
BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

COMCAST CABLE COMMUNICATIONS,)
INC., a Pennsylvania Corporation,)
)
 Claimant,)
vs.)
)
PACIFICORP, dba UTAH POWER , an)
Oregon Corporation,)
)
 Respondent.)

Docket No. 03-035-28

REBUTTAL TESTIMONY
OF
MICHAEL T. HARRELSON, P.E.
COMCAST CABLE COMMUNICATIONS, LLC

July 14, 2004

1 **Q: Have you reviewed the initial testimony that PacifiCorp’s witnesses submitted on**
2 **July 2, 2004 in this proceeding?**

3 A: Yes. I have.

4 **Q: Did anything you saw in that testimony make you want to revise your initial**
5 **testimony?**

6 A: I do not wish to revise my fundamental conclusions and recommendations. However, I
7 now have even stronger concerns about PacifiCorp’s current and historical approach to
8 the pole permit application process and safety issues.

9 **Q: How have your concerns intensified?**

10 A: In essence, I believe that PacifiCorp is pursuing multiple and conflicting objectives.
11 Although PacifiCorp doesn’t come out and say this directly, PacifiCorp’s direct
12 testimony makes it clear to me that it is seeking to generate revenue from Comcast. It is
13 also clear to me that PacifiCorp is hoping to achieve this by blaming Comcast for
14 supposed unauthorized attachments and for what I perceive to be many trumped-up
15 safety charges. While PacifiCorp’s testimony appears at first glance to be rational and
16 matter-of-fact, I believe it advocates a harsh, cynical and ill-advised approach towards
17 Comcast and joint use. Improving communications, the pole attachment process, and
18 the “safety” attributes of its pole plant are all great objectives. But PacifiCorp simply

1 cannot accomplish this by creating a system of punishment and blame that unfairly
2 allocates costs to third-party attachers.

3 **Q: What are your overall impressions of the PacifiCorp testimony as it pertains to the**
4 **matters Comcast has asked you to investigate?**

5 A: In my opinion, PacifiCorp's testimony is an attempt to justify, after the fact, a business
6 plan PacifiCorp decided to pursue a long time ago. With respect to the supposed
7 unauthorized attachments, PacifiCorp relies very heavily on a comparison between the
8 most recent audit results, and the results of what it has claimed was its "base line" audit
9 conducted around 1997 and 1998. However, it does not appear to me that the
10 1997/1998 Audit was ever intended to be the same type of audit as the 2002/2003 Audit.
11 Comparing the results of the two audits is therefore like comparing apples to oranges.

12 PacifiCorp also relies very heavily on the expired contract which sets forth a rather
13 detailed permit application process. It is important to remember that not only is the
14 agreement expired, but that PacifiCorp cancelled it. There are a few other things that we
15 need to keep in mind, including the fact that the expired agreement was in place only
16 from 1999-2002, long after Comcast had completed the initial construction of its
17 systems. I find it unlikely that Comcast submitted very many new attachment
18 applications under those procedures. Additionally, although Comcast currently owns
19 the system in question, many of the attachments were put in place by its predecessors

1 under different contracts. Further, as is the case today, there may have been periods of
2 time when no contracts were in place. But even if one assumes that there were many
3 different contracts and that they had identical permit application language that does not
4 settle the question of whether PacifiCorp is acting reasonably under these
5 circumstances.

6 In my opinion the evidence that both Comcast and PacifiCorp presented strongly
7 suggests that the parties' historical permitting practices were very different than those
8 set forth in the most recent (but expired) contract. For example, at page 26 in Ms. Fitz
9 Gerald's direct testimony, she discusses a number of trips she made to the field to
10 instruct "PacifiCorp field personnel on the proper permitting procedures to be followed
11 in accordance with PacifiCorp standard pole attachment contracts." To me, this
12 suggests that Ms. Fitz Gerald either was implementing new permitting procedures or
13 was trying to get wayward field personnel for PacifiCorp to conform to centralized
14 practices. If the process was already in place and being followed, she would not have
15 made those trips.

