BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of NRG Ohio Pipeline Company LLC for Approval of a Letter of Notification for the Avon Lake Gas Addition Project in Lorain County, Ohio	))))	Case No. 14-1717-GA-BLN

DIRECT TESTIMONY OF

Salvatore Caiazzo

on behalf of

NRG OHIO PIPELINE COMPANY LLC

April 6, 2015

1. Please state your name.

My name is Salvatore Caiazzo.

2. By whom are you employed?

I am employed by Hanover Engineering Associates, Inc. ("Hanover"). The Applicant, NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") retained Hanover in early 2014 to assist with the engineering and design of the Avon Lake Pipeline ("Pipeline").

3. What is your business address?

My business address is 252 Brodhead Rd., Suite 100, Bethlehem, PA 18017.

4. Please state your educational and professional background.

I have a Bachelor of Science degree from Lafayette College in Pennsylvania. I also am a licensed professional engineer in Pennsylvania, Ohio, New York, Louisiana, and West Virginia. I joined Hanover in 2007 and have worked as an engineer and project manager. I have experience in projects involving natural gas midstream, municipal, private development, and watershed clients. Specifically, I have provided engineering and client management services for the design and permitting of natural gas pipeline and compressor projects, including over 400 miles of pipeline and over 30 compressors. Prior to joining Hanover, I was the design engineer for numerous land development, watershed, public school district, and municipal clients with F.X. Browne, Inc. for four years.

5. Please describe your current position.

I currently serve as an engineer and project manager for Hanover. As part of my role, I am the engineer responsible for overseeing the design and route analysis of the Avon Lake Pipeline.

6. Please describe which sections of the Letter of Notification ("LON") you are sponsoring.

The design and engineering of the Avon Lake Pipeline are discussed in the following sections of the LON: Brief Description of Project (Pages 1-3); Location of the Project (Pages 4-6); Alternatives Considered (Pages 6-9); and Technical Features of the Project (Pages 13-14). Additionally, Hanover prepared the document entitled "Hanover Route Refinement and Analysis" that was included as Attachment E to the March 19, 2015 Supplement to the LON ("Attachment E").

7. Please indicate the purpose of your testimony.

The purpose of my testimony is to discuss the technical design of the Avon Lake Pipeline, the route selection process and specifically, why the proposed route is the optimal alternative, when considering environmental constraints, conflicting utilities in the project corridor, constructability and cost evaluation, and constraints/special conditions requested by land owners.

8. Please describe the technical features of the Avon Lake Pipeline?

As set forth on pages 13-14 of the LON, the Pipeline is designed to be 24-inches in diameter and is designed to be constructed with high-grade steel with a minimum wall thickness of 0.312 inches and specified minimum yield strength of 52,000 pounds per

square inch ("PSI"). For portions of the Pipeline to be installed via boring or horizontal directional drilling, the minimum wall thickness is designed to be 0.500 inches. The Pipeline is designed to be cathodically protected by an impressed current system and externally coated with 14-16 mils of fusion bonded epoxy ("FBE"). Where the Pipeline is designed to be installed via boring or horizontal directional drilling, an abrasion resistant overcoat ("ARO") of Powercrete DD or equivalent is designed to be used to protect the FBE from damage during construction.

9. Please describe the steps NRG Ohio Pipeline has taken to ensure the safety of the Avon Lake Pipeline.

As explained in more detail on pages 17 and 18 of the LON, Environmental Resources Management ("ERM") evaluated the number and types of structures along the Pipeline route. Given the type and number of buildings that occur along the route, the pipeline class location varies along the pipeline route. However, NRG Ohio Pipeline is choosing to conservatively design the pipeline for a Class 3 location (49 CFR 192.5) for its entire length to exceed federally mandated pipeline safety standards. In response to the Ohio Power Siting Board Staff concerns about the proximity of the pipeline to houses near the Mile Post 12 area, NRG Ohio Pipeline agreed to use even thicker pipe in this area as explained in the response to question 4 of NRG Ohio Pipeline's March 4, 2015 data response to Staff.

Further, the Avon Lake Pipeline has been designed in accordance with all applicable federal safety standards. NRG Ohio Pipeline located and designed the proposed pipeline to maximize the use of existing access points, reduce landowner impacts, and ease construction, with steadfast attention to public safety.

10. Please discuss Hanover's role in the route selection process.

As stated by Alan Sawyer in his pre-filed testimony, NRG Ohio Pipeline underwent a comprehensive and iterative process to determine the route presented in its LON Application. Hanover (along with ERM) took over route development for the Pipeline in February 2014. NRG Ohio Pipeline provided Hanover a proposed route (the route developed by AECOM) and Hanover evaluated the route for constructability and engineering considerations.

11. Please describe how the initial route was modified from Hanover's review.

As discussed in detail in Attachment E of the LON Supplement, Hanover identified various "pinch points" along the route. Pinch Points are defined as areas where route placement was physically constrained. The importance of eliminating the Pinch Points, the specific Pinch Points identified and the consequential re-routes are all described in Attachment E.

12. Please describe any further modifications to the route.

After the initial AECOM proposed route was modified by the evaluation of ERM and Hanover, a proposed route was developed and presented in April 2014. This was the route that the initial surveys, permit applications, and landowner negotiations were based upon. As noted in Mr. Sawyer's testimony, the route was further adjusted during the right-of-way negotiations with affected landowners. In all, NRG Ohio Pipeline has made over 200 minor route revisions at the requests of landowners (on occasion, more than one revision to a parcel). Major reroutes based on negotiations with landowners are identified and described in the Supplement.

13. Please describe the complications with making further re-routes.

We have now been evaluating, analyzing and contemplating this route for over a year. Each time one re-route is requested, there are impacts to other portions of the route that must be considered and evaluated. Simply put, if you move one piece of the route, another piece often has to move to accommodate the change. Accommodating the 200 route requests mentioned above took an extraordinary amount of time and effort. Continuously making changes will impact permitting and ultimately the construction schedule.

14. Please describe your opinion of the current proposed route?

Considering environmental constraints, conflicting utilities in the project corridor, constructability and cost evaluation, and constraints/special conditions requested by land owners, I believe the current proposed route is the optimal route for the Pipeline.

15. Do you have any further comments?

No.

16. Does this conclude your testimony?

Yes, it does.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Memo Contra has been served upon the following parties listed below via electronic mail, this 6th day of April 2015.

Thomas J. O'Brien (Reg. No. 0066249)
Dylan F. Borchers (Reg. No. 0090690)
BRICKER & ECKLER, LLP
100 South Third Street
Columbus, OH 43215-4291
Telephone: (614) 227-2335; 227-4914
Facsimile: (614) 227-2390
E-mail: tobrien@bricker.com
dborchers@bricker.com

Robert J. Schmidt, Jr.
L. Bradfield Hughes
Porter Wright Morris & Arthur, LLP
41 South High Street
Columbus, OH 43215
rschmidt@porterwright.com

Anne Rericha
FirstEnergy Service Company
76 South Main Street
Akron, OH 44308
arericha@firstenergycorp.com

Michael Braunstein
William A. Goldman
Goldman & Braunstein, LLP
500 South Front Street, Suite 1200
Columbus, OH 43215
Braunstein@GBlegal.net
Goldman@GBlegal.net
Stahler@GBlegal.net

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

4/6/2015 5:11:46 PM

in

Case No(s). 14-1717-GA-BLN

Summary: Testimony of Salvatore Caiazzo on behalf of NRG Ohio Pipeline Company LLC electronically filed by Teresa Orahood on behalf of Thomas O'Brien