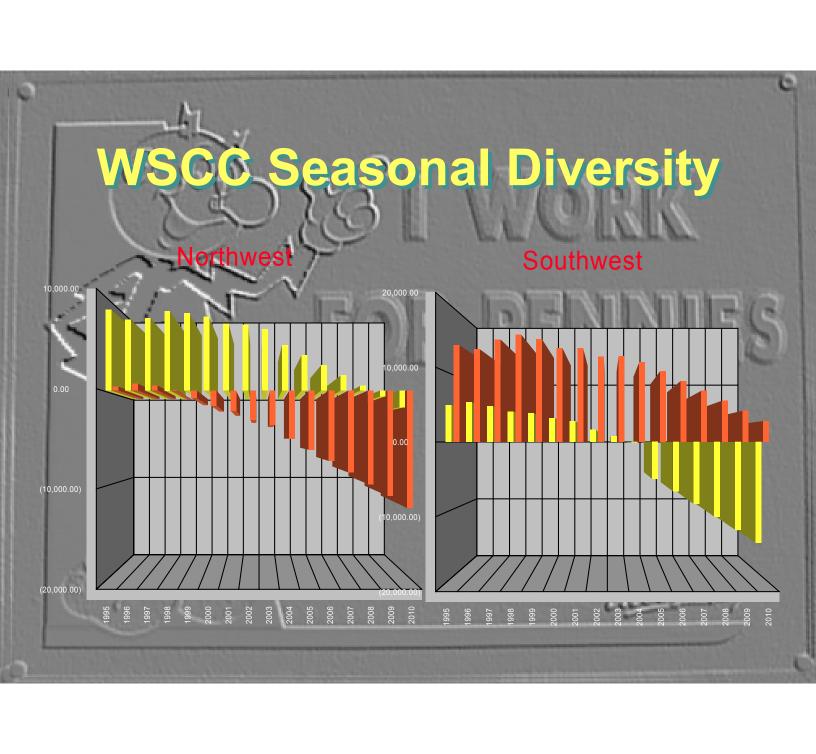


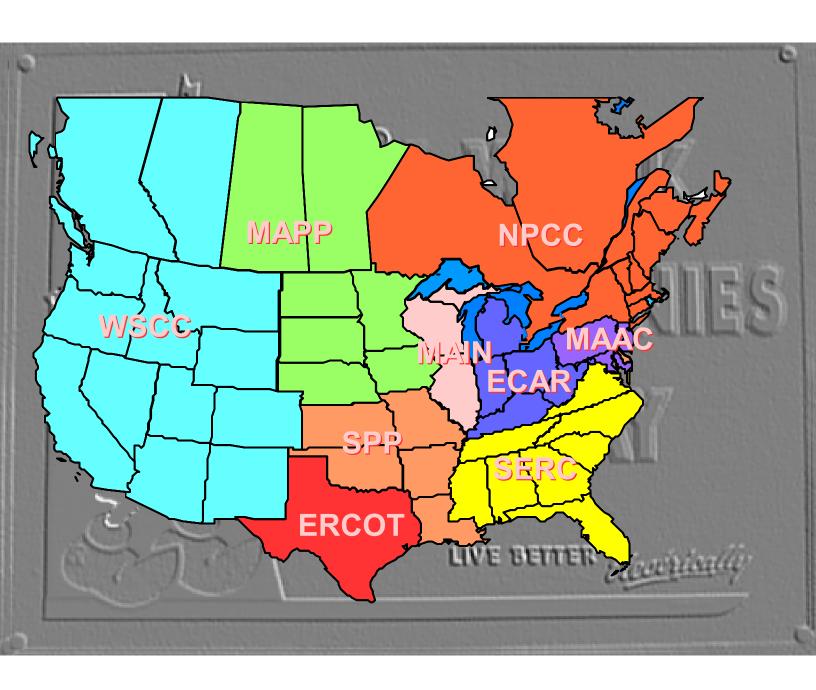








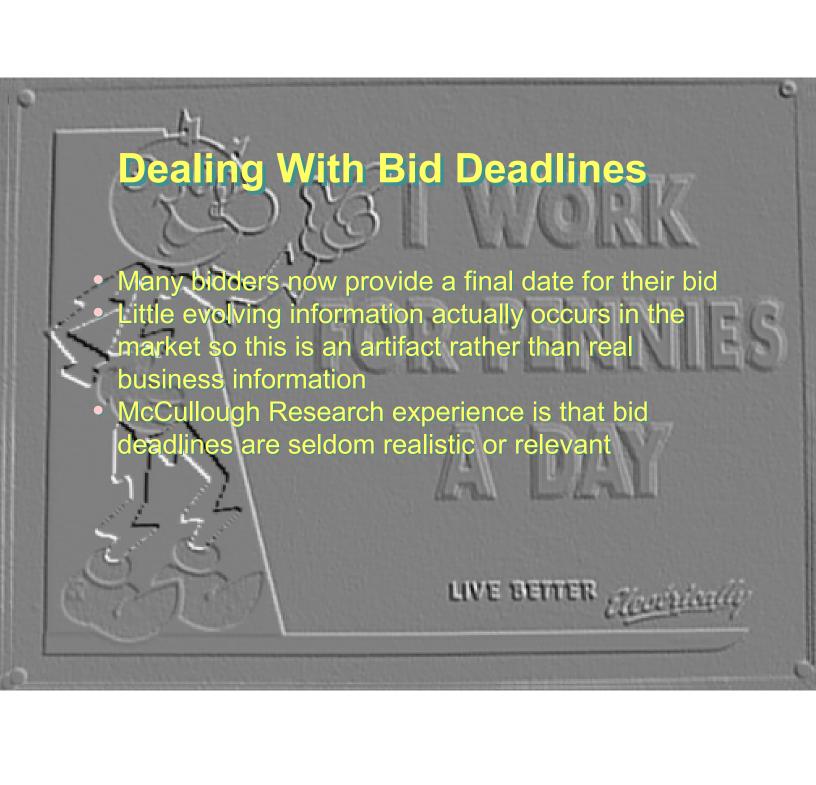


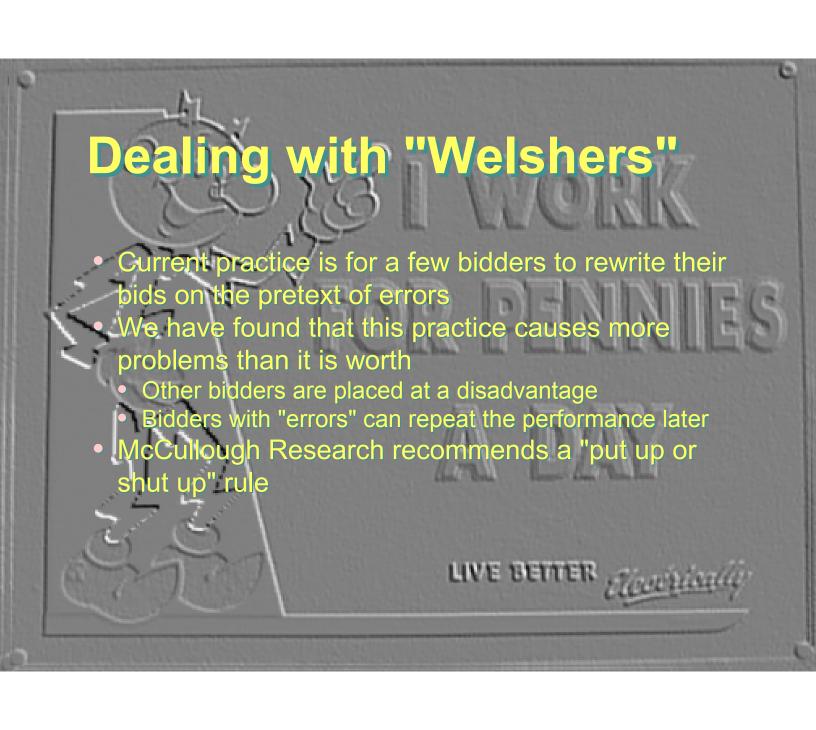


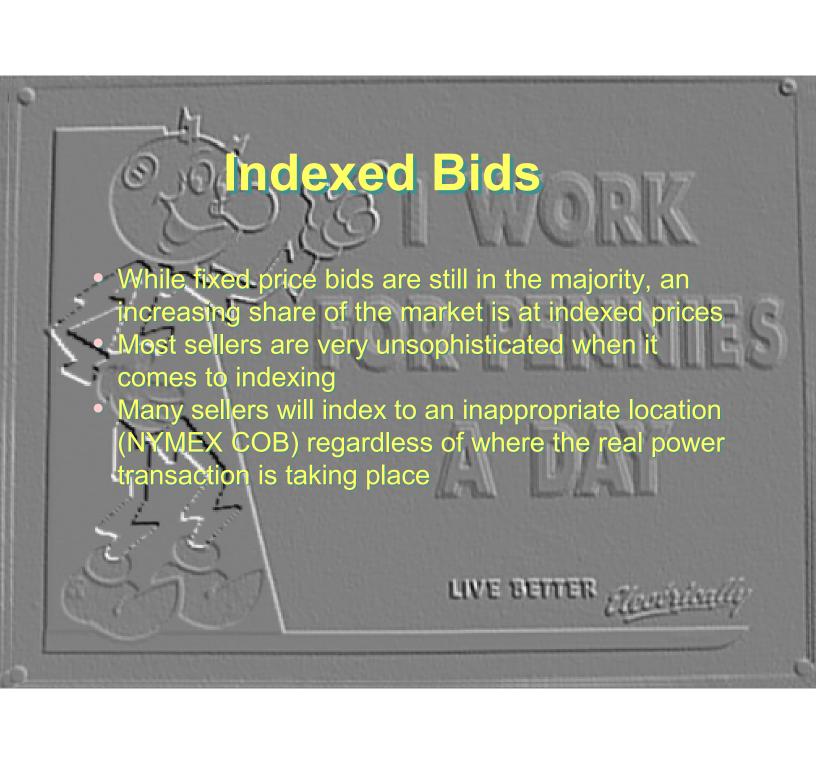


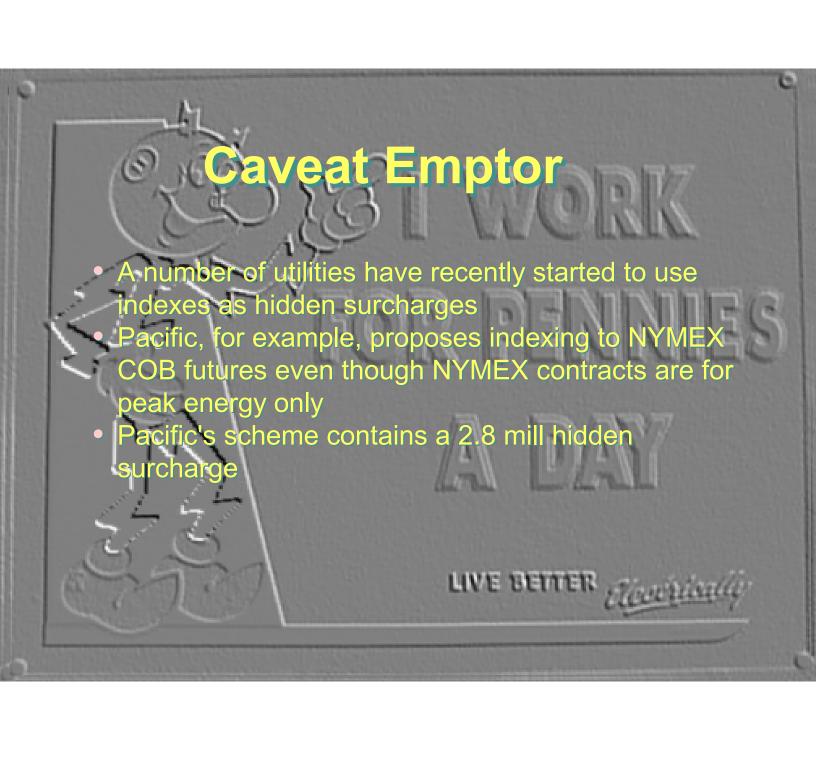
- eaking the whole into parts
 - Ancillary Services
 - Defined ancillary services should be taken from comparability tariff
 - Energy
 - Capacity
- Bids that cannot be reduced to numbers are likely to be unhelpful
- Dealing with deadlines
- Dealing with "welshers"
- Indexed bids

