

MEMORANDUM

To: Missouri Public Service Commission Official Case File
Case No. TW-2012-0112

From: William Voight
Supervisor, Telecommunications Rates and Tariffs

Subject: Staff's Status Report and Recommendation for Comment Period

Date: March 29, 2013

Synopsis:

This report and recommendation is a compilation of telephone call completion events that have occurred both in Missouri and nationally since 2011. In particular, this Report provides a summary of the Telecommunications Staff's (Staff's) work in analyzing the results of a highly confidential Missouri-specific long-distance calling study which demonstrates the presence of circuitous routing and reorigination of rural long-distance telephone traffic involving a number of long-distance telephone companies in Missouri. The Report contains a brief status report on current FCC Rulemaking activities, as well as a recent Consent Decree involving the FCC Enforcement Bureau. Lastly, this Report concludes with a Staff recommendation for the MoPSC to request industry input on what further steps the MoPSC needs to take in regard to call completion problems in Missouri.

Background:

On November 19, 2011, the Missouri Public Service Commission (MoPSC or Commission) initiated action on behalf of two groups of small rural incumbent local exchange telephone companies which had asked the Commission to examine and investigate telephone call routing and call completion problems in Missouri. As the Commission's actions were, and continue to be, representative of a working investigation (and not those of a contested case proceeding), the public has, and continues to be, welcome to submit comments by mail, electronic filing (EFIS) or by sending e-mails to laura.bloch@psc.mo.gov. The Commission also directed case notification be given to all telecommunications companies certificated to provide service in Missouri.

To begin the investigation, the Commission directed and assigned its Staff as leader of a working group to investigate and file reports beginning in early 2012. As an initial matter, on November 7, 2011, the Staff conducted a workshop <http://psc.mo.gov/VideoDetail.aspx?Id=1241> which was attended by 35 staff and industry representatives. The workshop featured a panel of industry experts who made presentations and responded to questions on issues and problems involving call completion (which may also sometimes be referred to as "call gapping" or simply, "call blocking"). The MoPSC workshop included industry members who had also participated in a similar call completion workshop denoted "Rural Call Completion Task Force Workshop" <http://www.fcc.gov/events/rural-call-completion-workshop> conducted by the Federal Communications Commission (FCC) on October 18, 2011.

Following the MoPSC workshop, comments were received and entered into the Record by the Missouri Small Telephone Company Group (STCG), CenturyLink, the Missouri Independent Telephone Company Group (MITG), and AT&T Missouri (AT&T).

Since commencing its investigation and conducting the initial workshop, Staff has continued to gather additional information, engage in complaint monitoring activity, and monitor developments regionally, nationally and locally.

The problems identified at the Missouri and FCC Workshops, as well as industry and customer provided feedback, are described both from the standpoint of end-users and from a network perspective as follows:

The Problem from an End-users Perspective:

Callers who make originating long-distance calls (i.e., those dialing a telephone number) to known working telephone numbers experience various problems with their calls being delivered including hearing nothing but “dead air,” audible ringing tones on the calling party’s end when the called party’s telephone never rings at all,¹ false busy signals, inaccurate recorded announcements, and the inability of one or both parties to hear the other when the call does go through. In short, customers expecting to receive telephone calls are not receiving the calls.

This problem affects residential customers and business customers alike. The problem is particularly pronounced when rural families are cut off from their relatives, and when anchor institutions and enterprise and small businesses suffer a loss of business due to call termination and service quality problems. For example, problems have been reported in the medical community, such as with attempts to transmit medical images and other telemedicine applications at rural health-care clinics and hospitals.² In a situation particularly troublesome in Missouri, the problem can also affect the reliability of emergency telephone service (i.e., 9-1-1 dialing).³

¹ FCC 13-18; WC Docket 13-39. Re: *In the Matter of Rural Call Completion*, Notice of Proposed Rulemaking; Released February 7, 2013; Paragraph 39 and Footnote 62. This situation may also be referred to as “false audible ringing”. It is a relatively new phenomenon, and is brought about when the long-distance caller hears prolonged ringing – and so finally hangs up – before the telephone he called has rung at all. A long-distance telephone company may do this to mask the silence that would otherwise be heard by the caller during excessive call setup time. Excessive call setup can occur, for example, because the originating long-distance provider or least cost routing company is sequentially searching through the routing alternatives offered by “intermediate” long-distance providers.

