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Inside this issue:

<i>Cost of Service Studies</i>	1
<i>P&amp;D Takes Key Role in New TVA Generation Partners Initiative</i>	2
<i>Faces at P&amp;D</i>	3

## **Cost of Service Studies for Distribution Systems**

**By Gary Hasty**

More and more distribution utilities are viewing their role as the “Wires Company” with responsibility for delivering the electrical products from the wholesale power company to the ultimate consumer. However, many of these utilities have not yet set their retail rates to assure that they recover all of their distribution expenses monthly along with an adequate margin. This may be manifesting itself as significant cash flow fluctuations or depending on income from secondary sources such as interest and late payments rather than depending on income from the sale of electricity.

In today’s world of constantly and rapidly changing wholesale power costs, it is imperative that the “Wires Company” set its retail customer charges, energy rates, and adders to assure that the expenses for operating the distribution system are properly recovered. This can only be accomplished by identifying what these expenses are for the various classes of consumers served with a Cost of Service Study (COSS), which properly allocates to the rate classes all of the actual “Wires Company’s” costs of providing and operating the distribution system. By recovering these expenses accurately, the customer charges and retail adders can be de-coupled from the ever changing wholesale rates allowing full support of programs which ultimately reduce energy sales and impact the revenue of the “Wires Company.”

Here are four key reasons why you should consider using P&D to assist with your COSS to develop parameters for collecting distribution costs:

**If you wish to receive P&D’s newsletter, uPDate, by e-mail, please let us know. Send an e-mail to sales@pd-engineers.com**

*(Continued on page 3)*

## *P&D Takes Key Role in New TVA Generation Partners Initiative*

TVA is currently in the process of rolling out what many feel will be one of the most innovative and progressive renewable energy programs in the nation, and Patterson & Dewar Engineers has been chosen as the technical consultant to assist TVA and its distributors in many facets of this new initiative. The former Generation Partners Program is being revamped by TVA, and the many new incentives are sure to excite customers across the valley who have an interest in "going green."

Under the new program, customers will have the opportunity to install distributed generation (DG) systems sized less than 1 megawatt (which produce energy from approved renewable energy sources) and sell that energy to TVA at a premium over the retail rate. For solar systems this premium is an impressive 12 cents per kilowatt hour above the retail rate, and for other qualifying DG systems the premium is 3 cents per kilowatt hour above the retail rate. There are many other incentives in the program that have been upgraded, and when you add that to the tax credits and possible grants being offered from various sources, the new Generation Partners program is certain to be a hit with many TVA customers.

One important facet of the new program has been a series of meetings held at various locations across the valley to help inform distributors about the new program and to assist them in working with DG systems. P&D employees Joe Perry, Gary Grubbs, and Steve Conover are playing an important role in these meetings by providing three technical presentations and helping to answer questions that the distributors may have regarding renewable energy systems. These presentations deal primarily with the history of DG, applicable standards, and the installa-



**The P&D developed PV Demo Board (mock home PV installation) was viewed by many participants during the seven valley-wide workshops.**

tion/operation of these systems. The presentations focus heavily upon important industry standards such as the IEEE 1547 series, UL 1741, and NEC 690, and also provide guidance in the most critical aspects of applying these standards.

P&D will continue to be available after the initial presentations to assist TVA and the distributors with technical questions regarding engineering and operations of DG systems as well as any other issues which may arise in regard to the new program. We are very proud to be a part of this bold new initiative, and we look forward to working with everyone involved.

If you have questions or need technical assistance concerning distributed generation and renewable energy systems, please contact Joe, Gary, or Steve at the e-mail addresses below:

Joe Perry	<a href="mailto:jperry@pdengineers.com">jperry@pdengineers.com</a>
Gary Grubbs	<a href="mailto:ggrubbs@pdengineers.com">ggrubbs@pdengineers.com</a>
Steve Conover	<a href="mailto:sconover@pdengineers.com">sconover@pdengineers.com</a> ❖

### **Workshop**

### **Advanced Design Techniques for Distribution Line Hardening**

**WHEN:** 09/15~16/2009 **WHERE:** Holiday Inn University Plaza, Bowling Green, KY

This workshop is developed to provide attendees with the information and tools needed to understand the mechanics of designing distribution lines to meet (and exceed where warranted) RUS and NESC requirements. Instructors will delve into ways to harden distribution infrastructures to better survive severe loading conditions (ice, wind, tree, etc.). Major line component designs that will be covered are **Poles, Crossarms, Sag / Tension, Guys, Anchors, Conductors, Joint Use, Other Equipment and Extreme Ice / Wind Loading**. Contact: Gary Grubbs ~ [ggrubbs@pdengineers.com](mailto:ggrubbs@pdengineers.com) ❖

