4.11 Noise

This section describes sound and noise in the area of the Proposed Project. The potential noise impacts and alternatives are also discussed.

The Proposed Project components that do not generate noise; or would clearly not impact noise sensitive land uses were not assessed. These components include the installation of upgraded relay systems and equipment at the Newhall, Chatsworth, and San Fernando Substations. Additionally, none of the Proposed Project components would expose people working or residing in the project area to excessive noise levels due to activities at public use airports or private airstrips and therefore does not require assessment

4.11.1 Existing Noise Setting

The Aliso Canyon Natural Gas Storage Field is a working natural gas storage field. Within the Storage Field, existing structures include the TDC compressor station, office trailers, a guard house, vehicle access, equipment storage and equipment.

Aliso Canyon Storage Field

Proposed Office Trailer Relocation

The location of the existing office trailers is shown on Figure 3.1-3. The primary noise sources at this location are the components of the proposed Central Compressor Station. Secondary noise sources would include vehicles accessing the site.

Guard House Relocation

The location of the existing guard house is represented on Figure 3.7-3, in Chapter 3.0. The only noise components at this location are from vehicles accessing the site.

TDC Station

The existing Compressor Station, shown on Figure 3.1-3, is the primary noise source within the Storage Field. Noise levels within 50 feet of the station's existing equipment can reach as high as 85 dBA during peak use. However, due to the distance to the nearest noise sensitive receptors and intervening terrain, the existing Compressor Station and associated turbines were not audible during noise measurements south of the Storage Field entrance on Tampa Avenue.

Proposed On-site PPL Construction Area

The location of the proposed PPL is shown on Figure 3.1-3. The proposed PPL would generally be located on undisturbed land with the exception of the tie in at the proposed Central Compressor Station and the proposed SCE Natural Substation.

Proposed SCE Natural Substation

The site proposed for the proposed SCE Natural Substation is currently vacant and does not include any noise sources. An existing substation, the Ward Substation, serves the existing TDC Station and will not be modified as part of the Proposed Project and no change in noise levels from this substation are anticipated. Neither the proposed SCE Natural Substation nor the Ward Substation contain noise sensitive receptors.

66 kV Sub-transmission System (consisting of two lines)

The existing 66 kV sub-transmission system is located along Wiley Canyon Road, I-5, and crosses the Sunshine Canyon Landfill as it passes west across the Storage Field. Noise levels along Wiley Canyon Road and I-5 are dominated by vehicular traffic, and average 60 to 67 dBA L_{eq} based on field noise measurements. Noise sensitive receptors are located along Wiley Canyon Road and west and east of I-5. No audible noise from the 66 kV sub-transmission system was detected during noise measurements.

Proposed modifications to the existing SCE 66 kV sub-transmission system include replacing the existing LSTs and H-frames with TSPs, and re-conductoring the existing two lines with 954 ACSR.

Other Substations

As previously identified in Chapter 3, no construction activities are proposed at the Newhall and Chatsworth Substations. Upgrades of relay facilities and new connections at these substations would not alter the existing operational noise environment at these substations.

Up to four existing LSTs will be removed and three to four new TSPs will be installed at the San Fernando Substation, which would require some construction activities during the removal and placement of the poles.

4.11.1.1 Noise Sensitive Receptors

Noise sensitive receptors are generally considered humans engaged in activities, or utilizing land uses, that may be subject to the stress of significant interference from noise. Activities usually associated with sensitive receptors include, but are not limited to, talking, reading, and sleeping. Land uses often associated with sensitive receptors include mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries.

Noise sensitive receptors in the Proposed Project vicinity include the residences located to the east and west of Wiley Canyon Road, the residences north of the Newhall Substation, residences east and west of the San Fernando Substation, and residences south of the proposed Central Compressor Station site along Sesnon Boulevard. In addition to these residences, there are churches and schools within the vicinity of the Proposed Project components. The Wiley Canyon Elementary School and the Valley Community Church/Rise and Shine Preschool front Willey Canyon Road and are located along the alignment of the existing 66 kV sub-transmission system at the intersection of Wiley Canyon Road and La Glorita Circle/Evans Avenue. The Newhall Church of the Nazarene is located west of I-5 along The Old Road between Towsley Canyon Road and East County Motorway.

