
**SAN DIEGO GAS & ELECTRIC COMPANY
AND
SOUTHERN CALIFORNIA GAS COMPANY
PIPELINE SAFETY & RELIABILITY PROJECT
PRELIMINARY BLASTING PLAN**

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PREPARED BY:



PREPARED FOR:



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Attachment A: Contractor Blasting Plan

1 – INTRODUCTION

This Preliminary Blasting Plan (Plan) describes how San Diego Gas & Electric Company’s (SDG&E’s) and Southern California Gas Company’s (SoCalGas’s) blasting contractor will reduce potential impacts associated with construction-related noise and vibrations from blasting during construction of the Pipeline Safety & Reliability Project (Proposed Project). The Proposed Project involves construction of an approximately 47-mile-long, 36-inch-diameter natural gas transmission pipeline in San Diego County (County). The Proposed Project crosses the County, City of San Diego, City of Escondido, City of Poway, and Marine Corps Air Station Miramar.

This Plan was prepared in accordance with Applicants-Proposed Measure (APM-) NOI-02 of the Proponent’s Environmental Assessment, which requires that a blasting plan be prepared for locations requiring blasting.¹ APM-NOI-02 also requires that the Plan include requirements for noticing, planned blasting methods, and measures for minimizing noise related to blasting.

Construction of the Proposed Project is anticipated to require 12 to 18 months to complete. This Plan pertains to all sites where blasting may be necessary during construction. In addition, this plan may need further revision depending upon the California Public Utilities Commission (CPUC) Final Environmental Impact Report/Environmental Impact Statement.

2 – OBJECTIVES

The purpose of this Plan is to support compliance with Proposed Project requirements in the event that blasting is conducted during construction. The blasting practices in this Plan are intended to accomplish the following objectives:

- Reduce potential impacts associated with construction-related noise and vibrations related to blasting;
- maintain consistency with federal, state, and local laws and ordinances related to blasting; and
- provide procedures for conducting a pre-blast survey and preparing a contractor blasting plan.

3 – APPLICABLE REGULATIONS

The following regulations establish minimum standards for the manufacture, assembly, possession, storage, transportation, repacking and distribution, and use of explosive materials at places of employment:

- Bureau of Alcohol, Tobacco, and Firearms Publication P5400.7 (2012) Organized Crime Control Act of 1970, Title XI (Public Law 91-452) – Federal Explosives Law and Regulations

¹ SDG&E and SoCalGas are jointly referred to as the “Applicants” when discussing APMs.

- Title 27, Part 55 of the Code of Federal Regulations (CFR) – Storage of Explosives
- Title 27, Part 181 of the CFR – Commerce in Explosives
- Title 29, Subpart U, Section 1929.900 et seq., of the CFR – Safety and Health Regulations for Construction – Blasting and Use of Explosives
- Title 29, 1910.109 of the CFR – Explosives and Blasting Agents
- Title 49, 177 of the CFR – Carriage by Public Highway
- California Occupational Safety and Health Standards Title 8, Group 18 Sections 5236-5374
- California Department of Transportation Standard Specifications Sections 7-10, 19-2.03
- Title 3, Division 3, Chapter 2 of the San Diego County Code of Regulatory Ordinances, Section 33.201, et. seq.

4 – APPLICANTS-PROPOSED MEASURE

The Plan is being prepared in part to satisfy APM-NOI-02, which states the following:

“If blasting is deemed necessary for the construction of project components, the Applicants shall conduct a pre-blast survey and prepare a blasting plan. The blasting plan will be site specific, based on the locations of required blasting and the results of a Proposed Project-specific geotechnical investigation. The blasting plan will include a description of the planned blasting methods, an inventory of receptors potentially affected by the planned blasting, and a schedule for the blasting activities. The blasting plan will include requirements for noticing, as well as measures to minimize noise related to blasting to the extent feasible.”

5 – PRE-BLASTING PROCEDURES

5.0 IDENTIFICATION OF BLASTING LOCATIONS

The Proposed Project crosses areas where surface or subsurface rock may preclude the use of mechanical equipment to grade the right-of-way (ROW) or excavate the trench. In these areas, blasting may be used. Geotechnical investigations will be conducted in areas where the use of blasting may be required (e.g., locations along the ROW with visible outcrops) to determine where blasting may be necessary. In certain situations, the need for blasting may be determined while construction is underway (e.g., rock is encountered while excavating the trench).

