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Issue:	AMR Installation
Witness:	Patrick A. Seamands
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LACLEDE GAS COMPANY

GC-2006-0390

SUPPLEMENTAL REBUTTAL TESTIMONY

OF

PATRICK A. SEAMANDS

Laclede Exhibit No. 43
Case No(s). GC-2006-0390
Date 2-26-07 Rptr KF

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SUPPLEMENTAL REBUTTAL TESTIMONY OF PATRICK A. SEAMANDS

Q. What is your name and address?

A. My name is Patrick A. Seamands, and my business address is 3950 Forest Park Avenue, St. Louis, Missouri 63108.

Q. Are you the same Patrick Seamands who filed Rebuttal Testimony in this case on November 8, 2006?

A. Yes.

PURPOSE OF TESTIMONY

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the testimony filed by two witnesses on behalf of USW Local 11-6 (the "Union") regarding two occurrences in which they allege that an Automated Meter Reading ("AMR") installer caused an unsafe condition. For confidentiality purposes, I will refer only to the street names and not to the specific address. One of the occurrences was on Mackenzie and the other was on Salerno.

Q. What did Laclede do to investigate these occurrences?

A. Under my supervision and direction, Laclede personnel conducted an investigation of these matters and conducted several interviews, including interviews with the individuals who performed AMR installations at these addresses on behalf of CellNet.

Q. What are the results of your investigation?

A. Regarding the Mackenzie occurrence, we are at this time still unable to determine how two small holes that appear to be drilled into a cast iron meter occurred. It is

virtually impossible for the AMR installer to have created these holes with the tools and methods he stated were used. We also have no reason to believe, and do not believe, that the holes were created by Mr. Johnson, the service technician who was dispatched to this location on November 10, 2006, in response to a gas odor call. Currently, we have no indication of who created these holes. I should note, however, the persons working on behalf of CellNet are not provided with drills and, in fact, have been repeatedly advised that drills are not to be used when performing work on Laclede's facilities. I should also note that when Laclede gas personnel responded to this odor call no concentration of gas could be detected anywhere in the room where the meter was located except when the gas detection device was placed directly on top of the meter. Nevertheless, the meter was promptly repaired and the problem resolved.

Regarding the Salerno occurrence, a leak clearly occurred from a loose union joint on the piping a few feet away from the meter. While the AMR installer's work was focused on reprogramming the AMR device on the nearby meter, the jostling from this work could have contributed to the loosening of the joint. Alternatively, if the union became loose because of a worn seal, as Mr. Boyle, a Laclede service technician who was dispatched to the home, indicates, the AMR worker would not have been a contributing factor. Nor do we know what actions, if any, were taken at the home that might have affected the facilities after the AMR installer left. Regardless, it does not appear that the AMR installer left the home while the leak was occurring. Upon receiving a call by the

customers of a gas odor, Mr. Boyle and his supervisor ultimately resolved the issue.

MACKENZIE OCCURRENCE

Q. Please describe the meter at this location.

A. The meter at this commercial location is a large meter known as a "4IC," and is made of cast iron. The top of this meter is referred to as the "hand hole plate" and is equipped with pre-threaded holes. These "holes" do not go all the way through the hand hole plate, but are just deep enough to house the bolt that attaches the index and AMR module. The bottom of the hand hole plate is reinforced in the area corresponding to the pre-threaded holes.

Q. Can you describe the damage to the meter?

A. The hand hole plate in this case has two punctures. One of the punctures is a clean, small round hole that, in my opinion, appears to have been made by a drill. The second hole is much smaller and is not easily visible. It could have also been made by a drill but if so, the bit barely punctured the surface of the hand hole plate, and did not break through completely.

Q. Could this damage have been caused by the screws that were placed in those holes to hold the index and AMR module in place?

A. In my opinion, no. First, I would like to clarify terms. I consider a "screw" to be a threaded item with a sharp point that attaches to an object by penetrating the surface, while a "bolt" is also a threaded item, but is flat or blunt-ended so that it attaches to an object without penetrating the surface of the object, but instead by

some other means, such as meshing with the threading of the object, as in this case.