The San Fernando Mission and Bishop Alemany High School are located adjacent to the San Fernando Substation to the north. Immediately to the east and west of the substation are office and administration buildings associated with the San Fernando Mission. Residences are generally 500 feet or further from the substation. However, residences south of Brand Boulevard are located approximately 340 feet south of the nearest pole replacement in Brand Park.

4.11.1.2 Vibration Sensitive Receptors

Vibration sensitive receptors are generally considered humans engaged in activities, or utilizing land uses, that may be subject to significant interference from vibration. Activities and land uses often associated with vibration sensitive receptors are similar to those associated with noise sensitive receptors. Primary vibration sensitive receptors of concern in the Proposed Project vicinity include the residences located to the east and west of Wiley Canyon Road. In addition to these residences, there is are churches and schools within the vicinity of the Proposed Project components. The Wiley Canyon Elementary School and the Valley Community Church/Rise and Shine Preschool are located along the alignment of the existing 66 kV sub-transmission system at the intersection of Wiley Canyon Road and La Glorita Circle/Evans Avenue. The San Fernando Mission and Bishop Alemany High School are located adjacent to the San Fernando substation to the north, east, and west. Residences south of the proposed Central Compressor Station site and the Newhall Church of the Nazarene are located at sufficient distances that construction-related vibrations would not be noticeable. Similarly, vibrations associated with the construction activities at the San Fernando substation would not be noticeable at local residences located to the south, west, and east of the substation.

4.11.1.3 Noise and Vibration Terminology and Concepts

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 1998).

Decibels and Frequency

In its most basic form, a continuous sound can be described by its frequency or wavelength (pitch) and its amplitude (loudness). Frequency is expressed in cycles per second, or Hz. Frequencies are heard as the pitch or tone of sound. High-pitched sounds produce high frequencies; low-pitched sounds produce low frequencies. Sound pressure levels are described in units called the decibel (dB).

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

Perception of Noise at the Receiver and A-Weighting

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A weighted measurements are written dB(A) or dBA. Table 4.11-1 shows the relationship of various noise levels to commonly experienced noise events.

Table 4.11-1 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 1,000 feet (300 meters)	--100--	
Gas Lawn Mower at 3 feet (1 meter)	--90--	
Diesel Truck at 50 feet, at 50 mph (80 km/hr)	--80--	Food Blender at 3 feet
Noisy Urban Area, Daytime Gas Lawn Mower at 100 feet	--70--	Vacuum Cleaner at 10 feet
Commercial Area Heavy Traffic at 300 feet	--60--	Normal Speech at 3 feet
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Notes: mph = miles per hour; km/hr = kilometers per hour
Source: Caltrans 1998

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two noise sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease; that a change of 5 dBA is readily perceptible; and that an increase (decrease) of 10 dBA sounds twice (half) as loud (Caltrans 1998).

Noise Propagation

From the source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise level as the distance from the source increases. The manner in which noise reduces with distance depends on the important factors described in the following discussion.

Geometric spreading from point and line sources: Sound from a small-localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The

sound level attenuates or drops off at a rate of 6 dBA for each doubling of the distance. The movement of the vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The sound level attenuates or drops off at a rate of 3 dBA per doubling of distance for line sources.

Ground absorption: Hard sites (i.e., sites with a reflective surface between the source and the receiver, such as parking lots or smooth bodies of water) receive no excess ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. Soft sites are sites that have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees and receive an excess ground attenuation value of 1.5 dBA per doubling of distance.

Atmospheric effects: Wind speed will bend the path of sound to "focus" it on the downwind side and make a "shadow" on the upwind side of the source. At short distances, up to 164 feet (50 meters), the wind has minor influence on the measured sound level. For longer distances, the wind effect becomes appreciably greater. Temperature gradients create effects similar to those of wind gradients, except that they are uniform in all directions from the source. On a sunny day with no wind, temperature decreases with altitude, giving a shadow effect for sound. On a clear night, temperature may increase with altitude, focusing sound on the ground surface.

Shielding by natural or man-made features, noise barriers, diffraction, and reflection: A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver location. The amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, as well as fabricated features such as buildings and walls, can significantly alter noise levels.