LIVE BETTER ACCOUNTS



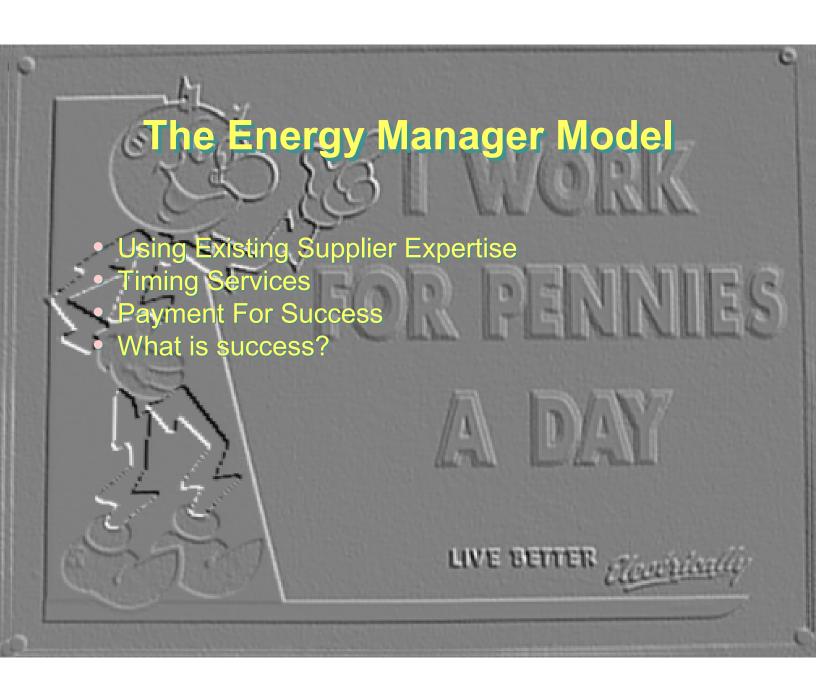












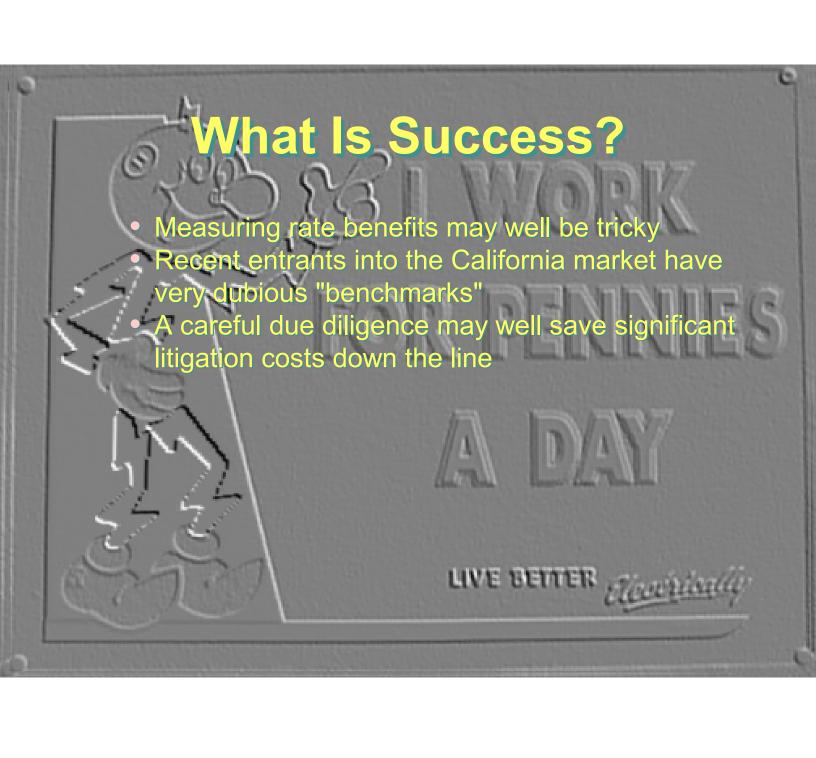


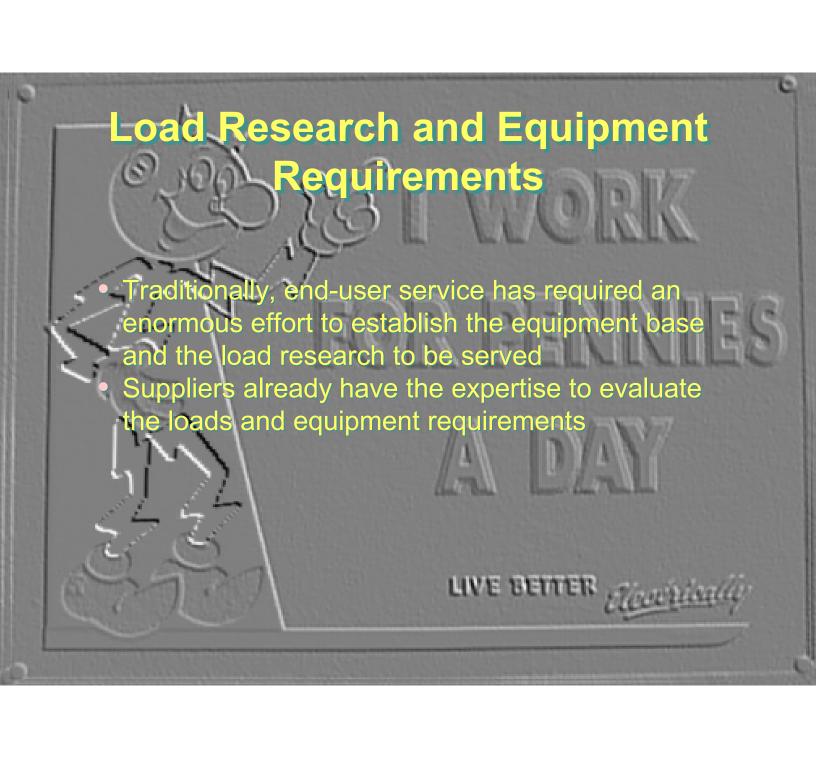
- Most suppliers currently are affiliated with an existing utility system
- These suppliers have a successful history of billing, distribution, credit, and management issues
- Suppliers also are able to draft personnel to meet ineeds
- Suppliers are able to measure, estimate, and cost expansion and replacement options