16 **Q: Do you have an opinion on the changes PacifiCorp made to its permit procedures**
17 **in February 2004?**

18 A: First, it appears to me that instead of seeking Comcast's input on changes to the permit
19 process, PacifiCorp unilaterally implemented new requirements. In my opinion,

1 PacifiCorp is requiring an unreasonable amount of detail about Comcast's facilities as
2 part a of the new permit application process. This information is usually only useful for
3 performing a full-scale loading study on each pole and span. As I explained in my
4 direct testimony, for the overwhelming majority of the poles to which Comcast seeks to
5 attach, this level of analysis will be unnecessary.

6 More important, this information is useless unless PacifiCorp also has this level of detail
7 regarding each of the other attachers, including telephone facilities and its own power
8 facilities, and *then* has the capabilities to go out and use all this data to perform these
9 loading calculations. However, as I mentioned in my direct testimony, I recall that
10 PacifiCorp's James Coppedge stated in his deposition testimony that PacifiCorp had not
11 even performed a single loading calculation.

12 To reiterate my direct testimony, I see no reasonable engineering purpose for these new
13 requirements. In my experience, this level of detail is unprecedented in the industry for
14 power distribution poles. To me, these new requirements appear to be calculated to
15 discourage a party from applying for access to PacifiCorp poles rather than facilitating
16 it.

17 **Q: Should PacifiCorp be able to change its established joint use practices unilaterally?**

1 A: Established practices can be changed if there is good reason to change them, if the
2 alternative or new procedures are fair, and if they are reasonably documented and
3 followed. However, there is no evidence of these factors in this case.

4 **Q: Could it not be that Comcast just bought systems from bad actors and that they**
5 **are now in the position of making amends for others' past transgressions?**

6 A: I believe that is what PacifiCorp wants the Commission to believe, however, I am not at
7 all convinced. It is clear to me that PacifiCorp was aware of and even condoned the
8 informal permitting practices for years and did not decide to formalize the process and
9 conduct audits to enforce the process until recently.

10 It is not unreasonable to suggest that PacifiCorp sees Comcast's upgrade as an
11 opportunity to remake all its processes, refresh and upgrade its databases, to clean up its
12 pole plant, and financially profit, at Comcast's expense. Generally, I do not like to
13 assign blame, but in my opinion, PacifiCorp's approach is a huge factor in the problems
14 here. I think that PacifiCorp's willingness to assume that all problems are Comcast's
15 fault shows that PacifiCorp is not serious about coming to grips with the situation.

16 **Q: Can you be more specific?**

17 **A:** Yes. The unauthorized attachment aspects of PacifiCorp's case still do not make sense
18 to me. For example, it appears that PacifiCorp may be claiming that as of 1999, when it

1 completed its last survey that it had an accurate count of all the poles that Comcast and
2 its predecessors were attached to. It says now that of the areas it has surveyed so far,
3 there are an additional 35,000 poles for which it has no records. Therefore, PacifiCorp
4 says that Comcast has attached to 35,000 new poles since the last survey. I understand
5 that Comcast is on just over 100,000 PacifiCorp poles today. For PacifiCorp's position
6 to make sense, Comcast would have had to have built about 1/3 of its system in the five
7 years between the 1997/1998 Audit and the 2002/2003 Audit. That does not correspond
8 with the history of the Comcast's properties in Utah, or with the buildout of cable
9 networks generally. Specifically in Utah, it is my understanding that, with the exception
10 of line extensions to new residential areas, all buildout was largely completed in the late
11 1980's or early 1990's.

12 **Q: This sounds as though you believe that PacifiCorp is taking a very one-sided**
13 **approach against Comcast. Is that the case?**

14 A: Absolutely. Both with respect to pole procedures and safety issues, PacifiCorp is
15 making enormous leaps in logic that I do not believe have any basis in fact. For
16 example, PacifiCorp appears to be saying, essentially: "we required paper permits, but
17 there are not any, therefore Comcast has been stealing from us and we are entitled to
18 \$250 per attachment." However, as I stated in my direct testimony, I believe that
19 Comcast and its predecessors were following whatever process was in place at any
20 given point in time.