Noise Descriptors

Several rating scales (or noise "metrics") exist to analyze adverse effects of noise on a community. These scales include the equivalent noise level (Leq), the day-night average sound level (DNL or Ldn), and the community noise equivalent level (CNEL). Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, meaning the equivalent noise level for that period of time. The period of time averaging may be specified; $L_{eq(3)}$ would be a 3-hour average. When no period is specified, a 1-hour average is assumed. It is important to understand that noise of short duration, that is, times substantially less than the averaging period, is averaged into ambient noise during the period of interest. Thus, a loud noise lasting many seconds or a few minutes may have minimal effect on the measured sound level averaged over a 1-hour period.

To evaluate community noise impacts, the DNL and CNEL were developed to account for human sensitivity to nighttime noise. The DNL represents the 24-hour average sound level with a penalty for noise occurring at night. The DNL computation divides the 24-hour day into two periods: daytime (7:00 a.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.). The nighttime sound levels are assigned a 10-dBA penalty prior to averaging with daytime hourly sound levels. CNEL is similar to DNL except that it separates a 24-hour day into three periods: daytime (7:00 a.m. to 7:00 p.m.), evening (7:00 p.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.). The evening nighttime sound levels are assigned a 10-dBA penalty prior to averaging with daytime hourly sound levels.

Perception of Vibration at the Receiver

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings caused by construction activities may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 Hz to 200 Hz), or when foundations or utilities, such as sewer and water pipes, connect the structure and the construction activity.

Although groundborne vibration is sometimes noticeable in outdoor environments, groundborne vibration is almost never annoying to people who are outdoors (FTA 2006). The primary concern from vibration is the ability to be intrusive and annoying to local residents and other vibration sensitive land uses.

Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

Vibration Descriptors

Vibration levels are usually expressed as single-number measure of vibration magnitude, in terms of velocity or acceleration, which describes the severity of the vibration without the frequency variable. The peak particle velocity (ppv) is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second. Since it is related to the stresses that are experienced by buildings, ppv is often used in monitoring of blasting vibration. Although ppv is appropriate for evaluating the potential of building damage, it is not suitable for evaluating human response. It takes some time for the human body to respond to vibrations. In a sense, the human body responds to an average vibration amplitude (FTA 2006). Because vibration waves are oscillatory, the net average of a vibration signal is zero. Thus, the root mean square (rms) amplitude is used to describe the "smoothed" vibration amplitude (FTA 2006). The rms of a signal is the square root of the average of the squared amplitude of the signal, usually measured in inches per second. The average is typically calculated over a 1-second period. The rms amplitude is always less than the ppv and is always positive. Decibel notation is used to compress the range of numbers required to describe vibration. The abbreviation VdB is used in this report for vibration decibels to reduce the potential for confusion with sound decibels.

4.11.1.4 Noise Regulations

This section summarizes regulations relating to noise and vibration applicable to the Proposed Project.

California State Standards

The State of California does not promulgate Statewide standards for environmental noise but requires each local jurisdiction to include a noise element in its general plan (California Government Code Section 65302(f)).

Local Municipal Government

Noise impacts will be regulated by three local municipalities for various Proposed project components. These include Los Angeles County, the City of Los Angeles, and the City of Santa Clarita. The noise regulations for operation, construction, and vibration (as applicable) for each of these are described below.

Los Angeles County

Operation

Section 12.08.390 of the Los Angeles County Code (LACC) regulates noise levels between properties within Los Angeles County. Section 12.08.390 requires that "no person operate or cause to be operated, any source of sound at any location within the unincorporated county…when measured on any other property either incorporated or unincorporated, to exceed" the identified noise level standards for a cumulative period of more than 30 minutes in any hour. Section 12.08.390 contains additional time limits for higher noise level that occurs for shorter periods. The LACC exterior noise level standards are shown in Table 4.11-2.

Table 4.11-2 Los Angeles County Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor property)	Time Interval	Exterior Noise Level
I	Noise-sensitive area	Anytime	45 dBA
II	Residential properties	10:00 pm to 7:00 am (nighttime)	45 dBA
		7:00 am to 10:00 pm (daytime)	50 dBA
III	Commercial properties	10:00 pm to 7:00 am (nighttime)	55 dBA
		7:00 am to 10:00 pm (daytime)	60 dBA
IV	Industrial properties	Anytime	70 dBA

Source: County of Los Angeles 2009

Construction

Section 12.08.440 of the LACC restricts construction activity, where construction disturbs a commercial or residential property, between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday and prohibits construction activity at any time on Sundays, or national holidays. Section 12.08.440 includes noise level limits at residential properties for mobile and stationary construction equipment (Table 4.11-3) Section 12.08.440 limits construction noise at commercial properties to a maximum of 85 dBA any time.

