

4.6 PUBLIC SAFETY AND HAZARDS

4.6.1 SETTING

Implementation of the proposed program may involve construction in areas characterized by industrial, commercial, and residential land uses. Proposed FIG installation activities would occur within or adjacent to existing public right-of-ways where utility lines are generally located within developed environments. Residences located near possible construction areas and facility operations are considered sensitive receptors for purposes of this analysis. The program does not propose installation or establishment of new gas lines, but instead involves only the modification of existing gas pipeline facilities. Construction activities, although minimal, could occur in public rights-of-way in industrial areas known to contain contaminated soils.

PUBLIC SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. However, delivery of natural gas by pipeline is consistently the safest mode of transportation.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic but is classified as a simple asphyxiate, posing a slight inhalation hazard. If methane is breathed in high concentration, oxygen deficiency can occur, resulting in serious injury or death.

Gas flowing from higher to lower pressure is the fundamental principle of the natural gas delivery system. The amount of pressure in a pipeline is measured in pounds per square inch (or “psi”). Transmission systems are generally long and straight pipelines that are large in diameter and operate at high volumes and high pressures. Distribution systems are constructed in pipe configurations that create grids, use small diameter pipe and operate at low volumes and low pressures.

When natural gas in a transmission line reaches a local gas utility, it moves into a distribution line that typically ranges from 2 inches to 24 inches in diameter. Sections of a distribution system are regulated to operate at different pressures. The closer natural gas gets to a customer, the smaller the pipe diameter and the lower the pressure of the gas to optimize efficiency of the gas line. The gas pressure in a distribution line is continuously monitored by the local gas utility for sufficient flow rates that remain below the maximum pressure for each segment of the system. Distribution lines typically operate at less than one-fifth of their design pressure.

The program involves the modification to existing natural gas pipelines utilizing hot tap procedures avoiding the need to depressurize the system during FIG installation. The integrity of a pipeline is key to its safety within the distribution system to avoid natural gas leaks or explosions either during installation or operation of the FIG pipeline.

REGULATORY SETTING

Federal

The Office of Pipeline Safety (OPS) of the Department of Transportation (DOT) works with the oil and natural gas pipeline industries to further improve safety and environmental protection in cost-effective ways. The primary regulatory basis for achieving these safety goals in the pipeline industry is the set of regulations embodied in Title 49 of the Code of Federal Regulations (CFR) Parts 190-199.

Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues by prescribing safety standards for transportation of natural gas by pipeline. The regulations are written as minimum performance standards, setting the level of safety to be attained and allowing the pipeline operators discretion in achieving that level. In addition, pipeline companies, including SCG/SDG&E, perform discretionary activities over and above the regulations to achieve these goals.

The standards in the Federal regulations become more stringent as the human population density increases. Part 192 defines area classifications, based on population density in the vicinity of the pipeline, that correspond to minimum safety requirements. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline.

Class locations representing more populated areas require higher safety factors in pipelines design, testing, and operations. Class locations also specify the maximum spacing allowed for sectionalizing block valves. Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, MAOP, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. The four area classifications are defined as follows:

- Class 1 – location with 10 or fewer buildings per mile intended for human occupancy;
- Class 2 – location with more than 10 but less than 46 buildings per mile intended for human occupancy
- Class 3 – location with 46 or more buildings per miles intended for human occupancy or where the pipeline lies within 100 yards of any building or small well-defined outside area occupied by 20 or more people during normal use; and
- Class 4 – location where buildings with four or more stories aboveground are prevalent per mile.

State

The Utilities Safety Branch (USB) of the CPUC enforces Federal Pipeline Safety Regulations and CPUC General Order No. 112-E (Rules Governing Design, Construction, Testing, Maintenance and Operation of Utility Gas Gathering, Transmission and Distribution Piping Systems) through its natural gas safety program. The USB administers its natural gas safety program by auditing the facilities of investor-owned natural gas utilities and municipalities in California for compliance with the applicable codes. The audit consists of reviewing operation and

maintenance records, evaluating emergency procedures, and performing random field inspections of the natural gas facilities.