Q. Were the items that held the index and AMR module to the meter in this case screws or bolts?

A. Bolts. The two bolts in question are flat-bottomed and rather wide (5/16"). These bolts are simply too short, too blunt, and too wide to have made the small, fine holes in the hand hole plate.

Q. What steps are involved in the AMR installation process on the 4IC meter?

A. The original attachment of the index, before a CellNet AMR module is installed, does not use or sit in the same holes as those used for the AMR module. Since these AMR holes have been exposed to the environment or elements, possibly for decades, they will have accumulated dirt and grime, particularly if the meter is outside. In this case, the meter was inside, but was in a boiler room, so it could still have been quite dirty. Therefore, the AMR installer begins by removing the original index and cleaning out the exposed holes in preparation for installing the AMR module.

Q. What method did the AMR installer in this case use to clean out the holes in a 4IC meter installation?

A. The installer in this case described and demonstrated his method of cleaning out the holes, which in my view conforms to standard practice and the training provided to the installer. This process consists of first, using a small screwdriver to dig debris out of the hole, and then using a tap tool to clean out the threads. The tap is a threaded tool that cleans threads in a hole by being screwed into the

hole. The installer used a small hand wrench and taper tap, which is a pointed tool, to clean out the threads by rotating the tap in the hole. He then proceeded to attach the index and AMR module to the hand hole plate using the bolts described above.

Q. Did the installer use a drill on the meter?

A. The installer indicated that he was not issued a drill, did not carry a drill and had not used a drill to perform any work on commercial meters.

Q. Could the AMR installer have created the holes by overtightening the taper tap?

A. Again, no. In my opinion, the installer's approach to cleaning out the holes could not have resulted in the punctures that are evident in the hand hole plate. In fact, in tests performed by the installer himself, and separately by Laclede personnel, using hand tools similar to those used by the installer, even using full force, it was simply not possible to penetrate the meter with these hand tools, much less replicate the holes that were found on the meter. In fact, the same result occurred in all tests: the tap stripped the threading in the bolt hole, but never punctured the hole.

Q. Could the holes have been made by the taper tap if inserted with a drill?

A. No. One of the holes is drilled clean through. Had this been done by the taper tap, I would expect to see threading created by the tap toward the bottom of the hole, which isn't there.

Q. Mr. Johnson, the Union's witness, who is 6'1" and 210 pounds, opined that it would have to take a person stronger than him to bore holes in cast iron with hand tools. Is the AMR installer a large man?

A. No. He is of average height and weight, and appears to have average strength. We believe that he is in his early 60s.

Q. If the holes had somehow been drilled by the taper tap during the cleaning process, would the installer be likely to notice it?

A. Absolutely. The gas would have started to leak immediately. When the tap was removed from the hole, it would continue to leak unimpeded. With gas issuing from the hole, the installer would have then had to drill a second hole with the same result, complete the installation and walk away without comment.

Q. Could the AMR installer in question have done that?

A. The AMR installer indicated that if the situation described above had occurred, he would have immediately plugged the hole with the bolt to slow the flow of gas and called in the leak on his cell phone. A check of the AMR installer's record shows no complaints with his work. A spot check of other AMR devices he installed on 4IC meters during that month also reveals no issues. It seems highly improbable that the AMR installer could have created the two holes in the meter, much less walked away from them without alerting anyone.

Q. What is the background of the AMR installer?

A. He has a wealth of experience in maintaining testing systems. He stated that he was originally from the Chicago area. He has an AA in mathematics from West Valley College in Saratoga, CA, took electronic and math courses from Cogswell College, and received an Electronics Technician "A" Radar certification while serving in the United States Navy, where he did three tours of duty in Vietnam in the mid 1960s. From 1968 until 2004, he lived on the west coast, including the

Silicon Valley region. Until 1985, he worked for Fairchild Semiconductor as an assistant engineer, repairing and teaching systems programming to maintenance personnel and engineers in the United States and Asia. In the 20 years following, he has been in the Automatic Test Equipment field, which encompasses maintenance, maintenance supervision, and customer support of systems, computers, workstations, handlers, and power supplies in a test environment. He has not only performed installations and maintenance on numerous kinds of equipment, but has also taught maintenance procedures to technicians. He is no stranger to tools and equipment.