² FCC Rural Call Completion Workshop; Oct. 18, 2011. Comments of Mr. Richard Hamilton, CEO of Harrison County Community Hospital, Bethany, Missouri, explaining the importance of electronic transmission of electrocardiograms and other clinical data from his health care facility to cardiologists and other medical professionals located in Kansas City and St. Joseph, Missouri and Des Moines, Iowa. Mr. Hamilton described instances whereby recognized standards of health care delivery were jeopardized when rural telecommunications services were disrupted, such as when callers hear nothing but “dead air” and nothing happens... “just silence.”

³ *Id.* Comments of Mr. Wendel Myers, General Manager of Grand River Mutual Telephone Corporation of Princeton, Missouri, explaining the use of “digit substitution” to Jeff Goldthorp, FCC Associate Chief of Public Safety and Homeland Security. Not all Missouri residents have access to “Enhanced” 9-1-1. Some 14 Missouri counties have access only to “Basic” 9-1-1, and must rely on the PSTN for both wireless and

Rural telecommunications trade associations note that the problem is likely underreported because the parties called are likely not informed of all the instances when calls have failed to reach them and may not always report those that they do discover.⁴ These rural associations state that 80 percent of rural carriers responding to one survey reported problems, and that as of November 2012, call completion problems to rural areas were continuing at an alarming rate.⁵

The Problem from a Network Perspective:

Rural telephone companies continue to report instances of delayed incoming calls, and calls that are never completed, of poor quality, or lack accurate Caller Identification information. Missouri-specific network test results confirm unacceptable levels and instances of circuitous routing and falsification of Caller Identification parameters. Re-origination of intrastate traffic as interstate traffic by least-cost routing companies⁶ leads to unacceptable losses of revenue. Moreover, misrouting and mislabeling of telecommunications traffic degrades overall network reliability. As the number of providers handling a call increases, there is the potential for lengthier call setup delay and other impairments. Troubleshooting may also prove more difficult.⁷

Countless hours have been spent troubleshooting problems that have nothing to do with a rural exchange carrier's network. Sometimes call routing failures are corrected only to see the same problem reappear weeks or even days later. Rural carriers unnecessarily suffer harm to their reputation.⁸

One commentator has stated that rather than refer to the situation as a "Rural Call Completion Problem" the problem should more aptly be referred to as the "Originating Carriers Service Quality Problem" because originating [long-distance] carriers are not taking responsibility to deliver quality service to their customers. These practices result in rural local exchange carriers being vilified because originating long-distance carriers deflect the blame for service problems to rural LECs. The commentator stated that the FCC's workshop was inappropriately named the Rural Call Completion Workshop

landline emergency telephone service functionality. Similar public safety concerns were expressed by Mr. Denny Law, Golden West Telecommunications, who described how call completion problems have negatively affected "reverse 9-1-1" in South Dakota.

⁴ FCC 13-18; WC Docket No. 13-39. *In the Matter of Rural Call Completion*. Notice of Proposed Rulemaking, Released February 7, 2013. Footnote 13

⁵ *Id.*, Paragraph 5.

⁶ *Id.*, Paragraph 6 and *Supra*, note 18, explaining that least-cost routing companies are sometimes also referred to as "Intermediate Providers" and citing letters to the FCC staff which indicate that these companies offer terminating services at low rates, and some least-cost routing companies may provide inferior service for a low rate. Here, Staff uses the term as defined in the FCC's *Transformation Order*: "[a]ny entity that carries or processes traffic that traverses or will traverse the PSTN at any point insofar as that entity neither originates nor terminates that traffic." See *USF/ICC Transformation Order*, para. 719-720.

⁷ *Supra*, note 57.

⁸ FCC Rural Call Completion Workshop; Oct. 18, 2011. Comments of Mr. Robert Gnapp, National Exchange Carriers Association.

because the problem has nothing to do with the ability of rural carriers to complete telephone calls.⁹

National Activity:

Call termination problems are a serious and widespread problem throughout much of the United States.¹⁰ Staff of the Missouri Commission has stayed informed through the NARUC Telecommunications Staff Subcommittee. Five current or former Missouri Commissioners have signed letters to FCC Chairman Genachowski. Missouri U.S. Senators McCaskill and Blunt have expressed serious concerns to the FCC. In response, FCC Chairman Genachowski has responded to these inquiries expressing his full commitment to resolving the problem, and holding the appropriate parties responsible. In his statements he indicated the FCC is working closely with state commissions although thus far, the Missouri Commission Staff has been completing its investigation without input from the FCC.