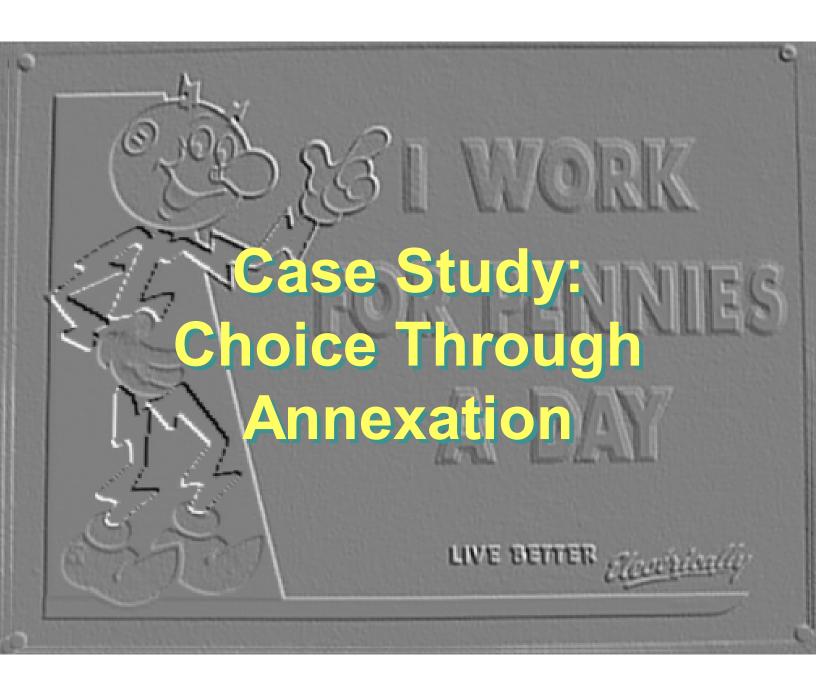
LIVE BETTER Electrical

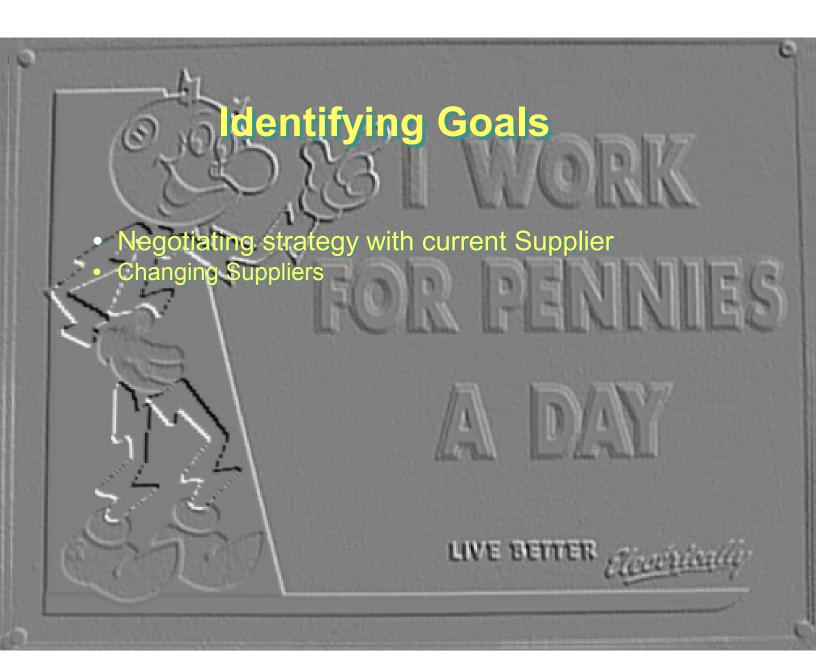


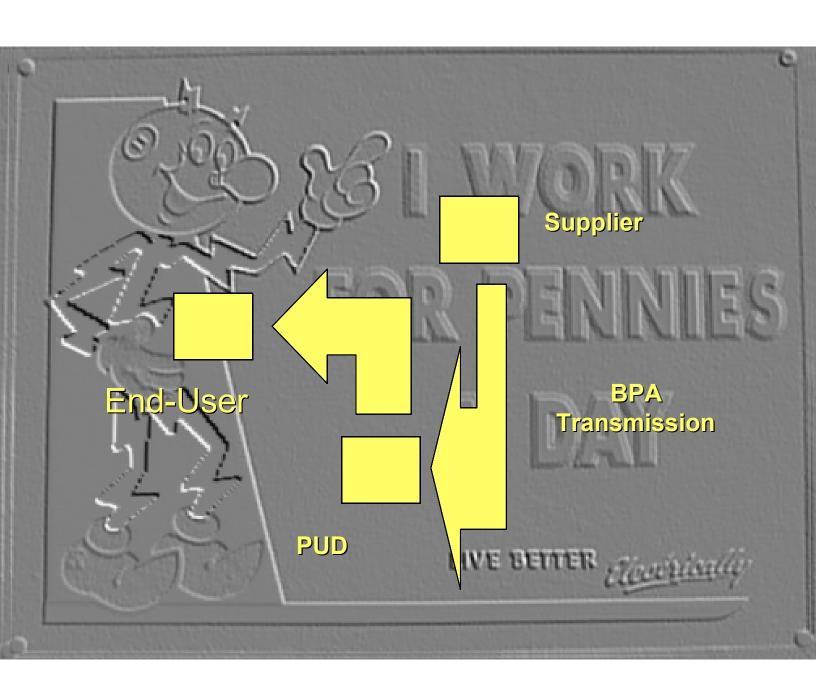


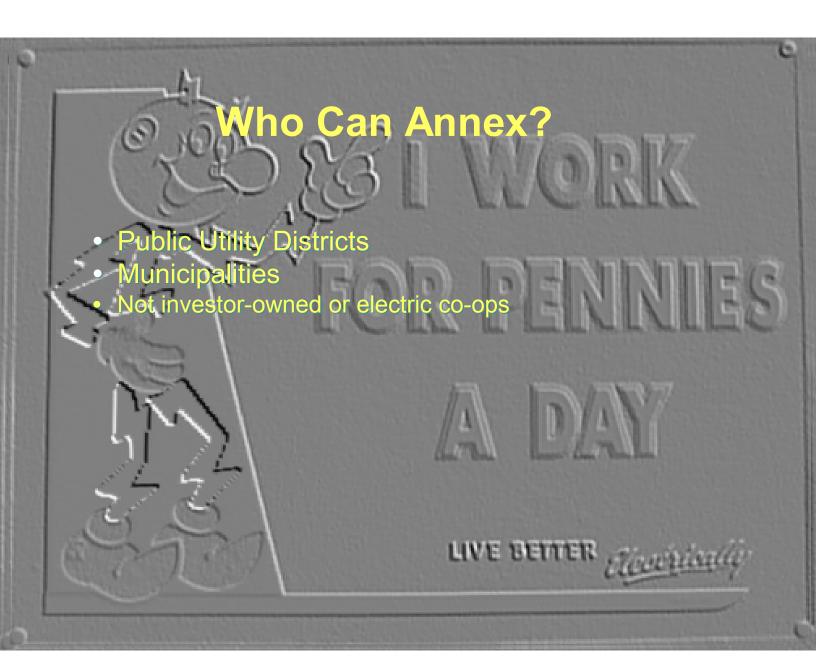


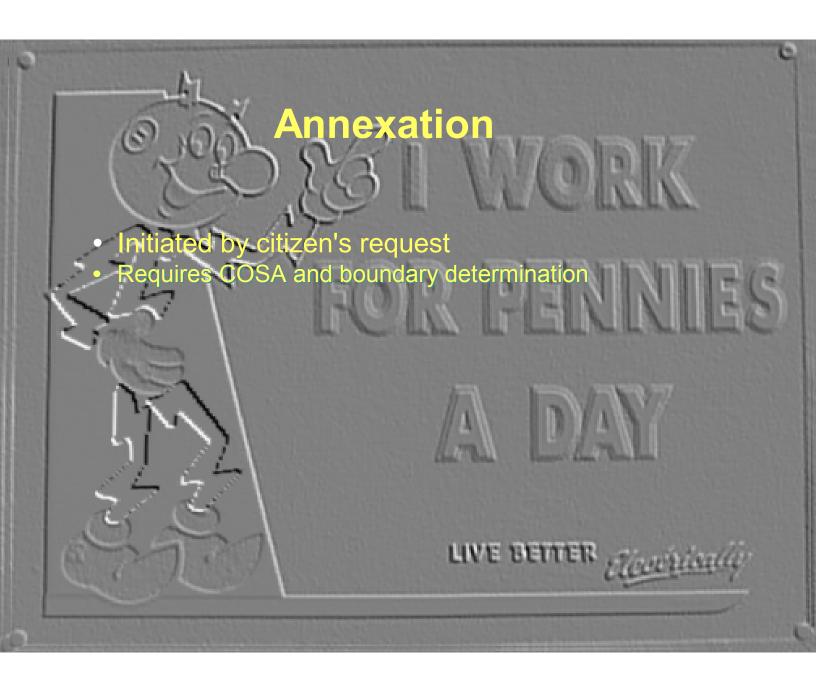


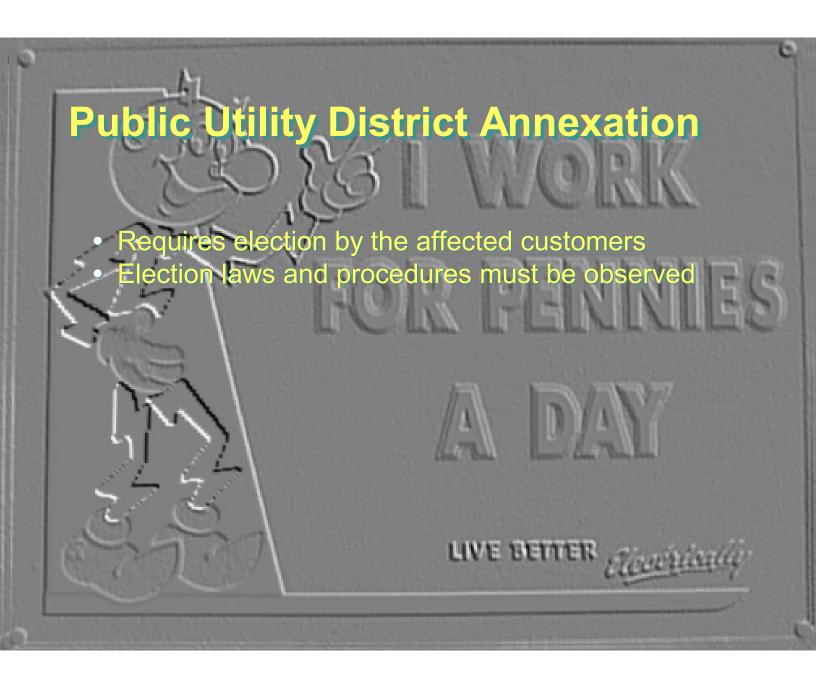