Table 4.11-3 Noise Level Limits for Los Angeles County

	Single-Family Residential	Multi-Family Residential	Semiresidential/ Commercial
Nonscheduled, Intermittent, Short-term Operation of Mobile Equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Repetitively Scheduled and Relatively Long-term Operation of Stationary Equipment			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: County of Los Angeles 2009

Vibration

Section 12.08.560 regulates vibration sources within the County. Section 12.08.560 indicates a vibration violation would occur if the vibration exceeded the "vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way." According to Section 12.08.560, the perception threshold is a "motion velocity of 0.01 in/sec over the range of 1 Hz to 100 Hz."

City of Los Angeles

Operation

The Los Angeles Municipal Code (LAMC) determines noise impacts based on the increase over the ambient noise level. Sections 112.01 and 112.02 indicate a noise ordinance violation would occur from most stationary sources when noise would exceed levels identified in Table 4.11-4 by 5 dBA or more.

Table 4.11-4 LAMC Section 111.03 Presumed Ambient Noise Level by Zone within Los Angeles

Zone	Day (7:00 a.m. – 10:00 p.m.)	Night (10:00 p.m. – 7:00 a.m.)
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50 dBA	40 dBA
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60 dBA	55 dBA
M1, MR1, and MR2	60 dBA	55 dBA
M2 and M3	65 dBA	65 dBA

Source: City of Los Angeles, 2009

Where ambient noise levels are not known, Section 111.03 of the LAMC sets the presumed noise levels for various zones within Los Angeles. If the measured ambient noise level is below those identified in Section 111.03, the noise levels identified in Section 111.03 are the presumed ambient noise level. Section 111.02 contains standards for conducting noise level measurements and adjustments for measured noise levels based on the source, character, and duration of the noise source.

Construction

Section 40.41 of the LAMC generally restricts construction activity to occur between the hours of 7:00 a.m. and 9:00 p.m. Section 40.41 further restricts construction activities within 500 feet of residential properties to between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays, or national holidays and prohibits construction at anytime on Sundays. Section 112.05 further restricts construction equipment operating within 500 feet of residential uses between the hours of 7:00 a.m. and 10:00 p.m. to 75 dBA L_{eq}.

Vibration

Los Angeles does not have guidance for evaluating the potential for structural or cosmetic damage or human disturbance and annoyance from vibration-generating activities.

City of Santa Clarita

Operation

Section 11.44.040 of the Santa Clarita Municipal Code (SCMC) regulates noise levels between properties within Santa Clarita. According to section 11.44.040, it is unlawful for any person within Santa Clarita to produce or cause or allow to be produced noise levels to a receiving property in excess of the noise levels presented in Table 4.11-5. Section 11.44.040 also contains noise level adjustments based on the source, character, and duration of the noise.

Table 4.11-5 Santa Clarita Property Line Noise Level Limits

Region	Time	Sound Level dBA
Residential zone	Day	65
Residential zone	Night	55
Commercial and manufacturing	Day	80
Commercial and manufacturing	Night	70

Construction

Section 11.44.080 of the SCMC limits construction activity within 300 feet of residentially zoned properties between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and 8:00 a.m. and 6:00 p.m. on Saturdays. All construction is prohibited on Sundays, New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day, and Labor Day.

Vibration

Santa Clarita does not have guidance for evaluating the potential for structural or cosmetic damage or human disturbance and annoyance from vibration-generating activities.

4.11.1.5 Noise Measurements

Background noise measurements were collected at the Newhall Substation site, at five locations along the existing 66 kV sub-transmission route east of I-5, and one location south of the proposed Central Compressor Station site. A summary of the noise measurements is provided in Table 4.11-6 and measurement location are shown on Figure 4.11-1.