1 In addition, PacifiCorp is saying: “Look at all these violations involving
2 communications facilities. These were created by the cable operator and the cable
3 operator must correct all these violations and pay a fine for creating them!” In my
4 opinion, this is an irresponsible and fundamentally dishonest position to take. Many of
5 the legitimate violations that I have seen are not even Comcast’s responsibility. I have
6 seen a number of violations caused by PacifiCorp building down on joint-use poles
7 adding electric facilities in violation years after cable was already there. If this process
8 was fair, Comcast would be allowed to fine Pacificorp for building violations in the
9 communications workers safety zone (“CWSZ”).

10 **Q: Please explain your concerns about the punitive aspects of PacifiCorp’s actions.**

11 A: As I have said, it appears to me that PacifiCorp’s strategy is to blame Comcast for
12 PacifiCorp’s long-standing neglect of its poles in Utah and is trying to use what
13 PacifiCorp apparently believes are Comcast’s “deep pockets” to pay for, in Corey Fitz
14 Gerald’s words, “state-of-the-art and industry leading” technologies and programs.

15 **Q: Can you please provide some examples that support your view?**

16 A: Certainly. In my opinion, the key to understanding PacifiCorp’s approach is to look
17 very closely both at the testimony and exhibits it has provided so far. These materials
18 provide a wealth of information indicating that PacifiCorp (and Osmose) were training
19 their people specifically to find and track alleged Comcast violations, but not

1 PacifiCorp's violations. In addition, these materials also show basic misunderstandings
2 of the NESC on a number of points. I believe this demonstrates the unreasonableness of
3 PacifiCorp's approach here.

4 For example, James Coppedge, at page 4 of his testimony, states that PacifiCorp's
5 contractors were required to attend a three-week pass/fail class that included NESC
6 training. He attached a copy of the training manual apparently used for that class to his
7 testimony. I reviewed the training manual carefully and noted, first, that of the 140
8 pages that comprised that training manual, only 45 pages were devoted to understanding
9 the NESC rules and PacifiCorp's distribution construction standards. But even in those
10 45 pages, I found a number of problems in the training manual. If these incorrect
11 applications of the code were taught to PacifiCorp's and Osmose's people, and these
12 people, in return, were making judgments about whether or not Comcast was in
13 violation of the NESC with minimal and incorrect training, there are very serious
14 problems, in my opinion, with the integrity of the PacifiCorp audit.

15 Specifically, page PC 6149 of Mr. Coppedge's Exhibit PC 2.3 includes the quote
16 "communications worker's head has potential to make contact with energized power
17 supply cables." However, there is no rule in the NESC that says that a worker may not
18 work within the communications worker safety zone as the page implies. NESC Table
19 431-1 and Rule 431 state only that communications workers are to "avoid contact" with
20 electric conductors ranging from 51 volts to 300 volts. I also note that the worker in the

1 photograph at PC 6149 should be wearing an insulating hard hat. He is not, and this
2 oversight is not mentioned. Based on the direct testimony submitted so far, I believe
3 that PacifiCorp is taking an incorrect view of what the NESC requires.

4 In referring to two photographs included as Exhibit PC 4.1 to his direct testimony, Brian
5 Lund testifies to a “gross violation of the safety space.” The two photographs show
6 communications workers with part of their bodies above the cable tv conductors. I think
7 this reveals a lack of understanding on Mr. Lund’s part about the applicable safety
8 codes. Neither the NESC nor OSHA rule 1910.268 has any rule addressing a violation
9 of the CWSZ. In fact, this term (CWSZ) is completely new in the 2002 edition of the
10 NESC.