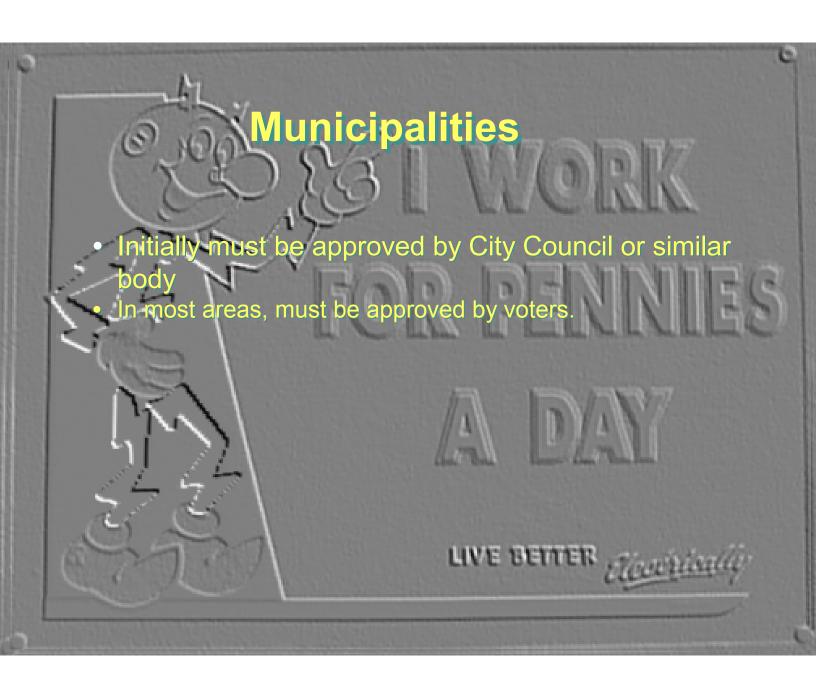




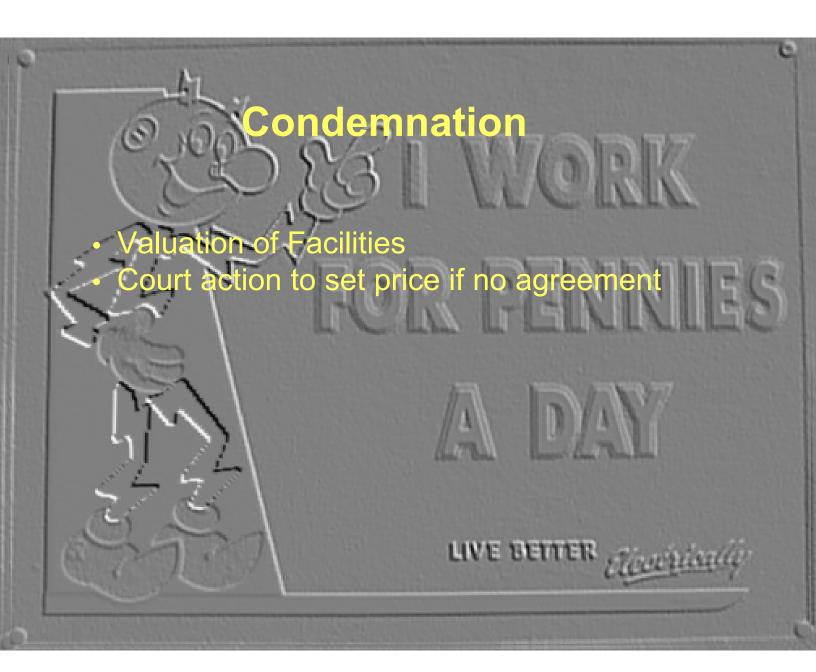




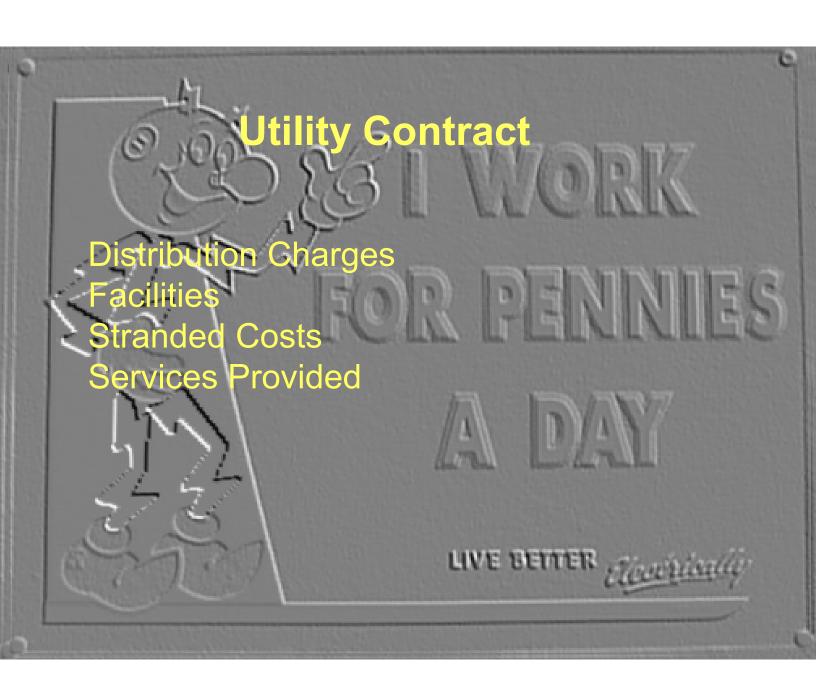


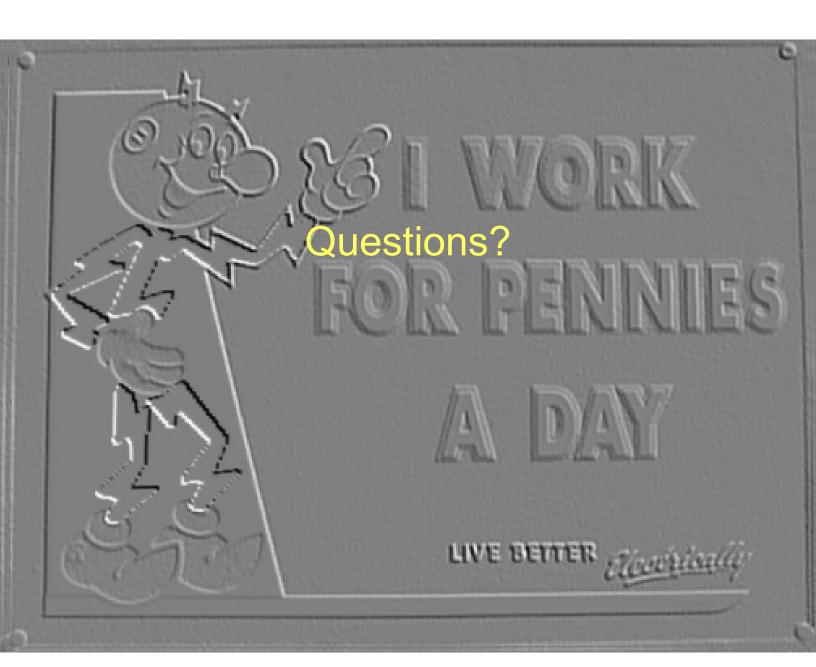


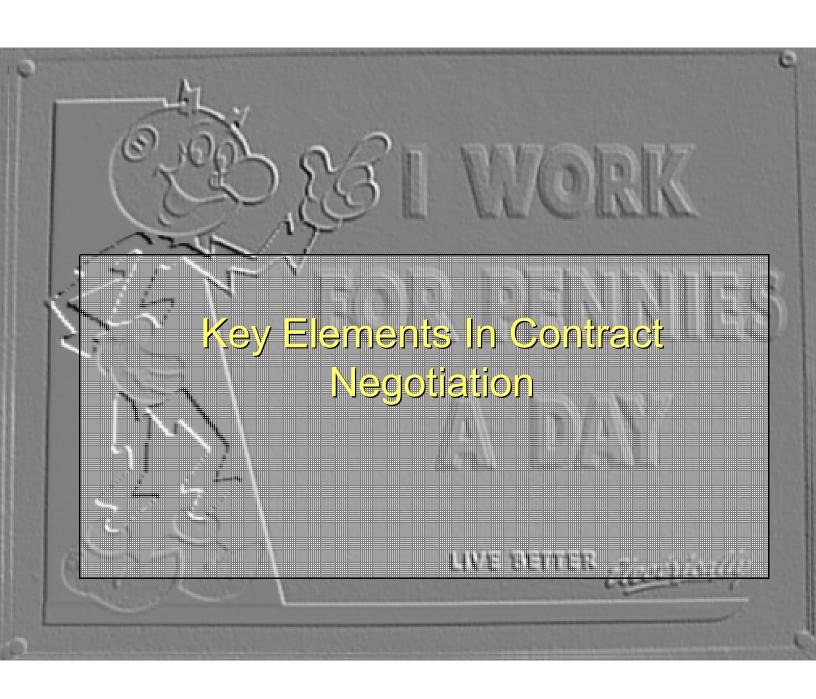


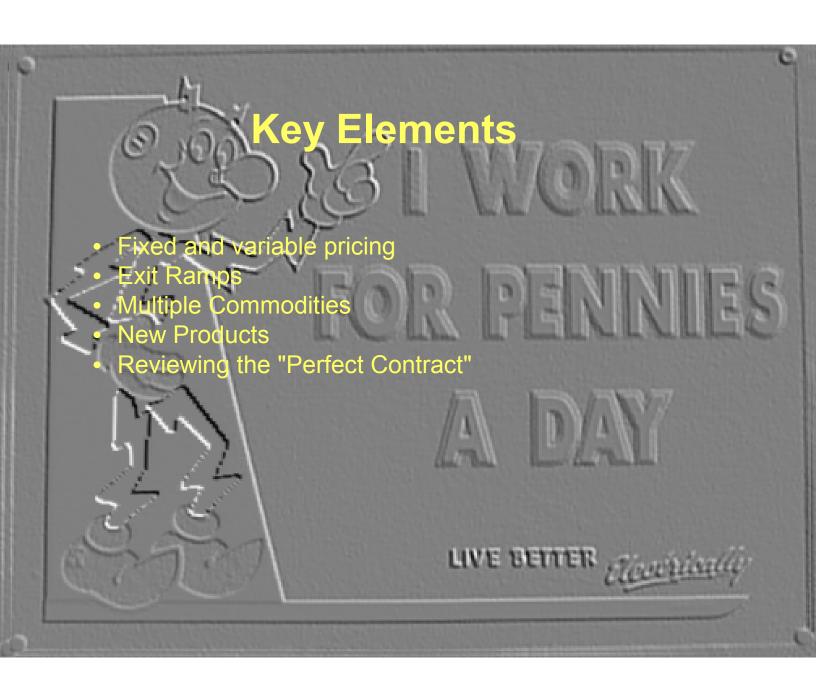




