

STORM RESTORATION MANAGEMENT¹

by Donald S. Page

As electric utility "deregulation" evolves, reliability and quick *response* to power outage become a competitive advantage. This has been true for years. However, today the competition may be directly between systems. Who will your customer buy power from in his present location? Reliability may be the key decision factor. Now your line clearance program and effective storm response become even more significant factors.

Regulators are another vital concern in the operating environment associated with storm emergencies. State Public Utility Commissions have tremendous power to punish for real or imagined deficient response!

Operating in this unforgiving atmosphere, the starting point of your line clearance contractor response is their employee attitude. The utility customer is in a crisis, both economic and public relations. Service restoration, beginning with power for emergency facilities, requires fast pace, maximum effort and energy, and teamwork with overhead linemen. Attitudes that reflect a sense of urgency and commitment, combined with pre-crisis drill and preparation, determine effectiveness of contractor response.

Then, the equipment involved in response must be well maintained for typically longer-than-usual road travel AND for both safe and sustained operations.

The quality, capability, and experience of contractor supervision is another vital ingredient of effective storm response. Especially as restoration work stretches out and the immediate crisis diminishes, control and direction of this work force that is away from home gets tough and abuses can develop and accelerate.

Service restoration operations are also influenced by system factors, such as: characteristics of primary tree species, voltages, general construction and *conducting*, line location, in-house storm experience level, and occasionally strange local ordinances, and even more importantly by:

- 1) historical line clearance *budget* sufficiency and
- 2) specifications currently enforced for maintenance trimming.

The scope of each storm and the type impact differently. Hurricanes result in very different restoration conditions from ice or heavy snow (foliage on/off), or from heavy rain and high wind together.

This then is the all too familiar background for our industry's problem when tree-caused outages are geometrically multiplied by a serious storm impacting the electric and telephone delivery system.

Putting all these variables together provides a very complex matrix. However, the real bottom line from your operating view point is simpler, because storm weather forces are so powerful that no overhead plant can withstand them, sooner or later, you will need help from utility neighbors and their line clearance contractors.

Talk about stress, strain, and "being on the line", and into this crisis climate comes the responding line clearance contractor. Now there really is a premium on professionalism . . .

As I shift to the contractors storm response management when "foreign" tree crews are required, the whole process starts with your release. The electric industry has adjusted to Storm Emergency by a universal "one for all and all for one" policy. This concept of mutual assistance is the cornerstone of response, because it could happen to your system next!

Pre-crisis planning, training and drill (just as in tree or bucket rescue) go a long way toward insuring best-possible response. This is essential, because often the time lapse between storm mobilizations is long enough so that repeatability is lost, especially when combined with the change-out of personnel actually with battlefield experience. We reinvent the wheel over and over again and never progress down the learning curve.

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The solution is to document policy in detail and to develop check lists. These become day-to-day training materials, so that continuity is maintained and people get up to speed quickly and without critical omissions.

It also is important to identify and quantify potential restoration resources in advance, although in a wide-spread storm involving other utilities those numbers become very theoretical.

Then comes D-Day and we are all dumped into the barrel, utility customer and line clearance contractor. The first decision is damage assessment converted to crew requirements. Let me underscore one aspect of crew dispatch sometimes overlooked. Once crews are out working on home property maintenance trimming, "collection" is slow. Make decisions before 6:30 AM rather than after 7 AM.

The first strategy is realignment of contractor forces already at hand from all your regions or divisions. Then you supplement with "foreign" crews to reach the complement of resources estimated to be required. Now logistics and organization get complicated, and preplanning really pays off.

Thorough initial telephone orientation (use a check list) will expedite delivery. How many crews, what kind, how much supervision requested, and where are these forces to be delivered. Precise directions from major highway exits by number or other sign identification helps greatly, utility contact names and phone numbers, will insure over-the-road linkage, when and if needed, and quickest reporting-in on arrival.

Preparation for incoming crews requires arrangements for utilization of police to expedite travel, meals, sleeping, fueling and repairs, assignment of utility personnel as area guides, facility maps, and linkage during the work day to communicate work assignments and for general coordination.