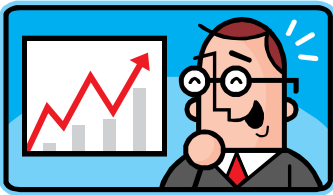
## Cost of Service Studies *cont'd*

**1 – Tried and tested method** – The methodology used was developed by Norman DeLong, presented before TVA and several Public Service Commissions, and approved by many managers and utility boards. This methodology generally results in the collection of more fixed costs in the customer charge and less cost in the variable energy sales.

**2 – Analyzes only distribution costs** – The P&D COSS only analyzes the proper allocation of distribution expenses and does not include any allocation of wholesale power costs.

**3 – Simple and easy to understand** – One of the most common comments we hear about COSS is that they are complex and impossible to understand the assumptions and calculations. P&D's method is very transparent and clear. Give us an opportunity to show you and we know you will agree.

**4 – Reasonable cost and completion time** – The COSS can typically be completed within one month of receiving all of the utility's annual expense data and our cost will be substantially below many other COSS providers.



If you need assistance to adjust your retail rates and improve your revenue recovery, the P&D Staff is ready and able to help with a COSS or complete retail rate review and analysis. Please call your P&D client engineer or 770-453-1410 and we will help you modify your retail rates to match your utility's needs. ❖

## Faces at P&D

In the electric utility industry, mention Patterson & Dewar and it almost never fails that someone will ask how Joe is doing. That's because **Joseph E. Perry, III, P.E.** has been with P&D for 35 years and in that time has provided electrical engineering services to countless electric cooperatives and municipalities, written many papers, served on NRECA committees and been an active member of IEEE. He has been Vice President and Chief Electrical Engineer since 1986.

Upon graduating from Old Dominion University in 1967 with a BS in Electrical Engineering, Joe married his sweetheart, Murrill, and began his engineering career at NASA Langley Research Center in Virginia. Within a year, he and his wife moved to Florida where Joe continued working with the Air Force and NASA engineers at Cape Kennedy and the Kennedy Space Center.

In 1973, Joe moved his family to Atlanta, GA and was hired by Mr. Patterson and Mr. Ed Harris and thus be-

gan his electrical distribution career at P&D. His very first client was Taylor County RECC in Campbellsville, KY followed soon after by two more clients, West Florida EC in Graceville, FL and Southern Pine EPA in Taylorsville, MS. As a client engineer, Joe has performed long range system studies, construction work plans, power supply studies, sectionalizing studies, distribution system design and planning and substation design and equipment specifications in addition to countless other special projects and presentations on various topics.



"P&D has been a venture"

Joe is professionally licensed in seven states, serves on the NRECA T&D System Planning Sub-

*(Continued on page 4)*

## Faces at P&D *cont'd*

committee, is a member of IEEE - Industrial Application Society and a life member of IEEE - Power & Energy Society of which he served as Chairman of the Atlanta Chapter in 1981-82. Joe has authored and co-authored numerous papers including "Distribution Line Staking Basics Often Ignored," "Distributed Generation Interconnection," "Electric System Long Range Planning Guide," "Eliminating Unnecessary & Nuisance Substation Feeder Operations & Outages," and "Substation Justification for Electric Distribution Cooperatives" to name a few.

Joe was also instrumental in bringing to P&D J.B. Franklin, who is now the Vice President and Electrical Department Head, and Richard Rush, who is now Vice President and Operations Manager for HP&D. Joe has also served as a mentor to several young engineers at P&D as they began their engineering career.

In the 35 years that Joe has worked at P&D, the one thing he learned more than any other was to enjoy what you do, and he did just that. Over the years, Joe has made such close friends with his clients that they are like family to him. In his words, "P&D has been a venture."

When asked what he plans to do when he retires in January 2010, he says that he plans to do some fly fishing, reading, traveling, and spending more time with Murrill, their sons Nate and Jason and relishing the moments of being a proud papaw to his grandsons Evan, 5 and Tyler, 1. Joe will remain around P&D continuing his work on the NRECA T&D System Planning Committee, assisting in the electric department operations as needed, and being available for the many P&D clients with whom he has built long lasting relationships. ❖

### Patterson & Dewar Engineers



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