

THE APPLICATION OF DUKE ENERGY FIELD SERVICES TO CONSTRUCT AND OPERATE A HYDROGEN SULPHIDE GAS PIPELINE, THE WEST WADDELL “WW” PIPELINE, ECTOR AND CRANE COUNTIES, TEXAS

APPLICATION REVIEWED BY: Thomas H. Richter, P.E.
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EXAMINER’S REPORT AND RECOMMENDATION
STATEMENT OF THE CASE

This is the unopposed application of Duke Energy Field Services for Commission authority pursuant to Statewide Rules 106, 70 and 36 for approval to construct and operate a hydrogen sulphide (H₂S) gas pipeline in Ector and Crane Counties.

The Commission’s Field Operations Section recommends approval. The Commission’s Pipeline Safety Division has reviewed the application. Field Operations states that the Gas Services Division has not received the information necessary to recommend approval of the T-4 (Application For Permit To Operate A Pipeline In Texas). The examiner recommends Commission approval of the application with the condition that the Gas Services Division approves the T-4.

DISCUSSION OF THE EVIDENCE

The West Waddell “WW” will gather full well stream gas from area wells that produce gas containing hydrogen sulphide. The proposed gathering system will deliver produced gas to the Duke Goldsmith Gas Plant at Goldsmith, Texas (T-4 Permit # 04825). The Goldsmith Gas Plant, a 24 hour manned facility, has been in existence for many years and has its own H₂S contingency plan. The plant processes 160 MMCFD of full wellstream gas containing 15,000 parts per million H₂S. The proposed 16" line will be approximately 32 miles in length connecting the West Waddell Booster site in Crane County to the Goldsmith Gas Plant in Ector County. The normal operating pressure of the line will be 260 psig and the maximum allowed operating pressure is 732 psig. The maximum volume capacity of the line is 50,000 MCFD.

The anticipated H₂S concentration is 20,600 ppm. The 100 ppm and 500 ppm radius of exposure (ROE) is based on the Statewide Rule 36 Pasquill-Gifford equation that estimates the 100 ppm ROE is 7,753 feet and the 500 ppm ROE is 3,543 feet. The line will cross two public roads State Hwy 302 and Interstate 20. The 100 ppm ROE includes the City of Goldsmith (pop. 250). The City of Goldsmith is already within the ROE’s of the Gas Plant (100 ROE @ 13,140' and 500 ROE @ 6,005'). Five low pressure automatic shut down valves will be installed in the line and will be monitored continuously at the Goldsmith Gas Plant Control Center. One valve will be located half way between the booster station and IH-20. The other four valves will be located a half mile either

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side of IH-20 and State Hwy 302. At the IH-20 crossing and one-half mile either side of, the wall pipe thickness of the line pipe will be increased by Fusion Bond Epoxy and Powercrete or Lilly coating which is a highly abrasion and impact resistant coating designed and approved for use in bored crossings.

The contingency plan for the proposed line is incorporated with the Gas Plant's contingency plan and is in accordance with the provisions of Rule 36(c)(9).

All materials will satisfy the requirements described in the latest editions of NACE Standard MR-01-75 and API RP-14E. The handling and installation of materials and equipment used in hydrogen sulphide service are to be performed in such a manner so as not to induce susceptibility to Sulphide stress cracking. The gathering line will be new API 5L X-42/X-52/FBE coated Grade steel pipe equipped with a cathodic protection system for external corrosion control. All valves, flanges, etc shall be constructed of those metals manufactured to be resistant to H₂S. The line will be chemically treated as needed for internal corrosion and monitored with corrosion coupons. H₂S warning signs compliant with Rule 36(c)(6)(A) and (c)(6)(B) will be posted at all public road crossings as well as intervals along the pipeline frequent enough as to provide warning to avoid accidental rupture of the line by excavation. The signs will indicate poison gas, company name and emergency phone numbers. The line will be buried 4 feet below ground level along the right-of-way.

The proposed line will comply with Statewide Rule 36(c)(8). This is an area that has had H₂S gas production and transmission for many years.

Duke Energy Field Services published notice of the application in newspapers of general circulation in Crane and Ector Counties. The notice was published in *The Odessa American* on May 10 and 30, 2006. The notice was published in *The Crane News* on May 11 and June 1, 2006. The application was filed with the Crane and Ector County Clerks on May 5 and May 24, 2006.

FINDINGS OF FACT

1. On May 4, 2006, Duke Energy Field Services filed an application for a permit to construct hydrogen sulphide gas gathering pipeline in Crane and Ector Counties.
2. Duke Energy Field Services published notice of the application in newspapers of general circulation in Crane and Ector Counties. The notice was published in *The Odessa American* on May 10 and 30, 2006. The notice was published in *The Crane News* on May 11 and June 1, 2006. The application was filed with the Crane and Ector County Clerks on May 5 and May 24, 2006.
3. The West Waddell "WW" will gather full well stream gas from area wells that produce gas containing hydrogen sulphide (H₂S).
 - a. The proposed gathering system will deliver produced gas to the Duke Goldsmith Gas

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Plant at Goldsmith, Texas (T-4 Permit # 04825), a 24 hour manned facility, that has been in existence for many years and has its own H₂S contingency plan.

4. The proposed 16" line will be approximately 32 miles in length connecting the West Waddell Booster site in Crane County to the Goldsmith Gas Plant in Ector County.
 - a. The normal operating pressure of the line will be 260 psig and the maximum allowed operating pressure is 732 psig.
 - b. The maximum volume capacity of the line is 50,000 MCFD.
 - c. The H₂S concentration is 20,600 parts per million (ppm).
 - e. Statewide Rule 36's authorized Pasquill-Gifford equation estimates the 100 ppm ROE is 7,753 feet and the 500 ppm ROE is 3,543 feet.
 - f. The line will cross two public roads State Hwy 302 and Interstate 20. The 100 ppm ROE includes the City of Goldsmith (pop. 250).
5. Pipeline materials and construction meet the NACE standards as required by Statewide Rule 36 for hydrogen sulphide service.
6. The contingency plan for the proposed line is incorporated with Gas Plant's contingency plan and is in accordance with the provisions of Rule 36(c)(9).
7. The pipeline will be constructed subject to Commission inspections for compliance with the appropriate Commission Rules pursuant to Statewide Rule 36(c)(6)(7)(8) and (13).
8. The Commission's Field Operations Section recommends approval. The Commission's Pipeline Safety Division has reviewed the application. Gas Services Division has requested information necessary for approval of the T-4 (Application For Permit To Operate A Pipeline In Texas).

CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.
2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.
3. The application complies with Statewide Rules 36, 70 and 106.
4. Approving the application for a permit to construct and operate the proposed gas pipeline is consistent with the rules and safety standards adopted by the Commission.

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EXAMINER'S RECOMMENDATION

The examiner recommends that the application of Duke Energy Field Services for Commission authority pursuant to Statewide Rules 106, 70 and 36 for approval to construct and operate the proposed hydrogen sulphide gas pipeline in Crane and Ector Counties be approved.

Respectfully submitted,

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