HAZARDOUS MATERIALS

CONTAMINATED SOIL

The study area may potentially contain a multitude of existing hazardous sites. They are more likely to exist in urban areas with industrial uses, however they may also be scattered throughout the study area where other land uses persist. Given the size of the study area, thousands of hazardous waste generators, leaking tank sites and toxic spills within 1,000 feet of potential pipeline access locations are possible.

During construction activities, contaminated soil or groundwater may be encountered. If encountered, these contaminated materials could be classified as hazardous wastes, and would then be disposed of in accordance with applicable County hazardous materials regulation. All institution controls governing the storage, transportation, use, handling, and disposal of hazardous materials would be followed by SCG/SGG&E personnel during FIG installation.

METHANE AND HYDROGEN SULFIDE GAS SEEPAGE

Naturally occurring methane gas and hydrogen sulfide gas (H₂S) have been known to migrate into shallow geology deposits in certain areas of the Southern California region. In 1985, an explosion occurred in the basement of a commercial retail outlet store (Ross Dress for Less) in Los Angeles caused by methane accumulation through subsurface seepage. Methane gas and hydrogen sulfide (H₂S) can follow fissures or improperly abandoned oil wells to the surface or near-surface strata from deeper oil producing formations. Areas above known petroleum resources are of particular concern including central Los Angeles (Fairfax District), Huntington Beach, and Brea. Methane may be trapped under impervious surfaces where concentrations can cause explosion or hazardous breathing conditions. H₂S can be toxic to humans at elevated concentrations. Excavations may experience pockets of accumulated methane or H₂S gas at shallow depths.

REGULATORY SETTING

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Chemical and physical properties cause a substance to be considered hazardous, including the properties of toxicity, ignitability, corrosivity, and reactivity. These properties are defined in the California Code of Regulations (CCR), Title 22, Sections 66261.20-66261.24. A “hazardous waste” is any hazardous material that is discarded, abandoned, or to be recycled. The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25117).

For purposes of this analysis, hazardous materials include the raw materials and products mentioned above, and hazardous waste includes waste generated by facilities and businesses or waste material remaining onsite as a result of past activities. Applicable regulations and policies considered relevant to the proposed program are summarized below.

Federal

The U.S. Environmental Protection Agency (EPA) regulates the management of hazardous materials and wastes. The primary federal hazardous materials and waste laws are contained in Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Toxic Substances Control Act (TSCA). These laws apply to hazardous waste management, soil and groundwater contamination, and the controlled use of particular chemicals. In California, EPA has delegated most of its regulatory responsibilities to the state. TSCA allows EPA to ban (or phase out) the use of chemicals that may present unreasonable risks to public health or the environment.

State

California regulations are equal to or more stringent than federal regulations. The U.S. EPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management programs. State regulations require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment.

The state agencies most involved in enforcing public health and safety laws and regulations include the Cal-EPA Department of Toxic Substance Control (DTSC), the California Occupational Safety and Health Administration (Cal-OSHA), and the California Integrated Waste Management Board.

DTSC enforces hazardous materials and waste regulations in California under the authority of EPA. California's Hazardous Waste Control Law incorporates the federal hazardous materials and waste standards of RCRA, but California's regulations are stricter in many respects.

In California, Cal-OSHA assumes primary responsibility for enforcing worker safety regulations such as the federal Hazard Communication Program regulations. Cal-OSHA regulations are found in the CCR Title 8. Although Cal-OSHA regulations have incorporated federal OSHA standards, Cal-OSHA regulations are generally more stringent than those of the federal government.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories. A business plan includes information such as an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency

response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, the California Environmental Protection Agency (Cal-EPA) DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to, but more stringent than, the federal RCRA program. The act is implemented by regulations contained in Title 26 of the California Code of Regulations, which list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control.

4.6.2 IMPACTS AND MITIGATION MEASURES

APPROACH TO ANALYSIS

This impact analysis focused on potential effects of hazardous materials or waste that may be encountered during FIG installation or that might be associated with the proposed program. The FIG evaluation was made in light of plans, applicable regulations and guidelines, and the effectiveness of any remedial measures.

SIGNIFICANCE CRITERIA

In accordance with CEQA Guidelines, and agency and professional standards, the proposed program would be considered to pose a significant impact if it would violate the criteria in the checklist or:

- Create a hazard resulting from hazardous materials that may be encountered during trenching or other subsurface excavation activity.
- Result in improper disposal of hazardous materials encountered during trenching or other subsurface excavation activity.