5.1 BLASTING CONTRACTOR

If blasting is required, SDG&E and SoCalGas will obtain the following information about the blasting contractor at least seven days prior to blasting:

- Blasting contractor name and address
- Certificate of liability insurance
- Licensed blaster credentials
- Contact person for project blasting
- Blasting plan designer contact information

- Safety officer contact information
- Local fire and law enforcement agencies responsible for project blasting
- Explosives storage plan
- Contractor’s blasting procedures
- Material safety data sheets and manufacturer data sheets for explosives
- Demonstration of capability

Only personnel experienced in handling explosives will be permitted to supervise, handle, haul, or detonate explosives. No one will be permitted to conduct or direct a blasting operation unless they hold a valid Blaster’s Certificate, if it is required by the applicable jurisdiction.

5.2 PRE-BLAST SURVEY

A pre-blast survey of receptors and structures within a minimum radius of 600 feet—or as otherwise specified by the blasting contractor—from the identified blasting site will be conducted, along with a survey of other sensitive receptors that could reasonably be affected by blasting. The pre-blast survey will be used to identify sensitive receptors and residences that require notification, as described further in Section 6.0 Notifications.

5.3 CONTRACTOR BLASTING PLAN

Site-specific blasting plan(s) will be prepared by the blasting contractor at least seven days prior to blasting activities. The contractor blasting plan will be prepared in compliance with Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the United States Department of Interior’s Office of Surface Mining Reclamation and Enforcement. The contractor blasting plan will include a form that will be filled out for each blasting area to address the following:

- The locations of the proposed blasting.
- A description of the planned blasting process and methods.
- Calculations to determine the area affected by the planned blasting in accordance with the County of San Diego Ordinance No. 9962 and the “County of San Diego Guidelines for Determining Significance - Noise,” dated January 27, 2009.
- Noise calculations associated with blasting activities and all supplemental construction equipment that demonstrate, where feasible, that construction blasting will occur infrequently enough that it will not exceed the applicable jurisdiction’s impulsive noise standard. Blasting will occur less than 25 percent (15 minutes) during a one-hour period due to the short duration of a blast, as required by the County, and less than 15 minutes during a 24-hour period, as required by the City of Poway. Typically, when exceeding the City of San Diego’s and/or the City of Escondido’s typical construction noise limits, permission (e.g., noise permit or variance) must be obtained from the applicable

jurisdiction. The Proposed Project is not under the authority of local governments². However, SDG&E and SoCalGas will meet and confer with the relevant jurisdictions if construction noise exceeds locally adopted noise limits and will apply for deviations from the adopted noise standards if required by local ordinance. Allowable construction noise levels and time periods for each of the local jurisdictions crossed are provided in Section 6.2 Blast Noise and Vibration. If adherence to local noise standards cannot be met, the contractor may coordinate blasting to occur in absence of residents, or at other acceptable times, to avoid nuisance or annoyance complaints.

- Air-blast limits, ground vibrations, and maximum peak particle velocity for ground movement, including provisions to monitor and assess compliance with the air-blast, ground vibration, and peak particle velocity requirements.
- Procedures to address line control to full depth and controlled blasting techniques to create minimum breakage outside the line control and maximum rock fragmentation within the target area.
- SDG&E, SoCalGas, and/or the blasting contractor will coordinate with the County, City of San Diego, City of Escondido, and/or City of Poway, as applicable, to obtain any necessary blasting permits.

In addition, the contractor blasting plan will include the types of explosives/initiation system and blasting products that will be used; methods to be used to minimize hole-to-hole propagation; the anticipated drill and blast pattern; and charge weights and delays. The contractor blasting plan(s) will be included as Attachment A: Contractor Blasting Plan.

6 – BLASTING PROCEDURES

The following subsections describe the typical procedures and practices related to blasting activities, including the typical sequence of activities, allowed timeframes, noise attenuation, safety measures, storage of explosives, and record-keeping.

