

DELTA NATURAL GAS COMPANY, INC.
CASE NO. 2022-00085

SECOND PSC DATA REQUEST
DATED JUNE 28, 2022

1. Refer to Delta's responses to Commission Staff's First Request for Information, Item 2a.

Provide any engineering data relied upon in your response to Item 2a.

Response:

As discussed in response to Item 2a, the bottleneck created from the 3" and 4" pipeline segments is a significant limiting factor in providing natural gas supply in the Nicholasville system. Delta has performed flow calculations on the Nicholasville system, more particularly the effect of the 3" and 4" bottleneck. The calculations have been performed utilizing the software program, "Bradley Bean GasWorks 9.0." After experiencing a record peak day load requirement in January of 2014, which rendered the system with less than 1 psi on the north extremity, Delta upgraded its system to accommodate a greater maximum allowable operating pressure ("MAOP"). This was done in order to temporarily alleviate the immediate system pressure and volume concerns. The upgrade resulted in increasing the former MAOP of 94 psi to 175 psi. Utilizing the 175 psi MAOP in the calculations, the bottleneck creates a 96 psi drop in pressure. The location of the bottleneck is near the mid-point of the system. From the bottleneck location to the north extremity of the system, flow model calculations indicate an additional drop of 41 psi. This results in a total drop of 137 psi from the supply point to the north extremity.

It is very important to note the significance of using peak day volumes from 2014 in these calculations. As shown in Delta's response to Item 5 of the Commission Staff's First Request for Information, the Nicholasville system has grown since 2014 and the load demand will continue to grow. More importantly, present day peak load volumes will be higher than the peak day load volumes used from 2014. Furthermore, the temperatures experienced on the system in 2014 were not as cold as historical temperatures. In 1994, Delta experienced much colder temperatures than that of 2014. Given this fact, if the current system load was to experience the temperatures identical to that of 1994, there is no certainty that the system can effectively operate under these parameters.

As mentioned in response to Item 2a, Delta proposes to construct an 8" pipeline from an interstate pipeline connection located approximately 17 miles southeast of the Nicholasville system. The proposed pipeline is designed to be capable of operating at an MAOP of 720 psi. Using a 720 psi MAOP and the peak day volume usage from the 2014 incident, calculations indicate a pressure drop of only 26 psi across the 17 miles of 8" pipe. This additional supply to the north end of the Nicholasville system will alleviate any pressure and volume concerns for present and future requirements.

Delta also considered the design of a pipeline from the west side of Nicholasville instead of the proposed pipeline. This design included an interconnection on a separate transmission pipeline company. All consideration for this design was terminated upon being denied access to an interconnection on any company's pipeline. Delta did not perform any actual pressure and volume calculations due to being denied access in the early stages of planning and design. Supply

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from this location would have been shorter in length, but it would tie into the lower southwest area of the Nicholasville system. If this design were to be completed, it would be capable of addressing the pressure and volume concern to some degree. However, from a design standpoint it would not be as effective or beneficial as the proposed supply from the north end of the system.

Sponsoring Witness: Jonathan Morpew