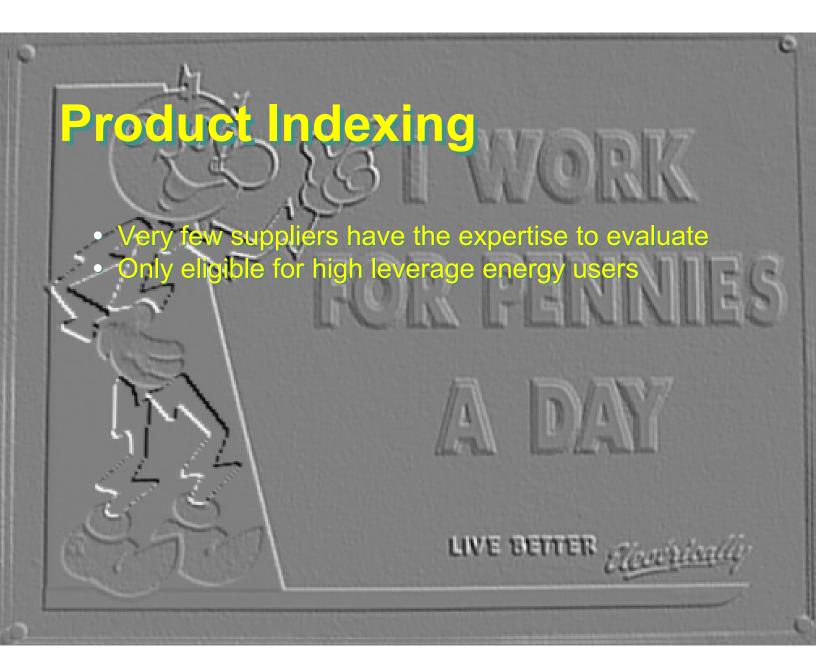


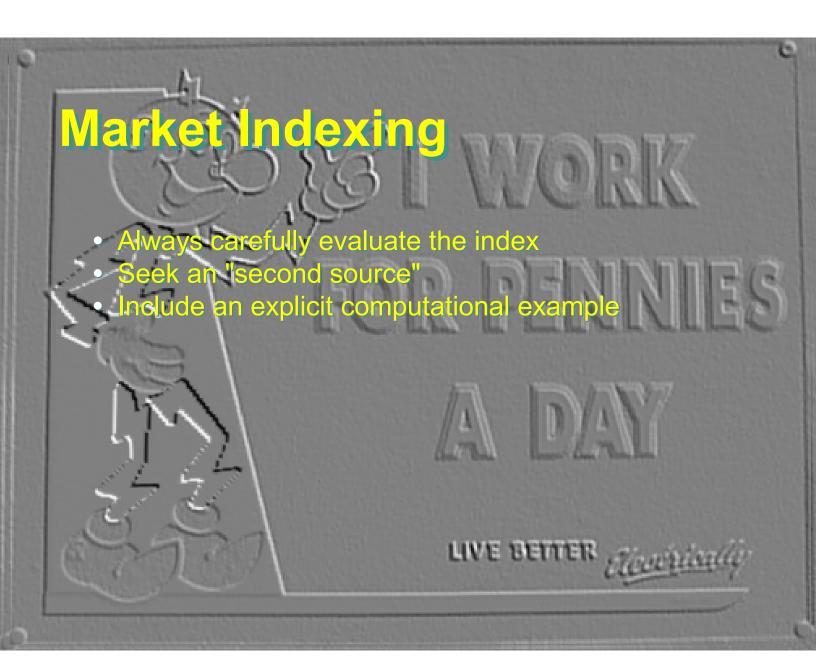


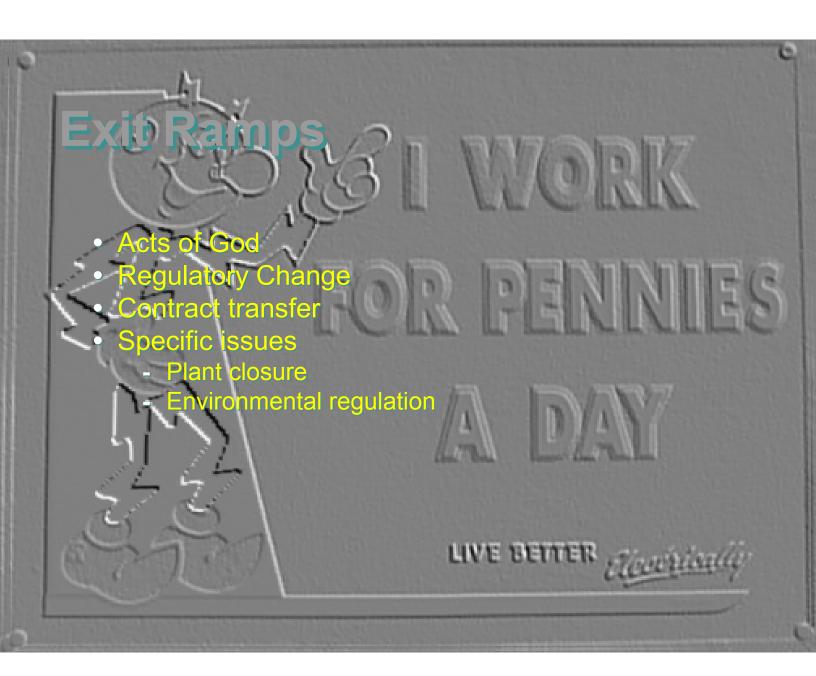




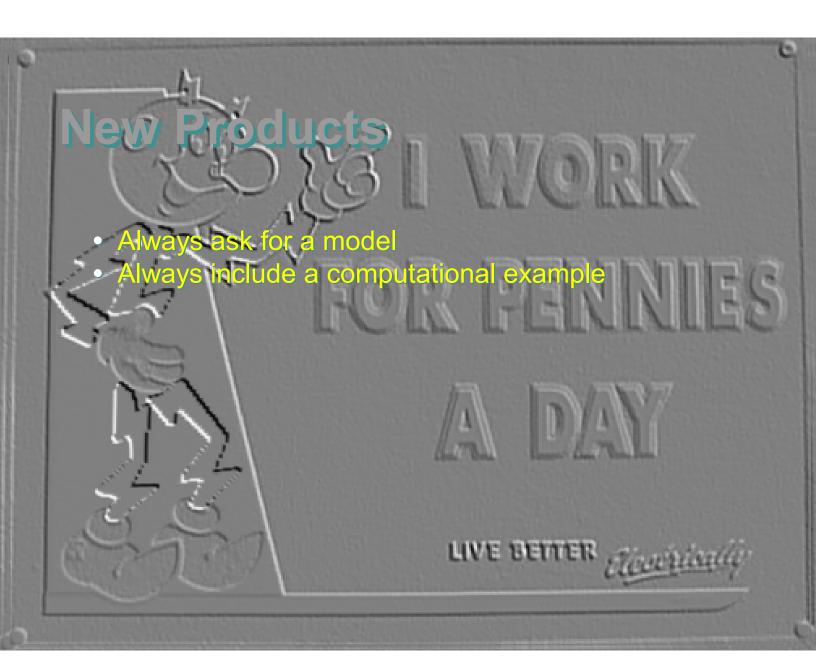




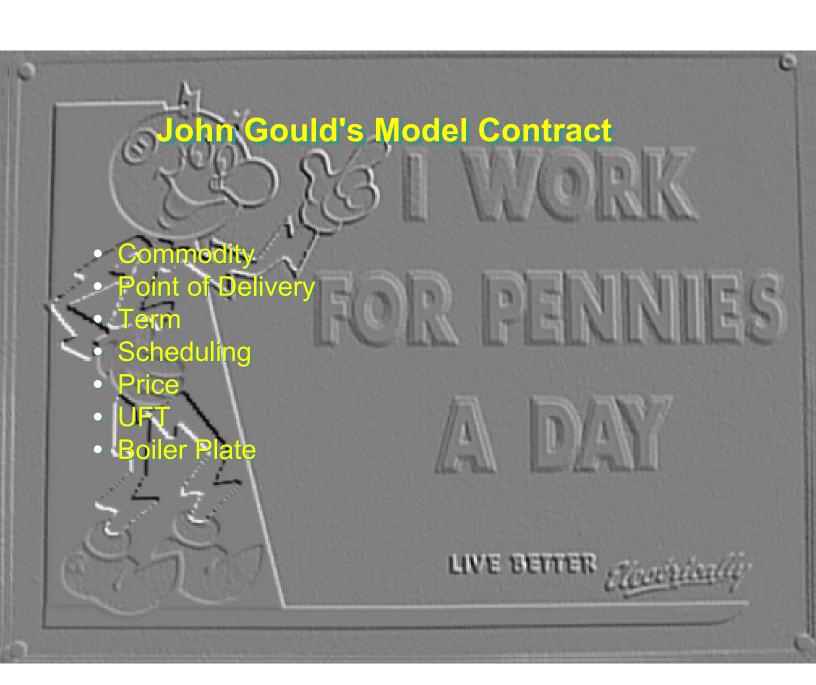


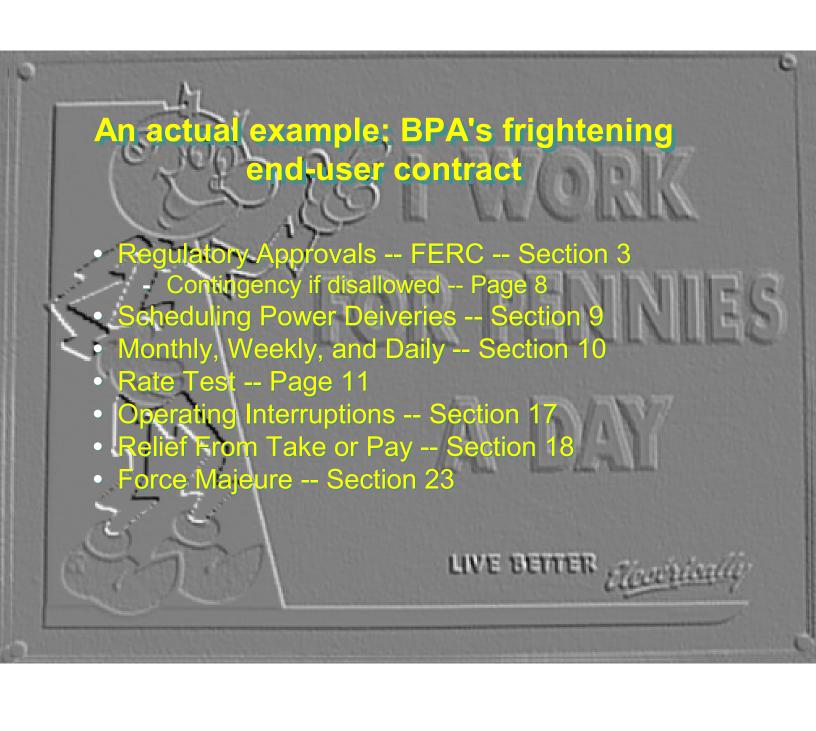