6.0 NOTIFICATIONS

Prior to blasting, SDG&E and SoCalGas will send a notice to sensitive receptors and residences within 600 feet³ of blasting no less than 24 hours and no more than one week prior to planned blasting events, or in accordance with local requirements. The appropriate federal, state, and local agencies will also be notified prior to storing or using explosives on the ROW as required by the blasting permit or applicable regulation. Contact information for the Proposed Project

² Pursuant to Article XII, Section 8 of the California Constitution, the CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities.

³ Section 35.3077.301 of the County of San Diego Code of Regulatory Ordinances (Ordinance No. 9044) states that notification is required to residences and businesses within 600 feet of any potential major blast location and within 300 feet of any minor blast location.

public liaison will be included in the notification. Signs may be installed at areas near the blast site and as recommended by the blasting contractor.

The blasting contractor will also comply with the “One Call” (otherwise known as “DigAlert”) notification requirements. The One Call Center will inform underground utilities or pipeline owners of any called-in excavation activities that could potentially affect underground utilities. One Call must be notified by calling 811 at least 48 hours and no more than 14 days hours prior to the excavation activity.

6.1 BLASTING PROCESS

The blasting contractor will specify the blasting process to be used in Attachment A: Contractor Blasting Plan. Special blasting controls may be required in the vicinity of power lines, telephones lines, fiber optic lines, existing pipeline facilities, structures, water wells, springs, and/or buildings; or where necessary to preclude the possibility of damage due to fly-rock, shock waves, vibrations, or changes to hydraulic conductivity of the bedrock near important springs and wells. Special blasting controls include a combination of blast design, adequate collaring, and matting. Matting to control fly-rock includes, but is not limited to, fabricated mats, overburden, and sand-pad matting. Fly-rock that leaves the ROW will be collected immediately and either returned to the ROW or disposed of at disposal sites approved by SDG&E and SoCalGas.

6.2 BLAST NOISE AND VIBRATION

To reduce potential impacts related to noise, blasting will be completed within the timeframes allowed by the applicable local jurisdiction. Construction noise will be no more than an average sound level of 75 A-weighted decibels [dBA] and is allowed within the following timeframes:

- County of San Diego: between 7:00 a.m. and 7:00 p.m., Monday through Saturday
- City of San Diego: between 7:00 a.m. and 7:00 p.m.
- City of Escondido: between 6:00 a.m. and 6:00 p.m., Monday through Friday, and 9:00 a.m. and 5:00 p.m. on Saturdays
- City of Poway: between 7:00 a.m. and 5:00 p.m., Monday through Saturday

Public holidays may have different requirements, and emergency work may be approved outside of the allowed construction timeframe. Variances or noise permits are typically required by the applicable local jurisdiction for construction noise levels that exceed 75 dBA or the allowed timeframes. Though local permits will not be required for the Proposed Project⁴, SDG&E and SoCalGas will meet and confer with the relevant jurisdictions if construction noise exceeds locally adopted noise limits and will apply for deviations from the adopted noise standards if required by local ordinance.

In addition, a rock-anchoring or min-pile system may be used to reduce the risk of damage to structures during blasting activities Physical damage to potentially vulnerable structures will be

⁴ While SDG&E and SoCalGas will coordinate with local jurisdictions regarding construction noise, the Proposed Project is not under the authority of local governments.

addressed by avoiding construction blasting near the structures wherever possible, and non-blasting construction methods will be evaluated, if necessary. If adversely affected, structures will be restored to an equivalent condition, and fair compensation for lost use will be provided to the owner.

6.3 SAFETY MEASURES

Approved safety measures will be employed during blasting operations to prevent damage to adjacent resources, residences, utilities, and roadways. As discussed previously, these measures will include blasting controls to limit fly-rock, air blast, and vibrations near sensitive areas. Warning signals, signage, and procedures to protect human health and safety are discussed in the following subsections. The blasting contractor will specify any site-specific safety measures that will be implemented.

6.3.0 General Safety Requirements

Only personnel thoroughly experienced in handling explosives will be permitted to supervise, handle, haul, load, or shoot explosives. In jurisdictions where the licensing of blasters is mandatory, the blasting contractor will provide SDG&E and SoCalGas with proof of the necessary certification for every worker before any crew assignment.

The blasting contractor will not leave loaded holes overnight, unattended, or unprotected. Explosives will only be primed immediately before use. No explosives or blasting agents will be left unattended on the ROW at any time.