In previous action (concerning, in part, blocking of interstate traffic in Iowa), the FCC stated that carriers are prohibited from blocking, choking, reducing, or restricting traffic in any way, including to avoid termination charges.¹¹ As early as 2007, the Wireline Competition Bureau issued a declaratory ruling to clarify that no carrier may block, choke, reduce, or restrict traffic in any way.¹²

In its November 2011 Order reforming intercarrier compensation and the Universal Service Fund, the FCC emphasized its longstanding prohibition on call blocking. The FCC also made clear that the general prohibition on call blocking by carriers applies to VoIP-PSTN traffic (Voice over Internet Protocol to Public Switched Telecommunications Network) and proclaimed a prohibition on call blocking by providers of interconnected VoIP services and providers of “one-way” VoIP services.¹³

In February, 2012, the Wireline Competition Bureau issued a declaratory ruling to clarify the scope of the FCC’s prohibition on blocking, choking, reducing, or restricting telephone traffic.¹⁴ The FCC has also established a web-based complaint system <http://www.fcc.gov/encyclopedia/problems-long-distance-or-wireless-calling-rural-areas> and dedicated email referral process to facilitate the ability of rural customers and carriers to inform the FCC about call completion problems.¹⁵ During the three month period September through November 2012, the FCC received informal complaints concerning more than 500 rural call completion problems.¹⁶

⁹ *Id.*; Comments of Mr. Fritz Hendricks, Onvoy Voice Services.

¹⁰ FCC 13-18; WC Docket No. 13-39. *In the Matter of Rural Call Completion*. Notice of Proposed Rulemaking, Released February 7, 2013; Footnote 9 citing a *September 2011 NARUC Letter* at 1 (noting that “[o]ne hundred and seventy six rural incumbent local exchange companies in 35 States have reported call termination issues for both voice calls and faxes”).

¹¹ *Id.* Paragraph 7,

¹² *Id.* Paragraph 7

¹³ *Id.* Paragraph 9.

¹⁴ *Id.* Paragraph 10

¹⁵ *Id.* Paragraph 11

¹⁶ *Supra*, note 34

On February 7, 2013, the FCC proposed a set of limited rules in an attempt to address the call completion problems. The FCC currently seeks comment on its proposed rules, which establish a reporting and data retention requirement that would allow the FCC to review certain long-distance call performance data.¹⁷ The proposed rules contain certain safe harbor provisions excluding certain carriers from reporting requirements, and are designed to “help the [FCC] monitor originating providers’ call-completion performance and ensure that telephone service to rural consumers is as reliable as service to the rest of the country.”¹⁸

The FCC also proposes a ring signaling integrity rule which would attempt to address the practice of causing ring-back tone to the calling party before (if not in lieu of) ringing actually occurs on the called party’s line.¹⁹ An example of this practice was described to the FCC’s Wireline Competition Bureau by Steven Thomas, Counsel for Transcom Enhanced Services Inc. thusly:

In an effort to try to keep calling parties on the line while the extended attempt to secure a through connection proceeds, a provider might choose to insert a self-generated RBT [Ring Back Tone] before the actual receipt of the required signaling messages (ISDN Alerting message or SS7 ACM) from the terminating office. If the call ends up not successfully completing (and actual RBT does not come) the provider would then be forced to stop RBT and *abandon the call attempt* (emphasis added).^{20 21}

State and Local Activity:

In 2011, the Staff sent data requests to all local voice service providers in Missouri seeking information on the extent of call completion problems occurring in Missouri. The results of those data inquiries indicate that only small rural incumbent local exchange carriers in Missouri have end-user customers experiencing call completion problems. Other providers, such as AT&T Missouri and CenturyLink, reported no problems with their users’ ability to receive long-distance calls. Likewise, no competitive local exchange carrier reported knowledge of its end-users’ ability to receive long-distance calls. These data responses are consistent with results of other Staff analysis, such as those of customer trouble reports and industry consultations.