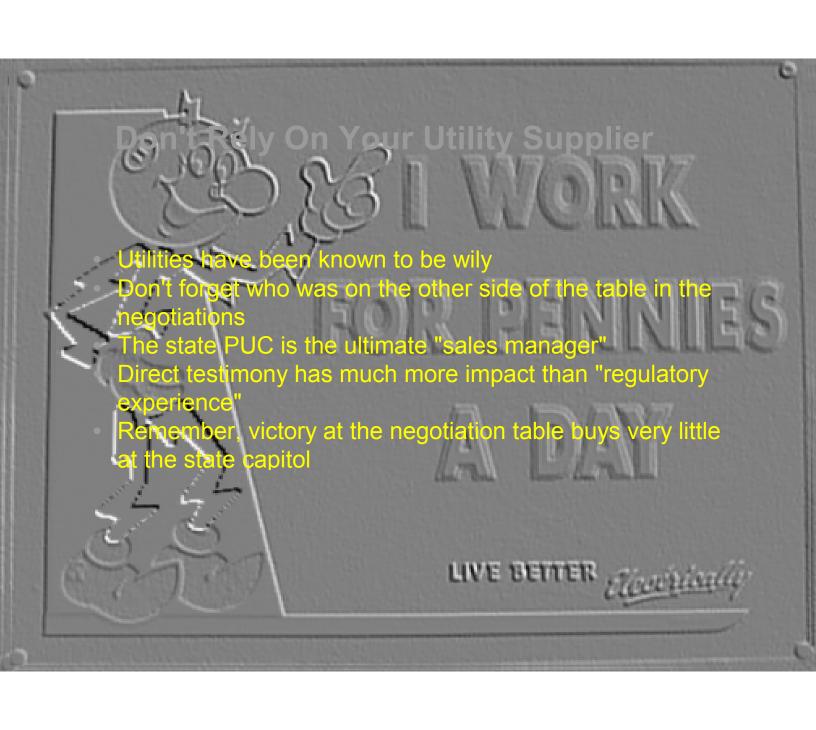


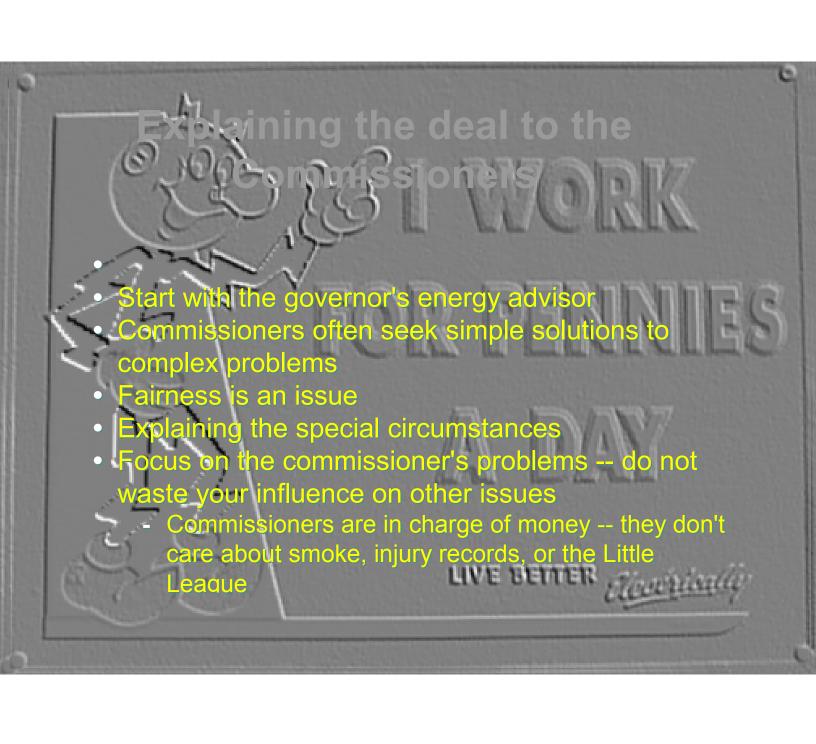


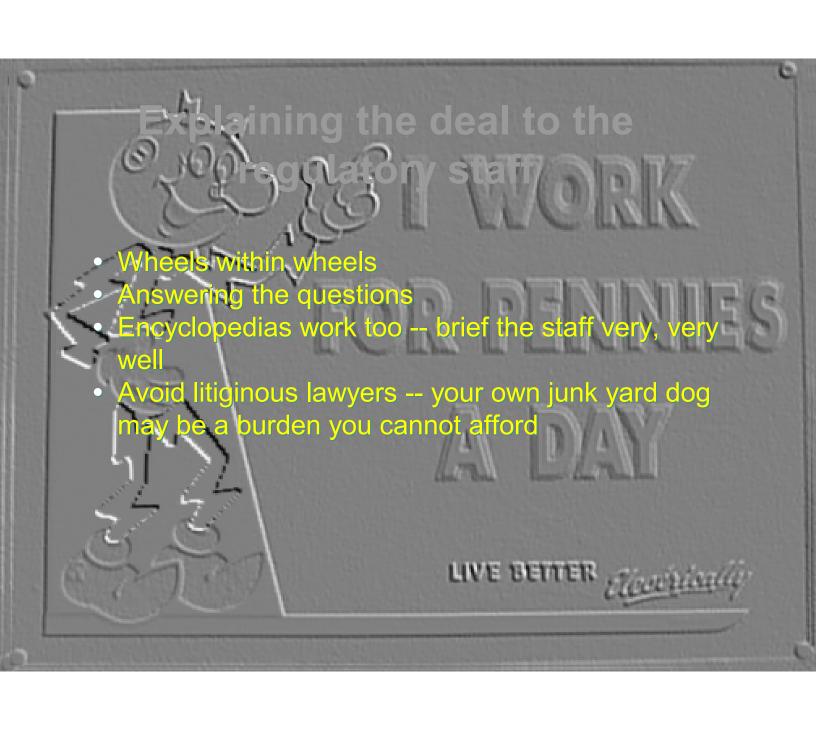














In one recent regulatory approval -- Boise
 Cascade's reduction of rates from 38 mills to 25
 mills -- staff opposition was only announced the day of the hearing

 Utility involvement had been weak -- the utility was clearly unprepared to prevail in a floor debate in front of the Commissioners

 The company attorney was prepared and managed to win against the motion to remand the tariff back to the staff for more study