4.11.2 Significance Criteria

The significance criteria for assessing the impacts to noise levels come from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would cause:

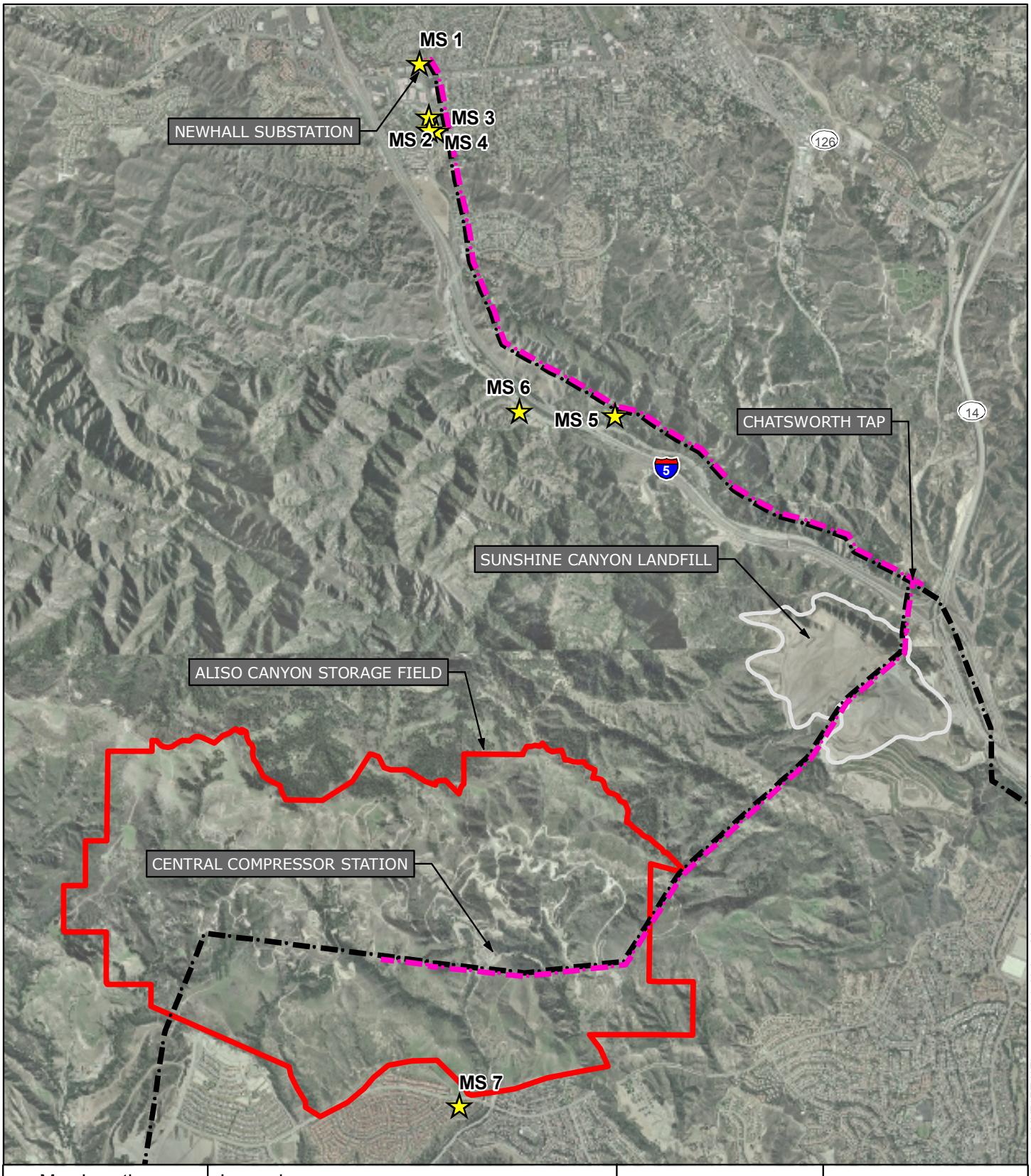
- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, where the project would expose people residing or working in the project area to excessive noise levels.