11 Second, the pole at PC 6149 is rife with electric safety violations. For example, you can
12 clearly see that the electric service weather head and the long drip loops underneath the
13 transformer are right in the middle of the communications zone. You can see other
14 examples of this in PC 6150, PC 6152 and PC 6162. I am not certain whether this pole
15 or the other poles in these Osmose materials are PacifiCorp poles, but I saw many
16 examples of PacifiCorp poles in Salt Lake City with identical NESC violations. I took
17 photographs of PacifiCorp plant that illustrate this common occurrence. They are
18 attached as photos 7 and 8 to the appendix of this rebuttal testimony.

19 **Q: Are there other examples of improper training in PacifiCorp’s materials?**

1 A: Yes. The photo at PC 6150 is another good example. It appears to depict two cable
2 television drops attached to the CATV cable and above that (at the lower arrow) what
3 may be two telephone drops. This page points out that there should be 40 inches
4 between power facilities and communications facilities, and in this photo this clearance
5 does not appear to have been met. There are a number of points to be made here.

6 First, it is clear both from PacifiCorp's initial testimony and from my review of the
7 "safety" output from the Osmose survey that responsibility, or blame, for this violation
8 would clearly be assigned to the communications attacher (although it appears that the
9 telephone wire and not the cable attachment is in violation). Based on the evidence and
10 testimony PacifiCorp has presented in this case, it appears that PacifiCorp will require
11 the communications company to pay: 1) for the inspection; 2) for the make-ready
12 engineering to fix the violation; 3) for an electric company employee to be on site when
13 the repair work is being conducted; 4) for the post-inspection; and 5) a fine for the
14 violation. All of this is for a violation the communications company may not even have
15 created. It is important to note that NESC Rule 235 sets forth what the vertical
16 clearances between the wires should be, but it does not assign blame or dictate who
17 should be responsible. Responsibility can only be assessed by determining who actually
18 created the physical violation--*i.e.*, who installed what facilities last.

19 Second, there is also a non-trivial electric violation here, separate and apart from the
20 issues of whether communications or power installed facilities first and who actually

1 created the separation issue. The electric violation is that the drip loops at the secondary
2 are excessively long. This indicates a lack of proper training, installation workmanship
3 and quality control by the power company. I saw plenty of violations just like this when
4 conducting my on-site investigations in Salt Lake City and have provided a couple of
5 examples at Photos 7 and 8.

6 I also found PC 6152 at Exhibit PC 2.3 to be a very interesting illustration of how
7 PacifiCorp and Osmose people received training that, at its best, is biased toward
8 assigning blame to communications attachers, and, at its worst, is plain wrong.

9 **Q: Please explain.**

10 A: This photo notes that separation distance should be 40 inches. It depicts an electric
11 secondary riser fastened to the pole and riser conduit. As soon as the conduit ends, the
12 secondary flares out into a long loop out from the pole. The explanation notes that the
13 “violation could have been avoided if the conduit had been extended a minimum of 40
14 inches above communications.” This is a correct statement, but to be more clear, the
15 explanation should have stated that the *electric* conduit should have been extended.
16 Fixing this obvious electric violation would clear up the problem, but under the
17 PacifiCorp approach, Comcast would almost certainly be ordered to move its plant
18 down and pay PacifiCorp to correct the violation created by PacifiCorp, or go
19 underground.

1 While we're at it, PC 6153 is worth looking at as well because it shows that the Osmose
2 training manual is wrong. The photo depicts what Osmose calls a clearance violation
3 between electric power and communication and cites NESC Rule 235C1 and Table 235-
4 5. The problem is that this photo does not show a violation and Osmose has cited the
5 wrong rule. The rule that actually applies to this photo is 239G1 not 235C1. Rule
6 239G1 requires guarding of certain supply (power) conductors attached to the pole and
7 passing through the communications space on the pole. However, Exception 1 of that
8 same rule (239G1) provides that the guarding may be omitted for supply cables meeting
9 Rule 230C1. The supply cables depicted in PC 6153 meet the Rule 230C1 requirement
10 and do not require guarding. While this is clearly not a code violation, Osmose fielders
11 were trained to identify it as one, and as we have previously discussed, responsibility or
12 blame for this non-violation would likely be assigned to Comcast.

