

Natural Gas Supply

6.1 Introduction

This section discusses the natural gas supply for the South Bay Replacement Project (SBRP). The Project will require construction of a new 16-inch carbon steel gas line, approximately 3,450 feet long, to connect to an existing San Diego Gas and Electric's (SDG&E) gas line located in the utility easement along the eastern project boundary. The new line can be constructed entirely within the utility easement. SDG&E has provided its workplan for the interconnect and new natural gas pipeline that will serve the SBRP that describes the interconnection and pipeline routing, and constructions (see Appendix 6A).

The pipeline route and construction method are described in Sections 6.2 and 6.3, respectively. Pipeline operations are described in Section 6.4 and Section 6.5 addresses permits and approvals that may be required for construction of the natural gas pipeline.

6.1.1 Natural Gas Availability

California's existing gas supply portfolio is provided by regionally diverse sources and includes supplies from California, traditional Southwest supply sources, Mexico, the Rocky Mountains, Canada, and on- and off-shore local production.

SDG&E's natural gas transmission system receives supply from Southern California Gas Company (SoCalGas) at the Rainbow and San Onofre Metering Stations and from Transportadora de Gas Natural de Baja California (TGN) in Mexico at the Otay Mesa Metering Station. SoCalGas has a diverse supply of gas, which includes supplies from El Paso Natural Gas Company, Transwestern Pipeline Company, Kern River Gas Transmission Company, Mojave Pipeline Company, Questar Southern Trails Pipeline Company, Gas Transmission Northwest via Pacific Gas & Electric's intrastate system, and local California gas producers.

Although the 2005 Integrated Energy Policy Report (IEPR) identifies potential risks associated with declining production in most U.S. supply basins, the report identifies the planned construction of liquefied natural gas import terminals as a response that will "...increase natural gas imports to the U.S. over the next 10 years and also help meet California's growing natural gas needs."¹ The 2005 IEPR identifies several liquefied natural gas import facilities that have been proposed in California and Mexico. Sempra's Energia Costa Azul facility in Baja California Norte is under construction and is expected to be online in 2007. A second Baja project, Chevron's Terminal GNL Mar Adentro de Baja has received initial permits for an offshore facility. Two other projects, the Moss Maritime LNG and Sonora LNG facilities, have also been proposed in Mexico. Projects proposed in California include the Long Beach LNG Import Project and two offshore projects: the Cabrillo Deepwater Port and the Clearwater Port. Development of these LNG facilities will

¹ Integrated Energy Policy Report, CEC-100-2005-007-CMF, November 2005, p. 10.

contribute to the future availability and reliability of the natural gas transmission system. As a result, fuel availability and reliability for the proposed project are considered to be adequate.

A further consideration when evaluating the availability of natural gas for the SBRP is the fact that the Project will replace a larger, less-efficient generation facility. Given a 34 percent improvement in generation efficiency (6,993 British thermal units per kilowatt hour [Btu/kWh] versus 10,890 Btu/kWh), the SBRP will require less fuel to produce the same amount of power as the existing South Bay Power Plant (SBPP). Even if the output of the SBRP were to double its output from the SBPP's average net output of 1,800 GWh/yr in 2004-2005 to as much as 3,500 GWh/yr, the demand for natural gas will only increase by one-third, or by 6 million cubic feet per year. The SBRP will reduce the maximum fuel gas demand on this portion of the SDG&E gas distribution system by approximately 65 million standard cubic feet per day (mmscfd). This is the differential between the maximum fuel gas demand of the existing SBPP (approximately 177 mmscfd) and the SBRP maximum demand (approximately 112 mmscfd).

In summary, various large and diverse gas supplies and conveyance systems are currently available for supplying natural gas fuel to the Project and further improvements are anticipated. Acquiring natural gas for delivery to the Project over the long-term is reasonable because of regionally available fuel gas supplies. Competition has expanded the available sources of gas supply, provided market liquidity, and has increased transportation access significantly over the past few years, and further improvements are anticipated, such as LNG imported from facilities approved and/or under construction in Mexico. Implementation of FERC Order 636, the California Public Utilities Commission's capacity brokering program, the separation of utility electric generation from utility's system gas supply, and the ongoing addition of new interstate pipeline capacity provide direct access to gas supplies, interstate transportation, and related services to all non-core customers. Figure 6.1-1 presents a map of the SDG&E natural gas system.

6.2 Proposed Route

Natural gas for SBRP will be provided from a new pipeline interconnecting to SDG&E's existing pipeline located in the utility easement along the eastern fence line of the existing SBPP. The new 16-inch natural gas line, approximately 3,450 feet long, will tie into existing 16-inch and 24-inch gas lines currently supplying the SBPP. The proposed route is shown in Figure 1.1-4. The entire route will be constructed within the SDG&E easement. Appendix 6A presents SDG&E's proposal for the natural gas line and service for the SBRP.

Pipeline construction will be using the open trench method. The pipeline will be constructed below-grade along the entire route, except at the line termination point at the SBRP. As the pipeline is located in the SDG&E easement and is relatively short, alternative routes were not addressed.

