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SOUTHWEST GAS CORPORATION

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AZ CORP COMMISSION
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December 22, 2015

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007-2996

Re: **Docket No. G-01551A-14-0024; Decision No. 74875**

Southwest Gas Corporation respectfully submits its first Liquefied Natural Gas (LNG) facility Construction Progress Report pursuant to Decision No. 74875 (Decision), issued December 23, 2014. The Decision authorizes the Company to construct an LNG facility in the Tucson area, and approves a related accounting deferral of up to \$50 million. The authorization to defer costs expires November 1, 2017.

The Decision requires Southwest Gas to file construction progress reports 12 months after issuance of the Decision and every six months thereafter until completion, detailing the construction progress and providing all invoiced project costs incurred. This first report covers the period from January 1 to December 1, 2015.

Respectfully submitted,

Matthew D. Qerr
Regulatory Manager/Arizona

Cc: Tom Broderick, ACC Utilities Division Director
Bob Gray, ACC Utilities Division
Brian Bozzo, ACC Compliance Manager
David Tenney, RUCO Director

Arizona Corporation Commission

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SOUTHWEST GAS CORPORATION

LNG Construction Progress Report

Reporting Period:

January 1, 2015 – December 1, 2015

I. INTRODUCTION

Southwest Gas Corporation (Southwest Gas or Company) hereby submits to the Arizona Corporation Commission (Commission) its first Liquefied Natural Gas (LNG) facility Construction Progress Report (Report) pursuant to Decision No. 74875 (Decision), issued December 23, 2014.

The LNG facility will enhance service reliability and flexibility in natural gas deliveries in Southern Arizona by providing a local storage option operated by the Company and connected directly to its distribution system. The LNG facility offers a number of benefits to Southwest Gas customers. By having readily available local natural gas supply that can be timely dispatched into sections of its distribution system upon demand, Southwest Gas' LNG facility will support the Company's ongoing efforts to enhance the reliability of segments of its distribution system and mitigate against service interruptions resulting from supply shortage events. Furthermore, the LNG facility offers additional reliability benefits, including: (1) the ability to mitigate localized curtailments that could come about due to third-party damage; (2) the ability to mitigate localized interruptions that may result from the performance of required maintenance; and (3) the ability to sustain local system requirements during periods of high system demand.

Southwest Gas' Report covers the period from January 1 through December 1, 2015. During this timeframe, the Company acquired land for the facility, engaged a front-end engineering and design (FEED) consultant, began working on FEED documents, and developed a communications plan.

II. LAND ACQUISITION

One of Southwest Gas' primary objectives after receiving the Decision was to secure land for the LNG facility. The Company evaluated a number of sites in southeast Tucson, in the area of the Company's Houghton Road and Valencia Road taps on the El Paso pipeline system. At the time of the Decision, the Company was in negotiations with the property owners of the three sites located closest to the Company's Valencia Road tap and Houghton feeder system. Due to the proximity of Davis-Monthan Air Force Base (DMAFB) to these potential sites, the Company

held discussions with DMAFB's civil engineer squadron. DMAFB indicated that the two potential sites located closest to the tap site could not be supported by DMAFB due to incompatibility with acceptable arrival-departure corridor land use criteria. As a result, the selected project site, which is supported by DMAFB, is located approximately 4,500 feet north of the Valencia Road tap.

The Company negotiated a purchase price of \$1.6 million for the land acquisition. Prior to closing, the Company performed several due diligence studies. The Company completed seismic, geotechnical, environmental, drainage, land survey, and permitting assessments, all of which indicated that the property was compatible with the proposed LNG facility. The property acquisition was completed October 30, 2015.

Southwest Gas is currently negotiating with VP Commerce Plaza, the landowner between the Valencia Road tap and the LNG site, for an exclusive gas easement in order to connect the LNG facility to the Company's Houghton feeder system with a natural gas pipeline.

III. DESIGN PROCUREMENT

The Company chose to utilize a front-end engineering and design (FEED) process, commonly used in the project delivery process for similar projects in the oil and gas industry. The FEED produces engineering documents and project specifications to sufficient detail to provide the foundation for detailed design and construction, known as EPC (engineering, procurement, and construction). A robust FEED mitigates cost risk by reducing unknowns for EPC contractors.