¹⁷ *Id.* Paragraph 38; As stated: “NARUC has argued, and we agree, that there is a need to limit the harmful effect of these rural call completion problems on consumers in the near term. Accordingly, we propose these rules to provide prompt relief to rural consumers who are receiving inferior telephone service.”

¹⁸ *Id.* Paragraph 13.

¹⁹ *Id.* Paragraph’s 40 – 42. To the extent its rules attempt to encompass VoIP services, the FCC invokes its ancillary authority over information services. The FCC’s Order also references the Alliance for Telecommunications Industry Solutions - an organization whose membership is voluntary. As stated: “This proposal would codify a widely accepted industry practice that has in the past proven effective. We expect that the proposed rule will improve the ability to identify the provider responsible for service failures, without imposing unduly burdensome costs.”

²⁰ *Supra*; Note 63

²¹ Transcom is currently before the MoPSC in a Staff complaint: Case No. TC-2013-0194; *Re: MoPSC Staff, Complainant, v. Halo Wireless, Inc. and Transcom Enhanced Services, Inc.*

Staff filed Status Reports to the case file on January 6th and August 10th, 2012. At the November 2011 Staff workshop, Staff Counsel provided the industry representatives its legal analysis which, among other matters, concluded that telecommunications companies and Interconnected Voice over Internet Protocol companies providing only “wholesale” or “backbone” services are required to be certificated or registered with the MoPSC, and that all companies have a duty to provide non-discriminatory services.

In recent certificate application orders, the MoPSC has imposed additional conditions requiring new voice service certificate holders to undertake all necessary measures to ensure their contracts with underlying carriers do not contain provisions preventing delivery of traffic to any telephone exchange area of Missouri. Such measures include but are not limited to:

- 1) Prevention of call blocking and/or call gapping based on the cost of traffic termination,
- 2) Preventing the alteration or stripping of Calling Party Number identification, and
- 3) Ensuring sufficient network capacity exists to process all traffic according to industry accepted practices.

Most recently (February, 2013) Staff conducted site visits and received comments from officials at Miller and Choctaw Telephone Companies who indicated the problem of call completion to their local customers has not decreased and, in fact, may have grown worse. Staff has additional on-site field investigatory work in other company areas planned for the immediate future.

Staff has worked with Grand River Mutual Telephone Company to review an analysis of long-distance toll traffic initiated on that carrier’s local telephone network. The traffic analysis examined only long-distance toll traffic that both originated and terminated on Grand River’s network.²² Although the long-distance traffic that was analyzed was originated by Grand River’s local customers, the traffic examination was conducted at points in the network after the calls were handed off to several different long-distance carriers.²³

The Staff’s work with Grand River involved analysis and review of proprietary Grand River-specific Signaling System 7 toll traffic data gathered and compiled on a custom-applications basis by a consulting and software development company for the purposes of identifying potential fraud occurring on Grand River’s local telephone network.²⁴ An analysis of the resulting proprietary data revealed the existence of circuitous routing of

²² Grand River Mutual Telephone Company offers local telephone and Internet service to many communities in Missouri and Iowa. The company has 32 telephone exchanges in Missouri. The traffic study examined only toll calling which both originated and terminated within those 32 exchange areas.

²³ In other words, the traffic was examined at the access tandem (not the end-office), where it is handed off to the various long distance companies chosen by end-users as their chosen and preferred long-distance carrier (i.e. “primary interexchange carrier” or “PIC”). A total of fifteen different long-distance carriers were identified with circuitous routing and improper caller identification.

²⁴ The software development company is VeraTeq, LLC; Platte City, Missouri. <http://www.verateq.com>

21,698 originating telephone calls within a twelve month period.²⁵ The analysis indicates 21,698 calls were originated by Grand River Missouri customers and sent to different long-distance companies who hauled the calls to different states where they were reoriginated, then backhauled to other Grand River customers in Missouri. The reorigination of these calls between the Grand River Missouri end-users involved alteration of those end-users' telephone numbers and insertion of phantom numbers associated with landline and wireless companies in New York and California, thus making the calls appear as interstate when in fact, they were intrastate in nature.^{26 27}

Staff Analysis of the FCC's Rule Proposal:

The FCC has stated that its USF/ICC Transformation Order may ultimately address the root causes of many rural call completion problems. In particular, in comprehensively reforming intercarrier compensation, the FCC adopted a transition plan to gradually reduce most termination charges, which, at the end of the transition, should eliminate most, if not all, the primary incentives for cost-saving practices that appear to be undermining the reliability of rural telephone service.²⁸ In the Staff's view, what the FCC has termed "cost savings practices" should more properly be characterized as cost avoidance practices because the Staff believes much of the call termination problems are perhaps more intentional than accidental. Thus, the Staff suggests that solutions to the problem deserve more prompt attention by the Missouri Commission.