6.3 Construction Practices

6.3.1 Gas Pipeline

The natural gas pipeline will be constructed of carbon steel in accordance with the American Petroleum Institute (API) specification for line pipe. The pipe will have factory-applied corrosion protection coating. Joints will be welded and inspected using x-ray.

The natural gas pipeline will be constructed using several segments. Installation of the main segment will require approximately 8 to 10 workers. The remaining workers will be in support positions delivering materials, operating loading and unloading equipment.

The easement will be accessed over existing roads. Most major pieces of construction equipment will remain along the easement during construction. The laydown and worker parking areas will provide worker parking and will serve as the location for storing pipe and other pipeline construction materials. No offsite staging areas will be required for this Project. The pipe materials will be transported directly to the work site and strung along the ditch line on a daily basis, as needed. The balance of the pipe is stored at a central location on the SBPP site and loaded out on a daily basis. Pipeline construction will take approximately 3 months.

The construction of the natural gas pipeline will consist of the following:

1. **Trenching**— The trench will be excavated between 24 inches and 30 inches wide. The depth of the trench will be 55 inches minimum to achieve 42-inch minimum cover. Typically the trench is excavated 6 inches deeper than the minimum to allow for padding material if required.
2. **Stringing**— Consists of trucking lengths of pipe to the easement and laying them on wooden skids beside the open trench.
3. **Installation**— Consists of bending, welding, and coating the weld-joint areas of the pipe after it has been strung, padding the ditch with sand or fine spoil, and lowering the pipe string into the trench. Bends will be made using a cold bending machine or shop-fabricated as required for various changes in bearing and elevation. Welding will meet the applicable API standards and will be performed by qualified welders. Welds will be inspected in accordance with API Standard 1104. Welds will undergo 100 percent radiographical inspection by an independent, qualified radiography contractor. All coating will be checked for defects and will be repaired before lowering the pipe into the trench.
4. **Backfilling**— Consists of returning spoil back into the trench around and on top of the pipe, ensuring that the surface is returned to its original grade or level. The backfill will be compacted to protect the stability of the pipe and to minimize subsequent subsidence.
5. **Plating**— Consists of covering any open trench in areas of foot or vehicle traffic at the end of a workday. Plywood plates will be used in areas of foot traffic and steel plates will be used in areas of vehicle traffic to ensure public safety. Plates will be removed at the start of each workday. Efforts will be made to minimize the length of open trench along the easement.

6. **Hydrostatic testing** – Consists of filling the pipeline with water, venting all air, increasing the pressure to the specified code requirements, and holding the pressure for a period of time. The water for use in testing will be obtained from a local fire hydrant, as arranged by the construction contractor. After hydrostatic testing, the test water will be chemically analyzed for contaminants and discharged to the sanitary sewer system under a permit obtained by SDG&E, unless the analysis shows that the water is contaminated. In that case, the water will be trucked to an appropriate disposal facility. Temporary approvals for test water use and permits for discharge will be obtained by the construction contractor or SDG&E, as required.
7. **Cleanup** – Consists of restoring the easement by removing any construction debris, grading to the original grade and contour, and revegetating or repairing where required.
8. **Commissioning** – Consists of cleaning and drying the inside of the pipeline, purging air from the pipeline, and filling the pipeline with natural gas.
9. **Safety** – Consists of using SDG&E’s standard safety plan and the Department of Transportation’s Minimum Federal Safety Standards for the Project, or if constructed by others, the contractor will prepare a safety plan. These plans will address specific safety issues, traffic control, working along traveled county streets, and other areas, as required by permits.

6.3.2 Metering Station

A gas-metering station will be required at the SBRP site to measure and record gas volumes. Construction activities related to the metering station will include installing above- and belowground gas piping, metering equipment, and possibly pigging facilities. An electric power supply will be installed to provide power for metering station operation, lighting and communication equipment. A chain-link fence will be installed around the gas metering station for security.