If this was a perfect world, let me describe an ideal storm restoration scenario. The responding contractor will supply a rough ratio of one General Foreman to supervise 5 crews. Each General Foreman will start individual crews (no convoy delay) to converge on a common travel route with clothing for a week and clear information about the requesting utility's staging area location, contact names and phone numbers and about the contrac-

tor's own on-site storm center. The General Foreman will "sweep" behind these crews to insure an appropriate travel pace, to solve problems, and provide telephone linkage enroute and especially about an hour before estimated arrival to telephone-check destination instructions. He'll carry extra saws, extra hydraulic tools, O-rings, etc.

The utility staging area will be a restaurant where incoming line clearance crews can be fed and oriented before the work assignment begins:

- work schedule
- special system specifications and ground rules (trimming standards)
- who's in charge, where, and how to contact
- safety reminders
- meal arrangements
- sleeping arrangements

The so-called Miami Plan sets up a Storm Team of 6 line crews, 1 tree crew, and a local "bird-dog". This ratio will vary, but (usually) provides for constant radio contact, good night lighting, and speeds restoration progress. Otherwise, get area maps to each crew as soon as possible. Without this resource in hand from which to build a work plan, when the "bird-dog" goes off and says "wait for me", either there are long periods of frustrating dead time or the crew sets out on their own and loses the "bird-dog". However the tree crews are utilized, running trouble ticket's, at least at the initial stage of restoration, is very inefficient. Get the crew on a circuit patrol. Clear everything up the first time the crew is in that area.

Plan ahead how to utilize foreign supervision for your advantage (especially their feedback for operating improvements and an evolving assessment). Provide them updated situation background, so they can effectively interface with the general public as your representative. To save time and frustration, consider a short-term lease of portable mobile phones to supply contractor supervision who are not on a radio network.

From the contractor viewpoint, this supervisory task is to solve work and equipment problems and to insure communication, punctuality, proper paperwork, and behavior (reduce stress and frictions and maintain morale).

After the initial excitement and stress, you move

into a "production" phase where the allocation and use of expensive resources gets fine-tuned. Everything possible must be done to provide continuity of useful work even if it's maintenance trimming to fill what otherwise would be parking lot time.

There is considerable reward for crew members both financial from extended hours and psychic from the appreciation of individual property owners. However, as time and effort wear on, it makes good sense and positive work attitudes for the requesting utility to demonstrate concern for foreign crew welfare and off-work comfort and to

express appreciation of the help. Impact is considerable, even after-the-fact.

Finally, as soon after the dust has settled, provide for a thorough, open, no-holds-barred debriefing with your local contractor line clearance supervision. You'll get a lot of feed-back you don't want to hear, but it can profit you greatly in managing tree crews in the next storm emergency.

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Abstracts

DOWNER, J. and H. OHR. 1989. **Palm trees have problems, too.** *Grounds Maintenance* 24(4):94, 06, 100, 102.

Palms have many attributes that account for their extensive use in new California landscape projects. Yet palms, too, have disease, insect and other pest problems that diminish their landscape value. Pink rot is perhaps the most common disease of palms in California. The California fan palm is the most susceptible landscape palm. Diamond canker, also called diamond scale, is a common disease of California fan palms. *Fusarium* wilt is a fungal disease that attacks palms in the Phoenix genus. Root rots are common to landscape palms, but the presence of a single causal organism is rare. Although frost injury is devastating to palm foliage, most of the commonly planted landscape palms will endure all but the most extreme cold temperatures in coastal California climates.

KUTZ, F.W., P.H. WOOD and D.P. BOTTIMORE. 1989. **Monitoring your safety.** *American Nurseryman* 169(6):122-127.

Our society's technological advances have fostered the wide-spread use of chemicals and the increased release of chemical pollutants. Concern is growing over chemical use, both controlled and uncontrolled, that may pose potential and actual hazards to human health and the environment. A number of federal agencies monitor chemical exposure, tracking the frequency and concentration of pesticide residues in human beings and the environment. When federal agencies deem that there is widespread exposure to a pesticide that presents an unreasonable risk, they generally take action to limit the use of that pesticide. Monitoring continues to be important once a pesticide's use is limited or banned. Programs measure how residue levels change over time, indicating whether regulations have effectively reduced exposure. This article includes several graphs illustrating rapid declines in exposure levels for toxic chemicals that have been banned.