

## QUARTERLY PROGRESS REPORT

**Report Title:** Field Demonstration of a Membrane Process to Separate Nitrogen from Natural Gas: Fourth Quarterly Progress Report

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## **Abstract**

The original proposal described the construction and operation of a 1 MMscfd treatment system to be operated at a Butcher Energy gas field in Ohio. The gas produced at this field contained 17% nitrogen. During precommissioning of the project, a series of well tests showed that the amount of gas in the field was significantly smaller than expected and that the nitrogen content of the wells was very high (25 to 30%). After evaluating the revised cost of the project, Butcher Energy decided that the plant would not be economical and withdrew from the project. In early 2002, Membrane Technology and Research, Inc. (MTR) began to negotiate a marketing and sales partnership with ABB Lummus Global, a large multinational corporation. MTR and ABB Lummus have now completed negotiations and have signed a joint development, marketing and sales agreement with a focus on natural gas applications. Part of the agreement calls for the Randall Gas Technology division of ABB Lummus to provide cost share for the current project.

## **Table of Contents**

Introduction .....	2
Experimental .....	2
Results and Discussion .....	2
Conclusion .....	2
References .....	2

## **Introduction**

The natural gas specification for inert gases is less than 4%. On this basis, about 17% of known U.S. reserves of gas are subquality due to high nitrogen content. Some of this gas can be brought to pipeline specifications by dilution with low-nitrogen-content gas; some is treated by cryogenic condensation and fractionation. Nonetheless, about 1.0 trillion scf of known reserves are currently shut in.

This project covers the first demonstration of a new membrane technology to treat this otherwise unusable gas. The objective of this project is to develop a membrane separation process to separate nitrogen from high-nitrogen-content natural gas. To demonstrate the process, a proof-of-concept plant will be built and operated.

## **Experimental**

No experiments were performed during this reporting period.

## **Results and Discussion**

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## **Conclusion**

Randall will use its contacts in the industry to locate a suitable test site for the demonstration system to be constructed.

## **References**

None cited.