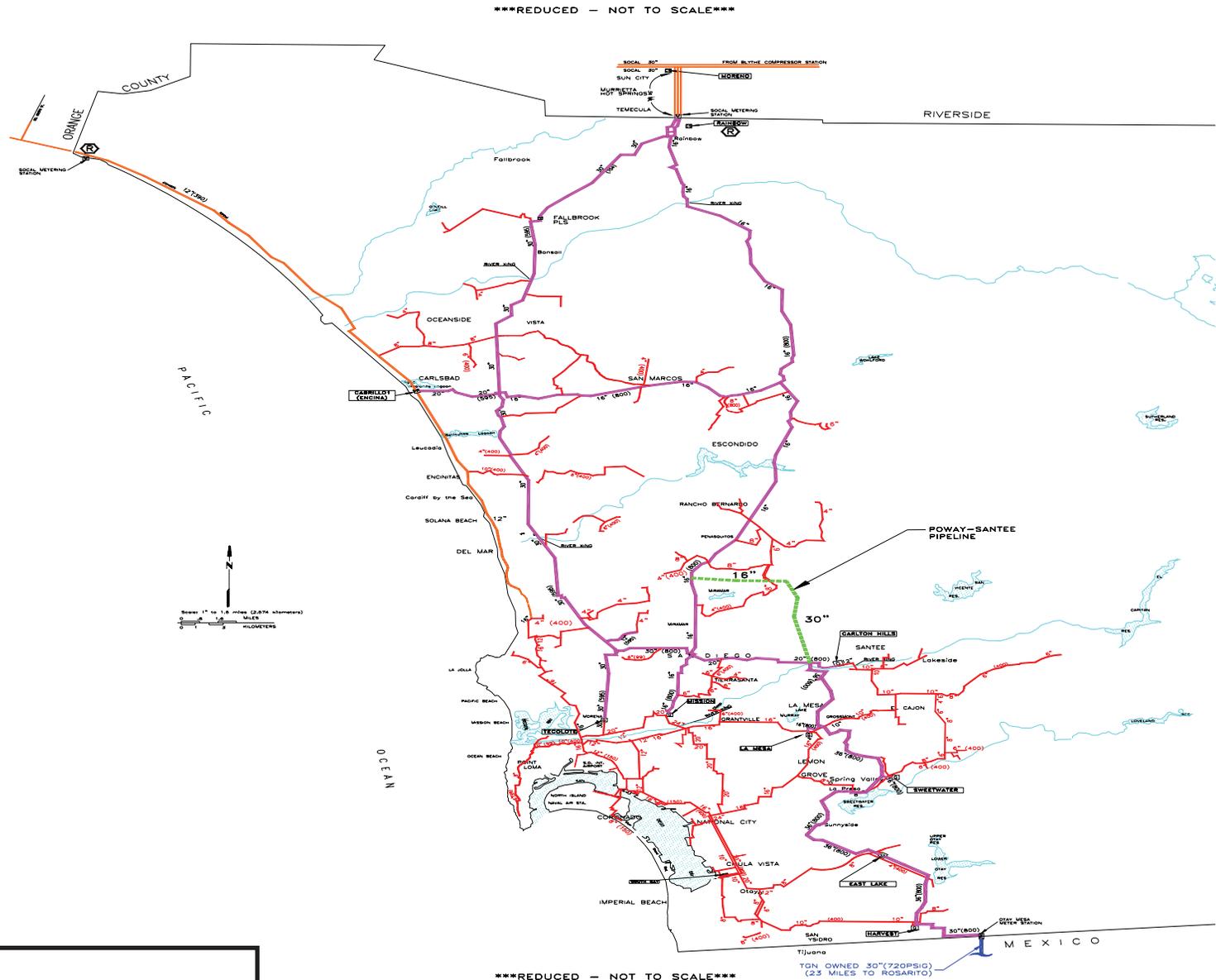
6.4 Pipeline Operations

The natural gas supply pipeline will be designed, constructed, and operated in accordance with 49 Code of Federal Regulations (CFR 192) and California Public Utilities Commission General Order No. 112. Specifically, the pipeline will be designed in accordance with the standards required for gas pipelines in proximity to populated areas, based on actual population densities along the proposed pipeline route. It will be installed a minimum of 36 inches deep, as required by the Code of Federal Regulations.

SDG&E’s standard operations and maintenance plan will be in place, addressing both normal procedures and conditions and any upset or abnormal conditions that could occur. Isolation block valves will be installed at both ends of the pipeline. These valves will be manually controlled, lockable, gear-operated ball valves. In addition, periodic leak surveys and cathodic protection surveys will be performed along the pipeline, as required by Title 49 of the Code of Federal Regulations, section 192. The pipeline will be continuously protected by a cathodic protection system. SDG&E’s standard emergency plan will provide prompt and effective responses to upset conditions detected along the pipeline or reported by the public. This plan is reviewed with local agencies annually.

SDG&E's has a proactive damage prevention program in place that will be applied to the pipeline. Markers identifying the location of the pipeline and the markers will identify a toll-free number to call before any excavation in the vicinity of the pipeline.

SDG&E will own and operate the metering facility to measure the gas supply to the Project. A pipeline Supervisory Control and Data Acquisition (SCADA) system will provide flow rate and pressure data to SDG&E and LSP South Bay, LLC. Communication with SDG&E pipeline operations will be by dedicated telephone lines or other means, such as Cellular Digital Pocket Data (CDPD).



- LEGEND**
- RECEIPT POINT
 - TRANSMISSION PIPELINES
 - SOCAL PIPELINES
 - HIGH PRESSURE DISTRIBUTION PIPELINES
 - TRANSPORTADORA DE GAS NATURAL (TGN) PIPELINE
 - FUTURE TRANSMISSION ADDITIONS

Source: San Diego Gas and Electric, February 28, 2001

FIGURE 6-1
SAN DIEGO GAS AND ELECTRIC'S
NATURAL GAS DISTRIBUTION SYSTEM
 SOUTH BAY REPLACEMENT PROJECT
 CHULA VISTA, CALIFORNIA