13 PC 6157 contains a rare instance of where an electric violation is correctly identified in
14 the training manual—specifically; an electric secondary wire was improperly installed
15 in the communications worker safety zone to power a street light. The training material
16 does not say to charge this violation to PacifiCorp not Comcast. This is another
17 example of the biased slant to the training that these workers received. I witnessed
18 many, many of these kinds of violations during my field investigation of PacifiCorp
19 poles in Salt Lake City.

1 It is also worth pointing out that this page of the Osmose training manual is correct in
2 noting that the NESC has evolved to a point that there can be as little as 12 inches (3
3 inches if covered with insulating material) between communications and a 120 or 240
4 volt secondary as it enters a grounded street light. Nonetheless, PacifiCorp appears
5 almost apoplectic when it sees a communications worker within 40 inches of electric. I
6 believe that is based on a fundamental misunderstanding of the NESC and acceptable
7 work practices.

8 Pages 6161 and 6162 show a technique that is rare in the electric utility industry, but
9 commonplace in Salt Lake City. It is used by the power company to avoid setting an
10 additional pole, but violates NESC Rule 235C2b every time a 30-inch separation from
11 communications is not maintained. The notes on these sheets indicate that there are
12 violations with the cable facilities because there are less than 30 inches of separation.
13 These are clearly electric violations and responsibility should not be assigned to the
14 cable operator.

15 One other place where the training materials were both garbled and wrong was at pages
16 6129 through 6131. Even though PacifiCorp omitted almost 60 pages of exhibits from
17 the material associated with Mr. Coppedge's testimony (every other page from 6100 to
18 6148 and 6163 to 6233 were omitted), I was able to find a number of relevant pages in
19 the materials that PacifiCorp produced in discovery. Pages 6129-6131 relate to the
20 FastGate™ user's guide and contain data entry instructions concerning cable

1 attachments. Item 3 at the top of page PC 6131 states that “[a]ll cables have a 12”
2 separation between cables other telecommunications cables (sic). NECS (sic) rule
3 235C1, 235H.” This is the only reference that I found in the Osmose training materials
4 that attempts to identify a less-than 12” separation between cables at the pole to be a
5 violation, and, as one can clearly see, the instructions are garbled. Moreover, the next
6 line of this instruction refers to measurements for road clearance. This is puzzling,
7 because road clearance has nothing to do with 12” at-pole separation. Finally, NESC
8 rule 235C1 has nothing to do with 12” separation issues. This example, along with the
9 others that I have cited, does not inspire confidence in the training received by Osmose’s
10 people or suggest that Comcast was treated fairly.

11 There are a number of other inaccuracies that I discovered in reviewing the Osmose and
12 PacifiCorp materials that I have not specifically addressed here. The problems I *have*
13 presented merely represent a sample of the issues, problems and inaccuracies in the
14 training materials.

15 Finally, one of the things that the Osmose survey produced was a digital photo of
16 virtually every PacifiCorp distribution pole. That means that PacifiCorp now has photos
17 of all its violations and that under NESC Rule 012, it is under an affirmative obligation
18 to correct those violations when it has notice of them. I am not suggesting that it is
19 sound engineering practice for the utility to immediately go out and make 100% of its
20 plant 100% compliant. I only mean to point out that it has created a digital record and is

1 now on notice as to the state of its plant and must factor itself into any clean-up plan.

