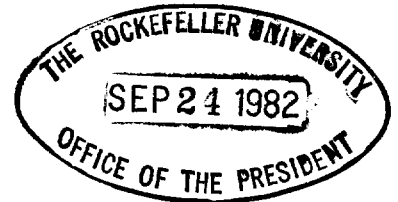


ELECTRIC POWER RESEARCH INSTITUTE

EPRI

20 September 1982

The Honorable John E. Bryson
President
California Public Utility Commission
California State Building, Room 5026
350 McAllister Street
San Francisco, California 94102



Dear John:

I am writing to follow up on the question you raised at the EPRI Advisory Council meeting in San Diego on transmission and distribution system reliability. Following the meeting, we read the CPUC report, and I believe we understand the basis of the conclusions.

We agree that transmission and distribution outages are worthy of substantial research. In fact, the Northeast blackout in 1965 was one of the factors leading to the creation of EPRI. We have identified almost 100 EPRI projects, listed in the attached tables, which relate to T&D system reliability. The table divides projects into three broad categories:

- o Design and analysis for reliable service
- o Component reliability
- o Maintainability and restoration of service

One of our activities under design and analysis is to strengthen the mathematical tools balancing generation, transmission, and distribution reliability. This is a complex job requiring new mathematical constructs and an immense amount of data. We also have developed tools to make the transmission system more forgiving of the kinds of disturbances that triggered the significant blackouts of the last two decades.

Component improvements will also help improve system reliability. Our research is helping to solve problems in electrochemical treeing and concentric neutral corrosion of underground residential distribution cables, which is particularly useful to California consumers where underground distribution is extensive. We have developed devices to protect the system from lightning, the major cause nationally of

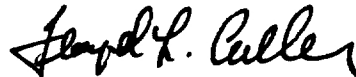
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distribution outages, and certainly important in the Sierras. We are working on the major causes of outages except one that apparently is important in California--motor vehicle collisions with powerline poles. Perhaps the new California drunk-driving law will help with this.

Service restoration and maintenance have not received much emphasis in our program because other work was deemed to be of higher priority. We have sponsored several projects to provide better maintenance tools and procedures. Additional work is planned in the next five years.

We would be interested in your comments on our program and would welcome an opportunity to brief you further on these efforts, as well as the overall EPRI program. As a result of his discussions with you at Aspen, Dwain Spencer has suggested that you might be receptive to such a meeting. Dick Balzhiser will be in touch with you to schedule such a meeting, and I am hopeful that your schedule will accommodate it, either here at EPRI or in San Francisco.

Very truly yours,



Floyd L. Culler
President

FLC:RWZ:vmw

cc: Advisory Council Members
R. E. Balzhiser
J. J. Dougherty