It is unlikely that the solution being proposed in the FCC's Notice of Proposed Rulemaking will address the root causes of call completion problems in Missouri. Nor is it likely that traffic statistics will be sufficient to address Staff's concern with the apparent two-wire bridging conditions and practices which appear to be in use by the "intermediate providers" and causing low volume when calls do complete (see discussion in footnote 27). The FCC also recognized that even when calls to rural areas do get answered, the communications quality of the call may be so poor as to render the communications between the calling and called parties unsuccessful.

²⁵ 770,115 telephone toll calls originating on Grand River's local network (and destined to terminate on Grand River's local network), were examined. Data within those call records were used to examine: calling and called telephone numbers, call duration, time-of-day, day-of-week, Jurisdictional Information Parameters, originating and terminating telephone office, Carrier Identification Code (originating end) and certain trunking information, among other data. A total of 770,115 calls were analyzed of which 21,698 were found to involve circuitous routing and telephone number alteration.

²⁶ Intentionally disguised calling and/or called party telephone numbers can take the form of either missing or altered telephone numbers and is perhaps the most onerous characteristic of "Phantom Traffic." Alteration or disguising of the Calling Party Number is a violation of Missouri's long-standing Enhanced Record Exchange Rule; see 4 CSR 240-29.049. In its November, 2011 *USF/ICC Transformation Order*, the FCC finally enacted a similar prohibition against altering or stripping call information on interstate calls.

²⁷ Reorigination of long distance calls is consistent with the high incidence of reports that many callers find it difficult to hear the other party, even when the call is completed. It is at least possible that the circuitous routing practices of certain least-cost routers involve call reorigination via the use of two-wire bridged connections. Such connections are vastly inferior because they withdraw some of the signal energy, and cause frequency loss due to the impedance placed across the transmission line.

²⁸ FCC 13-18; WC Docket No. 13-39. *In the Matter of Rural Call Completion*. Notice of Proposed Rulemaking, Released February 7, 2013: Paragraph 37

The FCC proposes to collect data, but excludes call attempts that are handed back to the upstream provider. In the Staff's view, exclusion of such data does not address the underlying problem of network choking and call gapping that exists when least-cost routers take on more traffic than their networks are designed to handle. The FCC describes the process of handing traffic back to the originating provider as a "typical arrangement,"²⁹ however, routing traffic back and forth between upstream and downstream carriers should not represent a typical arrangement. Rather, it would appear such practices would likely exacerbate the circuitous traffic patterns Staff has examined in Missouri.

One commentator opined that rules are needed to ensure that least-cost routing companies maintain traffic delivery guarantees to ensure that they have adequate routes to all terminating areas, and not just those that are the most profitable. And, citing an example in Minnesota, some areas have traffic volumes so low that monitoring and traffic reporting on a percentage basis is not a solution.³⁰ The Staff agrees with this concept and will continue its investigation of these companies.

Staff Analysis of Recent FCC Enforcement Actions:³¹

On March 12, 2013, the FCC adopted a Consent Decree entered into between its Enforcement Bureau and Level 3 Communications, LLC (Level 3) which resolved and terminated the Bureau's investigation with respect to Level 3's call completion practices to rural areas, including its use and monitoring of intermediate providers. In its consent decree with the Enforcement Bureau, Level 3 has agreed to:

- Complete long-distance calls to incumbent local exchange carriers in rural areas at a rate within 5% of that in non-rural areas over a two-year period.
- Report compliance with the 5% benchmark every quarter, beginning in January 2014.
- Pay a voluntary contribution of \$975,000 to the U.S. Treasury and make an additional \$1M voluntary contribution if it misses the 5% benchmark in any quarter.
- Develop scorecards for intermediate providers that Level 3 uses to route calls, assessing their performance in the areas of post-dial delay in connecting calls, network failure, and call completion rates.
- Identify problematic routes to intermediate providers monthly.
- Cease using poorly performing intermediate providers.
- Assist the Enforcement Bureau in other investigations by providing data concerning the performance of intermediate providers.