Q. So who drilled two holes in the meter at Mackenzie?

A. We don't know, but it doesn't appear to be the AMR installer. And I don't believe that Mr. Johnson was involved either. I would note that CellNet records indicate that the AMR installer completed his work on Mackenzie at 9:11 a.m. on Thursday, November 9. And although almost a full work day remained, no gas odor was reported that day by any of the employees working there, including the maintenance man.

Q. Why do you think Mr. Johnson was not responsible?

A. Although he had access to the meter prior to a Meter Shop supervisor's arrival, Mr. Johnson is a 27-year employee with an excellent work record and reputation. I have no reason to suspect him of any intentional or improper actions to cause the leak.

Q. From Mr. Johnson's affidavit, one could get the impression that the leak created a dangerous situation. Is this correct?

A. Not according to Mr. Johnson's deposition, in which he testified that his combustible gas indicator ("CGI"), also known as a "Ranger," recorded no gas readings anywhere in the building nor even in the boiler room itself, nor at the regulator, nor around the meter itself, until he held it right on top of the meter. At the meter, the Ranger read 20%, according to Mr. Johnson's service ticket. However, because there was no measurable gas present in the open air, Mr. Johnson neither evacuated the building nor even shut off the gas, actions Mr. Johnson certainly would have taken if the situation was hazardous. In fact, Mr. Johnson confirmed that, in accordance with Laclede policy, had he received a reading of 1% or more in the open air, he would have evacuated the building. Instead, after following Laclede leak detection procedure and identifying that the leak was at the meter, he opened outside double doors to ventilate the room. He also got in contact with meter shop personnel who are trained to work on commercial meters, and awaited the arrival of Meter Shop Foreman Elgin Manalang. He certainly saw no need to evacuate the building once he had established that the leak was only on the meter.

Q. Did Mr. Johnson correctly follow Company procedures for responding to a leak call?

A. Yes. After he arrived on the scene, Mr. Johnson was introduced to the maintenance supervisor at the facility, who accompanied him to the boiler room. Mr. Johnson testified that as he approached the boiler room, he was repeatedly urged by the maintenance supervisor to focus on the meter, which the maintenance supervisor thought to be the source of the leak, apparently because

of the device put on the prior day. However, Mr. Johnson followed proper procedure by first ensuring that gas wasn't migrating into the building from outside by checking the service entrance, foundation and sanitary sewer before approaching the meter.

Q. In his January 4, 2007, affidavit, Mr. Johnson stated that he received a 25% reading near the AMR device. Was it 20% or 25%?

A. At his deposition, Mr. Johnson indicated that his contemporaneous recording of the 20% reading is likely correct.

Q. What happened when Mr. Manalang arrived?

A. The two men proceeded to repair the leak, with Mr. Johnson performing the work and Mr. Manalang supervising. Mr. Manalang's recount of the incident is consistent with Mr. Johnson's affidavit on these points.

Q. Mr. Manalang claimed that as he approached the boiler room, Mr. Johnson was standing outside smoking. Is this accurate?

A. Mr. Johnson stated in his deposition that he was not smoking, and in fact is not a smoker. I have no reason to doubt Mr. Johnson's representation. It appears that Mr. Manalang is mistaken on this point.

Q. Are holes in a meter or hand hole plate a normal source of meter leaks?

A. No. On occasion, leaks might arise from a crack in the body case of the meter, but this is often caused by impact from a vehicle or other object. In most cases, however, leaks will arise from wear on one of the gaskets or seals in the meter itself. As Mr. Johnson testified in his deposition, it is the meter that leaks; remote reading devices do not leak. And these meter leaks often occur at the drive axle

behind the center box of the meter as a result of normal wear and tear on the seal that surrounds that axle. And these leaks occur independent of any installation of remote devices, be they AMR modules installed by CellNet contractors or previous generations of remote reading devices installed by Laclede service technicians.