IMPACT MECHANISMS

Impacts from hazardous material use or handling could result from the proposed program via the following mechanisms:

- potential exposure to existing contaminated soils, contaminated groundwater, abandoned underground storage tanks and piping and contaminated material from existing undocumented dumping and landfilling;

- potential exposure to, and releases of, hazardous materials such as oils, grease, lubricants, and solvents used during normal construction operations; and
- potential risk of upset to the public or the environment.

IMPACT ASSESSMENT

Impact HAZ-1: Possible temporary exposure to or release of hazardous materials during construction.

Small quantities of hazardous materials may be stored, used, and handled during construction. The hazardous materials anticipated to be used are small volumes of petroleum hydrocarbons and their derivatives (e.g., gasoline, hydraulic fluids) required to operate the construction equipment. These materials could potentially be released in accidental spills. Although the types and quantities of hazardous materials used during construction are not considered acutely hazardous and would not pose a substantial risk to human health and/or safety, release of hazardous materials without subsequent containment and cleanup could result in harm to the environment. This impact is considered potentially significant.

Mitigation Measure HAZ-1a: Ensure proper labeling, storage, handling, and use of hazardous materials.

SCG/SDG&E would ensure proper labeling, storage, handling, and use of hazardous materials in accordance with best management practices and the Occupational Safety and Health Administration (OSHA)'s HAZWOPER requirements. SCG/SDG&E would ensure that employees and/or contractors are properly trained in the use and handling of these materials and that each material is accompanied by a material safety data sheet. Additionally, any small quantities of hazardous materials stored temporarily in staging areas will be stored on pallets within fenced and secured areas and protected from exposure to weather. Incompatible materials will be stored separately, as appropriate.

To avoid unexpected releases of hazardous materials, SCG/SDG&E would include individuals trained in accordance with the OSHA's HAZWOPER requirements. Additionally, SCG/SDG&E would have a written plan outlining how to respond if hazardous materials are unexpectedly encountered. The plan will specify identification, handling, reporting, and disposal of hazardous materials. All hazardous waste materials removed during construction, to the extent necessary to ensure the area can be safely traversed, will be handled and disposed of by a licensed waste disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility. SCG/SDG&E would require in its contracts that contractors meet federal, state, and local requirements.

Mitigation Measure HAZ-1b: Report all significant releases or threatened releases of hazardous materials.

All significant hazardous materials spills or threatened releases, including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911 and the Governor's Office of Emergency Services (OES) Warning Center at 1-800-852-7550.

For non-petroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in Section 25359.4 of the California Health and Safety Code and Title 40, Section 302.4 of the CFR.

All construction personnel, including environmental monitors, shall be aware of state and federal emergency response reporting guidelines. In California, spill notification guidance is summarized in the OES Hazardous Materials Unit's *California Hazardous Material Spill/Release Notification Guidance* (OES 1999). Reportable quantities for federal hazardous substances can be found in Table 302.4 of 40CFR 302.3. Guidance for federal notification is also provided in the *California Hazardous Material Spill/Release Notification Guidance* manual.

Mitigation Measure HAZ-1c: Reduce excavation impacts.

If at any time during construction, soil and or sediment are suspected of being contaminated by visual observations of debris, discoloration or sheen, and/or odor, SCG/SDG&E would monitor and analyze excavated material with a photo-ionization detector to determine the potential for soil contamination and the need for specialized soil-handling procedures to reduce excavation impacts in areas of suspected contamination.

Significance After Mitigation: Less than significant.

Impact HAZ-2: FIG installation activities could require disposal of potentially contaminated soils.

The potential exists for contaminated soil or groundwater to be encountered during excavation or dewatering activities during FIG installation. If encountered, contaminated materials may be classified as a non-hazardous waste, a hazardous waste, a designated waste, or a special waste, depending on the type and degree of contamination. Disposal of excavated soils as standard demolition waste or use as fill for another construction site could result in a significant impact if those soils are contaminated. Disposal of materials in the vicinity of unknown but potentially present site contamination could pose a hazard to people, or animal or plant populations.

Mitigation Measure HAZ-2a: Implement an Awareness Training Program to educate field personnel regarding the unexpected discovery of contaminated soil.