²⁹ *Id.*: Paragraph 28; As stated: "In the typical arrangement, an intermediate provider must hand a call back to the upstream provider if it cannot expeditiously hand off the call attempt downstream, *e.g.*, to the terminating provider." See also, Footnote 53 referencing the ATIS handbook which appears to condone if not encourage similar traffic backhauling scenarios.

³⁰ FCC Rural Call Completion Workshop; Oc. 18, 2011. Comments of Mr. Martin Corso, TDS Telecommunications Corp.

³¹ *In the Matter of Level 3 Communications, LLC*; Consent Decree: FCC DA 13-371 File No. EB-12-IH-0087.

Upon completion of its investigation of Level 3, the FCC stated the following in its March 12, 2013 News Release:

In general, rural call completion failures appear to be caused primarily by long-distance carriers or intermediate providers attempting to reduce the intercarrier compensation paid to local telephone companies for completing long-distance calls to a rural home or businesses. To minimize these charges, providers often use third-party “least-cost routers,” which attempt to connect calls at the lowest possible cost.

The statements in the News Release are consistent with the Missouri-specific information Staff has obtained thus far in its investigation.

Staff’s Observations:

Based on Staff’s analysis, call termination trouble reports involve terminating calls only to the customers of small rural telephone companies located in the out-state areas of Missouri.³² Staff has no reason to believe the instances of call termination problems to rural out-state areas of Missouri have subsided. Instances of call termination problems in Missouri appear to involve a caller’s choice of long-distance telephone company, as no reports of call termination problems have been taken which involve the most predominate long-distance service provider in Missouri, AT&T. Moreover, test results appear to confirm an absence of call termination problems with the use of AT&T’s long distance network.³³

The twelve-month examination of Grand River toll traffic revealed the possibility that different IXC’s (i.e. “interexchange carriers” or long-distance companies) may be using the same least-cost routing company.

Even with the accumulated data, the identity of the least-cost router(s) remains unknown because only the originating IXC or I-VoIP provider can disclose the company with whom it has contracted to provide services designed for circuitous routing and gapping of traffic.

Although only 3% of the traffic examined in the Grand River traffic analysis was affected by circuitous routing and traffic reorigination, Staff expects this is but a small subset of the actual problem since only Grand River-to-Grand River traffic was examined. Staff

³² Based on responses to Staff data requests, industry discussions, and Grand River traffic analysis.

³³ Further, in one and one-half years of monitoring the problem in Missouri, the Staff has not received any reports of call termination problems on calls being *terminated* to AT&T and CenturyLink areas of Missouri (although, depending on the choice of long distance company, those customers may experience the problem when they *originate* calls destined for rural customers in out-state Missouri). Responses from AT&T and CenturyLink to Staff data requests indicate that customers of AT&T and CenturyLink do not experience problems associated with receiving telephone calls. However, those local telephone service customers may indeed experience problems making long distance calls, again depending on their choice of long-distance provider.

suspects the percentage of affected calls would be greater if all long-distance traffic to all rural areas of Missouri was examined.

In the Staff's view, the entities that are causing the call termination problems in Missouri are purposely and deliberately creating the problem. In regard to the IXC's, they are bound by Federal and State laws and regulations to ensure their traffic is properly terminated. The telephone traffic identified in this Report as containing missing and/or altered data is potentially fraudulent in nature and should be investigated further.

In summary:

- Call completion problems continue to exist.
- Call completion problems appear to occur only in rural out-state areas served by small incumbent local telephone companies.
- The primary cause of call completion problems appears to be intentional traffic manipulation by certain intermediate providers (a.k.a. least-cost-routers) used by some originating interexchange carriers.
- The FCC is taking some action to address this problem, but more prompt and directed action by the Missouri Commission may be appropriate.

Staff's Conclusions:

Absent further direction, Staff intends to investigate this matter further. To assist the Commission and Staff's continued investigation, Staff recommends the Commission encourage parties to submit specific feedback on the following issues:

1. Staff's conclusions and observations.
2. Staff Counsel's legal analysis that intermediate providers (least-cost-routers) must be certificated or registered with the MoPSC.
3. Whether the MoPSC has sufficient authority to adequately address call completion problems.
4. Whether the parties believe sufficient root cause analysis has been completed to this point.