The blasting contractor will determine the appropriate buffer distances from the blasting zone from which personnel will stand back, consistent with all applicable laws and regulations. The blasting contractor may install additional signage and post flagmen on roadways or trails near the blast area to ensure public safety. If blasting operations occur within the roadway, traffic will be stopped as necessary during blasting operations.

6.3.1 Warning Signs and Signals

The following subsections provide details on potential measures that the blasting contractor may utilize during blasting operations.

Signs and Access Control

The blasting contractor may post warning signs and guards at all points of access to the blasting area, including trails. The warning signs will comply with the requirements of the applicable jurisdictions. The location and content of signage will be at the direction of the blasting contractor and in accordance with all applicable laws and regulations.

All access roads to blasting sites will be blocked off and signed while blasting operations are taking place. Flagmen and/or guards may be posted at roadways, trails, construction roads, or other access points to the blast area.

Blast Site Clearance

Prior to initiating the blast warning system, the blaster will do the following:

- complete the blast inspection;
- clear all personnel from the defined blast area, as identified by the blasting contractor;
- ensure that all ROW traffic—as well as road and access road traffic, if applicable—is halted;
- confirm that the guards are posted and the controlled area is secure; and
- retreat to a safe firing distance.

Blast Signals

The blasting contractor will use an acceptable air horn or siren to give the proper blasting warning and “all clear” signals. The warning system used for blast signals will produce a sound from the air horn or siren that is distinct from any other signals used on construction. Use of vehicle horns as blast signals is not permitted. The following audible blast warning system may be employed:

- **Blast Imminent:** Three minutes before the blast is to be detonated, the blaster will give three short blasts of the air horn or siren. If there is an interruption to the blast routine once the “Blast Imminent” signal has been given, the entire blast signal procedure will begin again.
- **Blast Signal:** Three minutes after the “blast imminent” signal has been given, the blaster will give one short blast of the air horn or siren, followed by detonations of the explosives.
- **All Clear Signal:** The blaster will check the blast site to ensure that all charges have detonated. Once this assessment has been confirmed, the blaster will give one long blast of the air horn or siren.

6.3.2 Fire Safety

The presence of explosive materials on the Proposed Project site could potentially increase the risk of fire during construction. To reduce this risk, the blasting contractor will strictly adhere to all requirements of SDG&E’s or SoCalGas’ standard practices or the project-specific Fire Prevention and Suppression Plan, if required, and blasting will be restricted during periods of red flag warnings or as otherwise determined. In addition, special precautions related to blasting operations include the following:

- Prohibit ignition devices or sources within 50 feet of an explosives storage area.
- Maintain magazine sites so that they are clear of fuels and combustible materials, and that the structures are well-ventilated and fire-resistant.
- Protect magazines from wildfires that could occur in the immediate area (this will be accomplished by removing all vegetation within 50 feet of the storage container).

6.4 EXPLOSIVES STORAGE

The blasting contractor will obtain the necessary permits and comply with all conditions of Title 27, Part 55 of the CFR that govern the storage of explosives. It is anticipated that local blasting contractors will remove explosive materials from the Proposed Project site daily and store the materials at their own facility. However, if the blasting contractor chooses to store explosive materials at the Proposed Project site, all powder magazines will be located in a secure, remote area within the staging yards and will be kept locked. Powder and detonators will never be stored together in the magazine, and any vehicle used to transport explosives from the magazine to the blast site will conform to all applicable federal and state regulations. As required by federal statutes, the blasting contractor will maintain an inventory and use record for all explosives and detonating caps that will be reconciled at the end of each workday, and will include the number of misfires and their dispositions. The inventory and use record will be available for inspection by SDG&E and SoCalGas and jurisdictional authorities at all times. SDG&E and SoCalGas will provide to local law enforcement personnel the location, including Global Positioning System coordinates, of the explosive storage areas.

6.5 RECORD-KEEPING

SDG&E and SoCalGas will keep a record of each blast for at least one year from the date of the last blast that is conducted for the Proposed Project.

7 – REFERENCES

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ATTACHMENT A: CONTRACTOR BLASTING PLAN

The contractor blasting plan will be prepared prior to construction and will be provided once available.