Q. Since Laclede and CellNet agreed that installers would cease to use hand drills to remove stripped screws in early 2006, have there been any other occurrences where it appears that a drill was used on a meter?

A. None.

SALERNO OCCURRENCE

Q. When did the AMR work occur at this location?

A. The work began just before 9:00 a.m. and was completed at 9:12 a.m. on Tuesday, December 19, 2006.

Q. Please describe the AMR installer's background.

A. This installer began working on CellNet projects in September 2006. He performs work on both Ameren and Laclede accounts. His Laclede work consists primarily of troubleshooting and reprogramming AMRs, although he has also installed them.

Q. Please describe the AMR installer's experience at Salerno.

A. The AMR installer performed a re-programming of an AMR module that had already been installed on the meter. The customers are a married couple (herein referred to as "Mr." and "Mrs."). The installer was greeted by Mrs. and entered the home through a side door that opened onto a landing part of the way down the

steps from the kitchen to the basement. Upon entry, he noted a gentleman in the kitchen who he perceived to also be there doing work in the house. Soon after the installer's arrival, the gentleman left. The installer did not see Mr. at any time, and believed that there was no one else in the house.

On his way down to the basement, the installer noticed a tool tray with screwdrivers in it. The meter is in the basement of the home, in a closet with a wooden door. A file cabinet sat in front of this closet blocking access to the meter. The file cabinet was moved out of the way and the installer commenced his work. As he did, he noticed that he did not have the right size screwdriver. Rather than take the time to return to his vehicle to get the right size screwdriver, he requested and received permission to use the customer's screwdriver.

The installer stated that he did notice a minor whiff of gas upon removing the index. In previous jobs, he had occasionally noticed this effect. During his work, he thought he heard a slight wisp, although he said it could have been any of the sounds normally heard in a home. Nevertheless, he immediately stopped his work and listened for the sound, but it was gone. He completed his work re-programming the meter and, upon completion, he heard no whistling, or even wisping. Mrs. did mention that she smelled gas, but he assumed it was from the original whiff he had experienced, and informed her of that. He closed the closet door and replaced the file cabinet in its original position in front of the door. As he climbed the steps to depart the home, he smelled no gas, even after pausing on the landing at the top of the steps to receive some cookies offered to him by Mrs.

Upon receiving information of the leak later that day, CellNet called in the installer, who passed a drug test.

Q. Could the AMR reprogrammer have used excessive force on the meter?

A. The reprogrammer indicated that, due to the configuration of the facilities, he could feel some slight "give" to the meter as he worked on it; therefore, he was careful not to use too much force.

Q. What happened after the installer left the premises?

A. We don't know what happened at the home between 9:12 a.m. and 9:39 a.m., when Mrs. called in a gas odor.

Q. Is that when Mr. Boyle was dispatched to investigate the odor?

A. At the time, Mr. Boyle was on a 15 minute break at the Union headquarters on Olive. During his break, he testified that he met with Mr. Patterson, the Union business manager, and discussed the present case (GC-2006-0390), along with the upcoming Union election, in which Mr. Boyle has been nominated to challenge the incumbent Patterson for the business manager position. On his route sheet, Mr. Boyle first noted that he left the Union headquarters at 9:55 a.m., but changed it to 9:50 a.m. However, his cell phone records indicate that he did not contact the Laclede dispatcher to receive an order to go to Salerno until 9:55 a.m. Mr. Boyle stated in his deposition that it was about a 15 minute drive to the home. His route sheet and affidavit reflect that he arrived at the customers' home at 10:10 a.m. However, at his deposition, he stated that the 10:10 time was "rounded" and that he actually arrived at 10:08. His cell phone records indicate that he was on the cell phone for 9 minutes, beginning at 9:59 a.m., so if he

arrived at the customer's home at that time he would have been on the phone, or just completing his call.

Q. What happened next, according to Mr. Boyle?

A. When he arrived at the home, Mr. had the side door open and was waving him to come in. Mr. Boyle said he would be there shortly, and proceeded to clear his CGI and gather his tool bucket. He then entered the house at the side door.

