Before the
North Carolina Utilities Commission

Docket No. G-9, Sub 781

General Rate Case

Supplemental Testimony
of
Adam Long

On Behalf Of
Piedmont Natural Gas Company, Inc.

Piedmont Natural Gas

September 7, 2021

Q. Please state your name and business address.

A. My name is Adam Long and my business address is 4720 Piedmont Row Drive Charlotte, North Carolina.

Q. By whom and in what capacity are you employed?

A. I am employed by Piedmont Natural Gas Company, Inc. ("Piedmont" or the "Company"), as Vice President – Gas Pipeline Operations.

Q. Have you previously testified in this proceeding?

A. Yes, I submitted prefiled rebuttal testimony in this proceeding on August 25, 2021.

Q. What is the purpose of your supplemental testimony in this proceeding?

A. In my rebuttal testimony, I explained that I would update the Commission on the status of the Robeson LNG plant prior to the hearing of this matter. The purpose of my supplemental testimony is to provide that update. I am also providing an update on the status of another significant capital project – the Pender Onslow Expansion.

Q. Before you describe the status of the Robeson LNG plant, could you explain the discussions you have had with the Public Staff and the current arrangements between the Company and the Public Staff with respect to the Robeson plant?

A. Yes. I have had several discussions with members of the Energy Division of the Public Staff regarding the progression of the Robeson Plant toward

full functionality and operations. In those discussions, we have identified four areas of functionality to be achieved before the plant can be considered fully operational. These areas are: (1) the ability to receive and process natural gas into the plant; (2) the ability to liquify natural gas; (3) the ability to store LNG; and (4) the ability to vaporize LNG.

Q. How many of these functions have been demonstrated as part of the Commissioning process?

A. At this time, we have successfully demonstrated the ability to perform three out of four of these functions. The one we have not demonstrated to the Public Staff's satisfaction yet is the ability to liquify natural gas.

Q. What do you mean when you say "demonstrated to the Public Staff's satisfaction"?

A, In our discussions with the Public Staff, Piedmont suggested a three-hour liquefaction run as evidence that the plant is capable of performing that function.

Q. Have you successfully liquified natural gas at the Robeson plant?

A. Yes, we have successfully liquified natural gas on two occasions but have experienced operational issues each time which caused us to terminate the process before the three-hour mark was reached.

Q. Can you explain what happened on these two occasions?

A. Yes. As part of the initial operation and commissioning process for LNG plants, it is common practice to use enhanced filtering materials (referred

to as "Socks") inside the operational filters for liquefaction equipment. These enhanced filtering materials are intended to capture any construction debris, dirt, and dust generated by the construction process that may have been inadvertently left inside the plant's liquefaction equipment. It is difficult to predict exactly how much of this type of material may be collected in the Socks during initial operations. If meaningful amounts of debris are collected by the Socks, then an alarm is initiated and the liquefaction process is interrupted. This involves stopping liquefaction, removing the Socks and cleaning them, placing them back into the filters, and then reinitiating liquefaction, a process that can take from 3-5 days to complete due, in part, to the extremely cold temperatures the system is operating under when the Sock alarm is sounded.

Q. Did Piedmont experience these types of alarms as it was commissioning the liquefaction equipment at the Robeson LNG plant?

A. Yes, we experienced two instances in which Sock alarms were triggered during liquefaction operations due to the collection of construction debris, dirt and dust. In each case, this caused us to have to go through the shut-down, remove, clean, replace, and reinitiate sequence for liquefaction operations.

Q. Are these types of filter issues unusual during startup of liquefaction operations?

A. Not unusual, no – but they are not predictable either. We had several similar issues when we were commissioning the Huntersville LNG plant after we completed significant renovations to that facility earlier this year.

Q. Has Piedmont experienced any other difficulties with commissioning of the Robeson LNG plant's liquefaction operations?

A. Yes, we had one additional issue that occurred after our second liquefaction run last Friday, September 3, 2021, that caused us to delay the planned liquefaction operations.

Q. What caused the problem last Friday?

A. One of our methane sensors on the refrigeration side of the heat exchanger – the equipment where natural gas is reduced in temperature to approximately 260 degrees below zero and liquified – alarmed for the presence of small quantities of methane on the refrigeration side of the circuit. Through manipulation of various valves, we were able to isolate the heat exchanger and determine that there was a small leak between the natural gas side and the refrigeration side of the heat exchanger through which methane was being introduced into the refrigeration cycle. This is dangerous and not an acceptable operating condition so we delayed the planned liquefaction run.

Q. Did you experience this alarm on any prior liquefaction runs?

A. No, we did not.

Q. What is required to remedy this leak?

A. The process for repair involves gaining access to the heat exchanger which is a rectangular steel structure roughly 81 feet high and fourteen by ten feet in internal dimensions that is heavily insulated. Once access is gained, a person will have to be inserted into the heat exchanger and will have to manually find the leak using a water and soap mixture along all the seams of the structure. Once the leak is found, the fix is a relatively simple weld to close the leak.

Q. How long will this repair process take?

A. It depends on how long it takes to find the leak. Gaining access to the heat exchanger will be fairly quick as will placing the weld to stop the leak but finding the leak could take quite a bit longer than either gaining access or repairing the leak. Our best estimate of repair time at this juncture is 5-14 days.

Q. Will you be able to achieve a three-hour liquefaction run following this repair?

A. We certainly hope so, but the Commission does not have to take that on faith. Our settlement with the Public Staff is designed to ensure that we can actually achieve functionality before this plant is included in rate base in this proceeding.

Q. In the Stipulation with the Public Staff, the Pender Onslow Expansion project is another capital project whose inclusion in rate base is delayed. Can you explain what this project is?

A. Yes. The Pender Onslow Expansion is an approximately 35-mile, 8-inch distribution pipeline expansion project generally paralleling Highway 17 between Wilmington and Jacksonville to support the distribution system in each city and enhance Piedmont's ability to serve customers in this growing area.

Q. What is the status of that project?

A. Construction on that project is complete, it is pressurized, and it is flowing gas to our customers.

Q. Has it been closed to plant yet on Piedmont's books?

A. Yes. This project was closed to plant on Piedmont's books as of August 31, 2021.

Q. In your opinion, will the Robeson LNG plant and the Pender Onslow Expansion facilities be used and useful and eligible for rate base treatment upon completion of the process provided for in the Company's Settlement Agreement in this docket?

A. Yes.

Q. Does this conclude your supplemental testimony?

A. Yes, it does.