

Power of the People

By W. Marc Farmer, General Manager,
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Mother Nature Wins Again

While we had a pretty good reprieve in 2011, once again Mother Nature has reminded us who is in charge. The snow storm event started for us on Sunday, the 15th, when we rolled out our first crews to fix some small outages in the Hamlet and Necanicum areas. The problems continued throughout the day on Monday as the snow kept coming down and piling up. We had tree issues in the Elsie area and out to Camp 18 during the day, then things started to spread out into Moores Valley and Apiary Road.

I guess you can say that on Tuesday all heck broke loose, as the snow became wet, deep, and heavy. Outages spread throughout our system and we started contacting other utilities and contractors to bring in some additional crews to help us out. Normally, we have been able to immediately get help from our neighbors Clatskanie PUD, Columbia River PUD, and Forest Grove. This year, they were hit hard with snow damage, as well, so could not respond to our call until they were done getting their own systems back in service. Even electric cooperatives within a reasonable distance away who have helped us out in past storm events could not respond, as they were having snow, freezing rain, wind, and flooding issues themselves. We were fortunate, through our good working relationships, to be able to secure some contract crews before they were all taken by other utilities in Oregon and Washington who were also having major issues.

Starting on Tuesday we had all of our crews, contract crews, tree crews, and some neighboring crews working around the clock to assess damage and begin the arduous task of restoring power. We had outages throughout our 1,224 mile system, and the heavy snow was breaking limbs, trees, cross arms, and even a power pole. We were making some progress until just after midnight, when things went from bad to worse. We lost both the transmission line from Chapman to Vernonia and the transmission line from Timber to Vernonia, due to large trees from outside our right of way. The snow kept piling up and creating more tree problems, even overloading lines due to the sheer weight of it. We called in more crews, as we could tell this was going to be a long and difficult task, with outages continuing to expand throughout our entire service area.

When we have large outages, we go through a process of restoring power to the largest number of members first and working our way from there. We start with the most vital aspects of the power system, the substations and transmission lines, and work out from there to feeder lines, then distribution lines and finally individual tap lines to individual homes. With the transmission lines down, we had to redirect assets to getting them back up as a priority. The transmission line from Timber to Vernonia was the first priority, but just before we were finished repairing the line, BPA called to inform us that they had lost power to the Timber substation. This meant that even though we were ready to restore power to the Vernonia area by late morning, we had no power to the substation to deliver. Power was finally restored from BPA by early evening to the Timber substation.

Now, some education and information for our members, so that you can better understand why it takes time to restore power through the system. It is not as easy as just throwing a switch and having everyone back in service. In winter we must go through a process called a cold load pickup. When the system has been down for a while, it gets cold like everything else and must be heated back up. The substations are heated up first, then the transmission lines. The feeder lines that come out of the substations are third in the process, but can only be heated up in sections, in order to handle the huge loads that will be placed on them. When a section of line is energized and heated back up, all of the homes on that line immediately place load on the line. As members turn on lights, turn up heat, water heaters cycle on to heat up the water in the tanks, doing laundry and dishes, cooking, turning on the television and all of the other uses, it puts a tremendous, instant load all at once on the lines. If we turned up the whole system at once, the resulting instant load would overload the system and cause it to crash. Turning it up section by section allows us to heat the lines up, balance the load, and then bring on the next section in an organized manner that will keep the restored sections going instead of bringing it all back down. Doing it this way is why you see sections of town light up before others.

Another process we go through is to patrol each line and segment, before it is energized, to make sure that there are not any limbs or trees on the line, or any breaks in the line that would cause the line to go back out or burn it up. It takes time to patrol each line, so some shorter segments, or easier to see and patrol sections will come on quicker than others. For example, during this last storm we were asked why Anderson Park and Pebble Creek were restored last after the rest of

town was on. The Pebble Creek feeder line goes through and feeds Anderson Park and is the longest of the lines to patrol. It naturally takes longer, then, to patrol this line before it can be energized, so it comes on last of the feeder lines in the Vernonia substation. It was a good thing we did patrol it first, as there was a very large tree on the line, which, if

we had energized the line going across the river, would have burned through and gone down. To repair this line across the river would have taken many hours, leaving people on the line out for at least another day. Safety is another reason we patrol lines first, and the safety of our crews is paramount.

When all was said and done, we had brought in over ten crews to work with us and spent over \$700,000 to put it all back in service and repair the damage. We got the last members back on the following Sunday, but still had to bring in a contract crew from BPA with special equipment to finish repairing the Chapman to Vernonia transmission line, on Thursday the 26th. This will probably be declared a FEMA event for Columbia County, where we had the majority of the damage. In fact the Chapman area got hit the hardest.

We appreciate the patience and support that we receive from most of the members. We do all we humanly and safely can to restore power as quickly as possible. When it gets too bad, like this snowstorm, we spare no expense to bring in as much help as we can to help speed up the amount of work we can accomplish. At the end of the day, though, we are always at the mercy of Mother Nature, and remain deeply humbled by the powerful forces we face every winter from winds, snow, rains, and floods. We will always give members our best efforts to restore their power.



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