Q. Did he notice the odor of gas?

A. Yes, he testified that he immediately smelled gas and got a reading of 30% of the lower explosive limit (LEL), or approximately 1.3% gas in air.

Q. How did he respond?

A. He proceeded down to the basement. On his way, Mr. informed him that a Laclede person had been there earlier that day. Mr. Boyle stated in his affidavit that when he got down to the basement, the wife appeared to be ill. However, in his deposition, Mr. Boyle recanted, claiming that she was not ill at that time, and that he had an extended discussion with her while he did his work.

Q. What did Mr. Boyle and the Mrs. discuss?

A. Mrs. was sitting at her computer in a position that impeded Mr. Boyle from working in the closet and accessing the shut-off valve. So part of their discussion consisted of Mr. Boyle exhorting Mrs. to move out of the way so he could work. Mr. Boyle testified that when he arrived the doors to the closet were closed, but importantly, he had no recollection of a file cabinet being in front of the doors. Most of their discussion, however, appeared to center on details of the visit earlier

that morning by a gentleman representing Laclede. He summarizes this part of the conversation at the bottom of page 2 and top of page 3 of his affidavit.

Q. During his deposition, did Mr. Boyle make other corrections to what he stated in this portion of his affidavit?

A. Yes. At his deposition, Mr. Boyle corrected errors made in two sentences in the portion of his affidavit where he had indicated that Mrs. had said that the subcontractor had gone upstairs. Now, he believes that Mrs. did not, in fact, say that.

Q. Please continue.

A. Based on this information about a prior Laclede visit, Mr. Boyle concluded that such visitor must have been a CellNet contractor. He immediately assumed that the leak was coming from the center box area and through the index cover of the meter. And, even though he testified that he could hear the sound of gas hissing and had obtained a 1.3% reading (neither of which are consistent with center box leaks, which are so small that they often do not even register a reading near the meter, much less a 1.3% reading in the open air), he made no attempt to identify where the sound was coming from but determined to shut off the gas at the meter valve.

Q. Did he evacuate the home since the reading was above 1%?

A. No. He did not follow Laclede procedure on this point. He had claimed that he evacuated the home on both his service ticket and his sworn affidavit, but in his deposition, he conceded that he had not done so, but only told the customers to prepare to evacuate, in case he could not control the leak.

Q. Were his efforts to have Mrs. move away from the closet successful?

A. Yes. Ultimately she stood up and, according to Mr. Boyle staggered over to the steps. Mr. Boyle asked Mr. if her poor gait was unusual, to which Mr. replied that it appeared she was sick. The customers then went upstairs and Mr. Boyle went outside to air out his CGI.

Q. What did he do then?

A. According to his cell phone records, at 10:15 a.m., or between five and seven minutes after he had arrived, depending on which account of his arrival is used, he placed a phone call to Mr. Patterson at Union headquarters to share the news that a CellNet contractor may have caused a leak. Although the call lasted seven minutes, Mr. Boyle testified that most of that time was used by Mr., who had demanded that he be given the phone in order to speak to what he thought was a Laclede representative. Mr. Boyle made no mention of this call in his affidavit. Instead he stated that he called his supervisor to come observe the leak. Having seen my January 16, 2007 affidavit prior to his January 23, 2007 deposition, Mr. Boyle admitted to making at least three calls during his time at this premises, including one to Mr. Patterson. However, Mr. Boyle claimed that he was unsure of the order of these calls. In fact, his call to Mr. Patterson was the first call he placed.

Q. Does any part of Laclede's normal leak investigation and response procedure involve placing calls to Union headquarters?

A. No.

Q. What did Mr. Boyle do after his conversation with the Union business manager was interrupted?

A. He stated that he returned to the house and continued to take gas readings to confirm that the gas concentration was dropping, which it was. According to his affidavit, he then noticed the wife was upstairs on the couch gagging and convulsing.

Q. What did Mr. Boyle do?

A. He stated that he phoned his supervisor, Mr. Sisak, and urged him to come to the house, because the customer appeared ill. Cell phone records indicate that such a call occurred.