2 Again, I believe that this needs to be done cooperatively with buy-in from all joint users.

3 **Q: Were 12-inch separations between communications equipment mentioned as a**
4 **code violation in the Osmose training materials and PacifiCorp construction**
5 **standards?**

6 A: Only in that one place that I mentioned just a moment ago. This is ironic considering
7 that Comcast has now been notified of thousands of such “violations.” As I mentioned
8 in my direct testimony, the 12-inch separation rule was entirely new to the 2002 NESC
9 (Rule 235.H.1.) Additionally, it is not a mandatory rule, but a normative guide line (it
10 says “should” not “shall”) and specifically allows for agreements between
11 communications companies for lesser clearance. Moreover, NESC Rule 13.B.2.
12 expressly grandfathers all attachments made before the effective date of the 2002 code.
13 In short, all of these “violations” are not violations at all.

14 **Q: What are your conclusions from this analysis?**

15 A: There are several. First, that it seems that Osmose did not have much training in the
16 NESC and in appropriately identifying safety violations, because only a fraction of the
17 training materials were devoted to the NESC. Second, those training materials had a
18 number of important errors, that one can only assume (perhaps with others) were passed
19 onto the Osmose “fielders” and PacifiCorp field personnel and ultimately to the “safety”

1 reports that Comcast has received. On this basis, it is my opinion that the Osmose
2 fielders and PacifiCorp personnel were ill-prepared to do a fair or accurate safety audit.
3 Nonetheless, the fielders' work is clearly the foundation for what may end up being
4 many, many millions of dollars of plant clean-up and fines. Third, these errors, and
5 indeed the whole PacifiCorp/Osmose approach, is to find communications violations
6 and to lay blame on communications attachers, rather than looking for a cooperative
7 framework for resolving these issues.

8 **Q: You mentioned that you noticed some PacifiCorp electric violations when you**
9 **performed your investigations, correct?**

10 A: Yes. I saw many and could produce quite a thick book of them if necessary, but as I
11 stated before, assigning blame and assessing penalties is completely counter-productive.
12 That is the upshot of my testimony and my opinion both with respect to how joint use of
13 aerial support structures should be conducted.

14 However, I have gone to some length to describe errors in PacifiCorp's training
15 materials and standards and how these errors could take shape as violations in the field.
16 The violations that I have found and photographed are good illustrations of improper
17 training, poor workmanship, poor post-inspections or poor quality control on
18 PacifiCorp's part. To the extent that PacifiCorp is working on improving these aspects
19 of its operations, that is commendable. However, I am very concerned that there is

1 simply too much concerted effort here to lay the blame on Comcast. In my opinion, as
2 long as this element is present, PacifiCorp will have a ready excuse *not* to properly
3 address its own problems directly.

4 **Q: Can you cite a few examples?**

5 A: Certainly. Earlier I mentioned the example of the electric secondary dropping too far
6 into the communications space. In my initial testimony I mentioned this issue, as well
7 as an instance in which the power company tied off the Comcast cable with rope.
8 Attached to this testimony as Appendix 1, is a set of photographs which document a
9 wide variety of unsafe practices and which reveal—in my opinion—a poor
10 understanding of the NESC, deficient training and indifference or hostility to joint users.
11 Hopefully this more detailed discussion of some specific, common examples will help
12 lead to better understanding and a reasonable resolution here.

13 **Q: Did you personally take all the photographs appearing in Appendix 1?**

14 A: Yes.

15 **Q: Did anyone accompany you when you took these photographs?**

16 A: Yes. Rodney Bell of Comcast. Mr. Bell pointed me to a few specific locations—such
17 as where PacifiCorp tied up Comcast's facilities with rope (Photo 1) or where

1 PacifiCorp forced Comcast underground because it refused to re-sag its lines. (Photos 5
2 and 6). But the vast majority of the photos presented here are those I spotted myself.

3 **Q: In a number of places you have indicated that PacifiCorp created violations with**
4 **respect to Comcast or communications facilities, correct?**

5 A: Yes, that's right.

6 **Q: On what do you base these statements?**

7 A: On my personal observations, and my examination of Comcast personnel, especially
8 Rodney Bell, which indicated that the locations we investigated had been served by
9 cable for many, many years and the new electric facilities were actually installed after
10 cable was built.

11 **Q: Does this conclude your rebuttal testimony?**

12 A: Yes it does.