The Company began a rigorous vetting and selection process for procuring project delivery and consulted its contacts within the industry to recommend qualified FEED consultants. The Company requested qualifications from potential FEED consultants in a formal Request for Information (RFI) process; after scoring the responses, the Company interviewed teams from four of the five submitting consultant firms. Based on the interviews, the Company selected an international consulting firm with extensive worldwide experience in the LNG segment of the oil and gas industry. Southwest Gas compared the firm's blind pricing proposal to pricing for similar work performed by other consultants and found it to be favorable.

IV. FRONT-END ENGINEERING AND DESIGN

The following FEED documents were developed, or are being developed:

- Site general arrangement;
- Design criteria and verification plans for each major discipline;
- Process flow diagrams;
- Piping and instrumentation diagrams;
- Equipment specifications and lists;
- Utility specifications;
- Material take-offs and cost estimates; and
- Plans for site grading and drainage; site access; structures and foundations; effluent, sewer, and solid waste; piping, potable water and onsite water storage; instrumentation and controls; electrical; single line diagrams; area classification drawings; power and control layouts; lighting; security systems; communications systems; corrosion control; and fire protection systems.

Southwest Gas also engaged a risk management consultant company to complete a facility siting study (see below) and quantitative risk analysis for the chosen project site based upon actual historical weather conditions for the site in order to: 1) verify the tank containment type; 2) finalize the site layout and; 3) determine appropriate measures for mitigating risks. The assessment concluded that a single containment tank is acceptable for the project site.

An engineering firm was also engaged to develop a FEED-level tank design in order to produce a 10%± cost estimate. The FEED-level design will help mitigate project costs and overall schedule risks by eliminating unknowns and providing future EPC contractors a better understanding of tank parameters. The additional detail will also provide the Company a baseline for comparing EPC bids and managing change orders during EPC.

Further, the Company completed a preliminary hazardous and operability (HazOp) study to ensure that no equipment or safety related item has been missed that could negatively affect the total installed cost estimate.

V. SITING STUDY

As noted in the Decision, prior to the construction of an LNG facility, 49 CFR Part 193 requires a siting study to determine exclusion distances for thermal radiation resulting from an LNG fire, as well as exclusion distances for the dispersion of flammable vapors.¹ The Commission acknowledged that Southwest Gas initially completed the siting requirement for protection from thermal radiation, but conditioned its approval of Southwest Gas' proposed LNG facility upon the Company completing the siting requirements for flammable vapor dispersion.² Subsequent to the Decision, Southwest Gas completed a final siting study that addresses both siting requirements, and concludes that the LNG facility, as designed, complies with CFR 193.2057 and 193.2059.

VI. STAKEHOLDER ENGAGEMENT

The Company developed a communications framework for engaging project stakeholders, including customers, elected officials, local jurisdictional agencies, the general public, media, and employees. Project materials continue to be developed and refined periodically as the project proceeds.

VII. PROJECT COSTS

As of December 1, 2015, the Company has incurred costs (including costs invoiced but not yet paid) totaling approximately \$2.2 million, including the \$1.6 million purchase of the land.

VIII. PLANNED ACTIVITIES FOR THE NEXT SIX MONTHS

During the next six months, the Company intends to complete the FEED, including all plans and performance specifications, FEED-level tank design, cost estimates, and overall EPC project schedule. The Company will also identify and begin implementing the strategy for

¹ Id. at pg. 10.

² Id. at pg. 14.

soliciting and contracting an EPC design-builder. Additionally, the Company will contract design for offsite roadway and utilities and will design plans for the natural gas pipeline connecting the facility to the Company's feeder system. The Company will apply for air quality, right-of-way, site grading and building, water well and other necessary permits. The Company expects to execute the natural gas easement for the pipeline connection. To provide additional control of site access, the Company will work to abandon the existing, unoccupied public right-of-way located adjacent to the east boundary of the project parcel with Pima County. Additionally, the Company will pursue abandonment of existing unoccupied utility easements within the property.

IX. CONCLUSION

The Southern Arizona LNG facility will enhance service reliability and flexibility in natural gas deliveries in Southern Arizona by providing a local storage option operated by the Company and connected directly to its distribution system. By having readily available local natural gas supply that can be timely dispatched into sections of its distribution system upon demand, Southwest Gas' LNG facility will support the Company's ongoing efforts to enhance the reliability of segments of its distribution system and mitigate against service interruptions resulting from supply shortage events. The Company looks forward to updating the Commission on its continued progress.