Q. Did Mr. Boyle know what was wrong with Mrs.?

A. At his deposition, Mr. Boyle testified that he is not a doctor and did not know the source of her illness. He also testified that he believed it could be a stroke, heart attack, over-excitement, or gas inhalation. Accordingly, he had no basis for his affirmative statement on page 3 of his sworn affidavit that both customers went to the hospital "due to gas inhalation."

Q. In his affidavit, Mr. Boyle stated that he suggested Mr. call an ambulance for Mrs. Is that true?

A. Apparently not. In his deposition, Mr. Boyle recanted this statement, stating that he had not suggested that Mr. call an ambulance.

Q. What happened next?

A. According to the cell phone records, Mr. Boyle made a second call to Union headquarters at 10:29 a.m. Mr. Boyle stated at his deposition that he had no recollection of making this call.

Q. Did Mr. Sisak in fact come to the Salerno residence?

A. Yes. Mr. Sisak directed Mr. Boyle to turn the gas on (the CGI read -0- by this time), and upon doing so, both men could clearly identify a whistling sound coming from the union. Mr. Sisak directed Mr. Boyle to tighten the union, which Mr. Boyle did, and the leak appeared to immediately stop. Mr. Boyle states that further checks by him confirmed that the leak had been repaired, and he so stated on his service ticket and in his affidavit.

Q. So what caused the union to come loose?

A. I cannot be sure. According to Mr. Boyle, based on his experience, it was caused by a rubber seal on an older-style union that wore out. If so, the seal would have led to the loosening of the union, not the work of the AMR reprogrammer. However, in my opinion, it is not clear what directly caused the leak to occur at the union joint. It seems unlikely that the installer's work re-programming the AMR module was substantial enough to loosen an otherwise tight union joint. It is more likely that the joint was already slightly loose when the installer appeared that morning, and that his work on the meter may have further loosened the joint. It is not clear, however, whether anyone else at the premises may have subsequently taken some action that ultimately led to the union coming loose enough to leak gas and issue a whistling sound. Based on the interview, it does not appear that the leak was occurring at the time the CellNet worker left the

home, and I believe that this individual would have certainly reported a leak if there had been any whistling, hissing or even wisping. Nevertheless, all persons working for CellNet were immediately reminded of the procedures for reporting and assisting customers in reporting odors in connection with any work that they may perform.

CONCLUSION

Q. What do you conclude from these two events?

A. The Mackenzie occurrence is a mystery. I am not concerned about such an event reoccurring, because I do not believe that the AMR installer caused holes to be drilled in the meter, and because I am confident that CellNet does not issue or permit power tools to be used on an AMR installation. The exact circumstances that resulted in the Salerno occurrence are also not completely known, but we have addressed these matters by ensuring the CellNet employee was fit to do his job and by directing CellNet to once again remind their installers of the procedures for contacting Laclede whenever they or the customer has a concern regarding a gas odor.

Q. In your view is there any additional action required?

A. No. Regardless of what one assumes regarding the origins of these two situations, they are isolated and extremely rare occurrences that don't reflect at all on the routine and perfectly safe nature of these installations, as demonstrated at the beginning of the hearing on December 11, and by the hundreds of thousands of successful installations in Laclede service territory and the millions of successful installations nationwide. In fact, the scarcity of these occurrences strongly

indicates how extraordinarily effective the procedures and practices implemented by Laclede and CellNet have been in ensuring that the Company's facilities are not inadvertently damaged from any work that may be done on them in connection with AMR installations.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does

AFFIDAVIT

State of Missouri)
) ss
City of St. Louis)

I, Patrick A. Seamands, being of lawful age state: that I am Chief Engineer of Laclede Gas Company; that I have read the foregoing testimony; that the statements and information set forth in such testimony are true and correct to the best of my information, knowledge and belief; and, that I am authorized to make this statement on behalf of Laclede.

Patrick A. Seamands

Subscribed and sworn to before me this 26th day of January, 2007.

Notary Public

My Commission Expires: 2/16/2007

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

BARBARA ANN MCCARTHY
My Commission Expires
February 16, 2007
Jefferson County