Testimony

Before the
United States Senate
Committee on Environment and Public Works, Subcommittee on Oversight

On

Methane Emissions from the Production Sector of Natural Gas Systems

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Good afternoon Chairman Whitehouse, Ranking Member Inhofe and other members of the Subcommittee. My name is Mark Boling and I am General Counsel and President of the V+ Development Solutions division of Southwestern Energy Company. Southwestern Energy Company is an independent exploration and production company, and is the fifth (5^{th}) largest producer of natural gas in the United States. I appreciate the opportunity to appear before you today and provide testimony regarding methane emissions from the Production Sector of Natural Gas Systems.

At Southwestern, we believe the development of America's natural gas resources is an important part of achieving a secure, low-carbon energy future for our country, but only if it is done right. The good news is that the solutions to "doing it right" are out there and if industry, environmental groups and regulators work together in a collaborative way, these solutions can be found and implemented.

One of the primary roles of our V+ Development Solutions division is to engage the communities impacted by our operations, as well as other stakeholders, to assist us in maximizing the benefits while minimizing the negative impacts of our activities. We believe that by engaging in these "problem solving" dialogues, it is possible to develop "smart regulations" for our industry. When I refer to "smart regulations", I am talking about rules that level the playing field for all

companies and effectively manage risk by achieving the proper balance among the economic, environmental and social impacts of the regulated activities.

Southwestern believes that a good example of how collaboration between industry and regulators can lead to smart regulations is EPA's Natural Gas Star Program. The Natural Gas Star Program is a voluntary partnership that encourages oil and natural gas companies to adopt cost-effective technologies and practices that improve operational efficiency and reduce methane emissions.

Southwestern joined the Natural Gas Star Program in 2005. Since our initial report in 2006, Southwestern has reported cumulative methane reductions of over 37 Bcf (Billion Cubic Feet), primarily due to our use of Reduced Emission Completions (also known as "Green Completions"). Additionally, due to the hard work and innovation of our employees, Southwestern was able to drive down the incremental cost of conducting Reduced Emission Completions in our Fayetteville Shale project from approximately $20,000 per well to $0 per well, while at the same time capturing a significant amount of natural gas that would have otherwise been vented or flared.

The years of collaboration and innovation supported by the Natural Gas Star Program provided key technological and operational practice information to support the recently enacted NSPS, "Quad O"

regulations. Southwestern believes that the "Quad O" regulations are "smart regulations" as they effectively manage VOC (Volatile Organic Compound) emissions (and indirectly methane emissions) from the production sector by requiring proven, cost-effective technologies and practices to reduce VOC emissions. In fact, much of the equipment, controls and practices required by "Quad O" have already been implemented by Southwestern and many other companies that participate in the Natural Gas Star Program.

Finally, I would like to say a few words about another important collaborative effort, the recently released upstream methane emissions study conducted by a team of researchers from the University of Texas and testing firms URS and Aerodyne Research. Since Dr. Allen is providing the Subcommittee with the details of the measurement data gathered from the study, I will limit my comments to the following key findings:

- Total estimated methane emissions from natural gas production were found to be comparable to the most recent EPA estimates;
- Measured methane emissions from hydraulically fractured well completions were found to be significantly lower than the estimates used by the EPA in the national emissions inventory; and

- Measured methane emissions from equipment leaks and certain types of pneumatic controllers were found to be higher than current EPA estimates.

This study shows that the amount of methane emissions from the natural gas production sector can be effectively minimized by applying reasonable emission capture and control practices. It also shows, however, that additional opportunities exist to reduce methane emissions from this sector. Southwestern intends to actively pursue these opportunities by taking the following steps:

- Implement an internal initiative to reduce methane emissions associated with our operations, including a leak detection and repair program;

- Participate in additional studies to gather data on pneumatic controllers and liquids unloading events to increase the data set and improve knowledge;

- Participate in a research and development project to identify or develop cost effective methane emission monitoring devices; and

- Work with other energy industry partners to develop a methane leadership initiative, with a primary goal of reducing methane emissions from the entire natural gas value chain.

Mr. Chairman, this concludes my testimony. I would be happy to answer any questions you may have.