Initially, SCG/SDG&E shall implement an Awareness Training Program that instructs field personnel to attempt to avoid areas that they know are contaminated (e.g., near oil refineries) or are likely to be contaminated (e.g., near abandoned gasoline stations). If soil in a street or public right-of-way is encountered that has an abnormal odor or appearance, the crew will immediately use appropriate protective gear and will call the region's Environmental Compliance Specialist ("ECS") who will arrange for soil testing. If the test results are "non detect" the soil will be used as backfill. If the test results show detectable amounts of a contaminant then the inspector for the city or county that owns the street or right of way will be notified.

Mitigation Measure HAZ-2b: Characterize excavated materials for disposal if those materials have the odor or appearance of contamination and report all discovery of significant hazardous waste, including soil and groundwater contamination, to the inspector of the local agency.

Excavations of soil and or sediment that are suspected of being contaminated by visual observations of debris, discoloration or sheen, and/or odor would be observed by a trained health and safety professional equipped with an organic vapor analyzer (or other appropriate methods for detecting anticipated contaminants) to screen excavated materials and ensure worker safety.

In accordance with Public Utilities Code § 787, SCG/SDG&E may backfill the excavation permitted by any local agency with native spoil if the following conditions are met:

- (1) The native spoil is competent spoil.
- (2) Compaction meets the local agency's requirements using industry standards for testing compaction.
- (3) The public utility or its contractor has no physical evidence of, or substantial reason to believe that there has been, contamination of the soil from hazardous wastes.
- (4) Within 30 days prior to compaction, a local agency has not provided the public utility or its contractor with physical evidence of, or substantial reason to believe that there has been, contamination of the soil from hazardous wastes.

If identified hazardous waste is encountered, including but not limited to stained or odiferous soils and sludge, sheens or floating free product on groundwater, or foreign matter associated with buried pipes, storage tanks, or drums, work shall stop immediately and the local hazardous materials response agency shall be contacted. Non-essential personnel shall leave the immediate area. The inspector of the city/county that owns the street in which the contamination is found will be notified.

Significance After Mitigation: Less than significant.

Impact HAZ-3: Potential public health hazard associated with a pipeline rupture during FIG installation and operation that could lead to an explosion resulting in property damage or fatalities.

In order to implement FIG technology, SCG/SDG&E would be required to access its natural gas pipelines using standard industry procedures to install the empty conduit within live gas pipelines. To access and install FIG technology, SCG/SDG&E would drill holes (or access points) into its pressurized gas pipelines, using a standard hot tap procedure, for installation of empty conduit. The hot tapping procedure would be used to allow access to the pipeline for entry and exit of the conduit, and to circumvent the multiple valves throughout the pipeline system used to isolate particular pipeline segments. SCG/SDG&E will require that a conduit exit and entry be installed in the pipeline at least every 500 feet in the densest areas of their service territories to accommodate standard emergency procedures without necessitating service disruption to gas and telecommunications users. SCG/SDG&E testimony provided with their application demonstrates that tapped access points can be created and sealed safely and that these points will not degrade over time and further increase the possibility of leaks. Additionally, pipelines used for FIG technology are not transmission pipelines, but rather distribution lines, which typically operate at pressures of 60 psi or less. These distribution lines already have “holes carved” into them for taps installed for gas services running to individual consumers along the pipeline alignment.¹

The tapping process for the installation of the various fittings is a standard procedure performed by appropriately qualified SCG/SDG&E employees and contractors. The same general gas control procedures currently used by SCG/SDG&E employees and contractors would be used for the installation of FIG components. The FIG Technology uses the same procedures and materials that have been safely used in the industry for many years with slight modifications to accommodate the conduit.

The FIG fittings and technology have been designed and would be implemented to conform to all applicable regulations, including those in 49 C.F.R. Title 192, “Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards.” The regulations are written as minimum performance standards, setting the level of safety to be attained and allowing the pipeline operators discretion in achieving that level. Emergency repairs and procedures, including actions to mitigate potential impacts, would be included in the terms and conditions of the contracts between SCG/SDG&E and the Carriers.

SCG/SDG&E employees tested the FIG Technology, including all FIG system components, with the purpose of evaluating their safety and durability as permanent attachments to gas-carrying steel and plastic pipelines. Short- and long-term tests described in the Project Description in Chapter 3 of this EIR have shown that system components meet SCG/SDG&E’s performance and safety criteria as pipeline components.

From an operations and maintenance perspective, the results of demonstrations and tests conducted to date show that the FIG procedure presents risk levels comparable to those associated

¹ In both built-up areas and single-family residential areas, there are already “holes carved” into the distribution mains much more frequently than every 500 feet to connect with services to individual customers.

with current natural gas operations. Based on the technical evaluation conducted of the FIG Technology, it has been concluded by SCG/SDG&E that the process and components presented by the FIG Technology meet SCG/SDG&E's performance criteria for permanent pipeline fittings. The conclusion was that the risks associated with the installation of the FIG Technology are comparable to those associated with normal natural gas operating conditions. Training of employees that would work on affected gas mains would emphasize SCG/SDG&E company-wide safety procedures.

Safety measures and procedures would be an integral part of the FIG Technology application, as they are with existing work related to installation, operation, and maintenance of active gas pipelines. These include measures to mitigate reasonably foreseeable upset and accident conditions. Many of these measures are already mandated and in place with respect to potential gas leaks or accidents. As noted, only workers trained and qualified to work on natural gas pipelines would be allowed to perform installations of fittings and conduit. With the implementation of these safety measures impacts would be less than significant.

Mitigation Measure HAZ-3a: SCG/SDG&E will continue to update safety procedures to address FIG installation procedures in compliance with all federal and state pipeline safety regulations.

As described in Chapter 3 of this EIR, SCG/SDG&E has modified existing Gas Standards and Company procedures to address the installation methods and maintenance of mains serving as fiber carriers. SCG/SDG&E's primary responsibility during an emergency is to minimize the hazard resulting from a damaged pipeline. Therefore, SCG/SDG&E employees may be required to perform tasks during emergency situations that may result in damage of the conduit and or cable. The modifications to existing procedures include instructions to minimize the damage to FIG conduit and cable. Furthermore, employees in districts where carrier pipelines would be located would receive training on how to address operations, maintenance and emergency response activities.

Also, SCG/SDG&E have developed a set of new Gas Standards that deal specifically with the installation, maintenance and emergency response of FIG pipelines. The modified existing Gas Standards include language to point to this new set of Procedures or to include minor changes. These new standards include instructions for training on installation procedures that would be provided to all employees, both company and contractor, expected to work on pipelines serving as carriers. Only employees with this training would be permitted to work on the FIG installation procedures.

All modified and newly created Gas Standards would continue to be updated to ensure their effectiveness in eliminating risks to public and worker safety as FIG installations occur throughout the service territories. These Gas Standards would also be revised where applicable based on any changes or modifications to the 42 CFR Part 192 and General order 112E to remain in compliance with both federal and State regulations.

Significance After Mitigation: Less than significant.

Impact HAZ-4: Possible Exposure of the Public or Environment to Hazardous Materials Sites.

State and federal laws regulate the manner in which contamination and hazardous conditions are investigated and remediated. Contaminated sites can be expected in proposed pipeline access point locations, particularly in highly urbanized areas. Coordination with waste disposal activities with local regulatory agencies will be needed for work at these locations. This impact is considered less than significant because SCG/SDG&E will ensure that an Awareness Training Program is implemented and soil contamination will be reported to the inspector of the local agency, as described in **Mitigation Measures HAZ-2a** and **HAZ-2b**.

Mitigation Measure: Implement **Mitigation Measure HAZ-2a** and **HAZ-2b**.

Significance After Mitigation: Less than significant.

Impact HAZ-5: Possible Temporary Limited Emergency Access.

The proposed program would involve the operation of heavy machinery. Emergency response times may be affected in areas where pipeline access points are adjacent to or within road rights-of-way. Emergency access would be regulated as a condition of road encroachment permits by the applicable regulatory agency. Also, as discussed in **Section 3.O, Traffic**, a traffic control plan shall be prepared as part of the construction mitigation strategy of the proposed program to further reduce impacts on traffic and emergency response vehicles and programs to less-than-significant levels.

Mitigation Measure: Implement **Mitigation Measure TRA-1a**.

Significance After Mitigation: Less than significant.