Table 4.11-6 Noise Measurement Summary

Site ID*	Location	Start Time	Duration (Minutes)	L_{eq} (dBA)	L_{max} (dBA)	L_{min} (dBA)	Noise Sources
1	North of Newhall Substation on small hill overlooking substation, 100 feet west of Wiley Canyon Road and 260 feet north of	8:57 a.m.	15	57	68	52	Traffic on Wiley Canyon Road and Lyon Avenue, aircraft over-flights, pedestrians, birds
2	Wiley Canyon Elementary School, 55 feet west of Wiley Canyon Road	9:41 a.m.	20	60	71	48	Traffic on Wiley Canyon Road, children playing, aircraft over-flights, pedestrians, birds
3	Cheryl Kelton Place	10:19 a.m.	15	48	57	44	Traffic on I-5 and Wiley Canyon Road, aircraft over-flights, pedestrians, birds
4	Wiley Canyon Road	11:07 a.m.	15	63	75	50	Traffic on I-5 and Wiley Canyon Road, aircraft over-flights, pedestrians, birds
5	Crescent Valley Mobile Home Park	11:39 a.m.	15	61	73	53	Traffic on I-5 and The Old Road, aircraft over-flights, pedestrians, birds
6	Newhall Church of the Nazarene	12:12 p.m.	10	66	76	59	Traffic on I-5 and The Old Road, pedestrians, birds
7	Community Recreation Common Area	1:02 p.m.	30	67	95	39	Traffic on Sesnon Boulevard, aircraft over-flights, dogs barking, pedestrians, parking lot noise

* The Site ID corresponds to locations shown in Figure 4.11-1.

All measurements were taken on Wednesday, April 15, 2009.



Map Location

Legend

- Proposed SCE 66 kV Modification
- Existing SCE 66 kV Alignment
- Aliso Canyon Storage Field
- Noise Measurement Locations

1 inch = 4,000 feet

0 4,000 8,000 Feet

N W E S

Aliso Canyon PEA
Figure 4.11-1

Noise Measurement Locations

Source:.State of California, DMG, Seismic Hazard Zone, Oat Mountain Quadrangle Seismic Hazard Zones, February 1,1998)

Southern California Gas Company A Sempra Energy utility

AECOM

Project: 06205-134
Date: September 2009

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4.11.3 Applicant Proposed Measures

The following noise suppression techniques will be employed during construction to minimize the impact of temporary construction-related noise on nearby sensitive receptors:

APM-N-01: All construction activities occurring in association with the Proposed Project would operate within the allowable construction hours as determined by the applicable local agency and presented earlier in this document where feasible.

APM-N-02: A noise control plan would be prepared for all pole installation/replacement and substation modifications associated with the Proposed Project. The noise control plan would include, but not be limited to, the following:

- Stockpiling and vehicle staging areas would be located as far away from occupied residences as possible.
- All stationary construction equipment would be operated as far away from residential uses as possible.
- To the extent feasible, haul routes for removing excavated materials or delivery of materials from the site would be designed to avoid residential areas and areas occupied by noise sensitive receptors (e.g., hospitals, schools, convalescent homes, etc.).
- Idling equipment would be turned off when not in use for periods longer than 15 minutes.

APM-N-03: The project proponent would notify all sensitive receptors within 300 feet of construction of the potential to experience significant noise levels during construction.

4.11.4 Environmental Impacts

This section describes the methodology used to assess noise and the CEQA evaluation

4.11.4.1 Noise Evaluation Assumptions

Construction

The Proposed Project would include simultaneous construction of the proposed Central Compressor Station, the proposed SCE Natural Substation, proposed SoCalGas PPL, proposed relocation of office trailers and guard house, improvements at the San Fernando Substation, and pole installation/replacement along the 66 kV sub-transmission route. Descriptions of these activities are provided in Chapter 3.

Construction of the Proposed Project would involve the use of heavy equipment. Cranes and other heavy equipment would be used in the pole/tower replacement and conductor/cable installation. Grading would

be required for creating staging areas, pole foundation pads, conductor pull areas, and in creating spur roads and/or improving access along roads in wilderness areas. In addition, grading would be required at the proposed office trailer and guard house relocation areas, the proposed Central Compressor Station site, and the proposed SCE Natural Substation site. Heavy construction equipment can generate short-tem noise levels up to 95 dBA L_{max} at 50 feet. Table 4.11-7 summarizes individual noise levels associated with various pieces of construction equipment.

Table 4.11-7 Typical Maximum Construction Equipment Noise Levels and Duty Cycles

Equipment	Noise Level at 50 ft	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 KVA or less)	70	50%
Generator (more than 25 KVA)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
Insitu Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Scraper	85	40%
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%

Source: FTA 2006.

Equipment	Noise Level at 50 ft	Typical Duty Cycle

kVA = kilovolt amps

Construction equipment used in this assessment is based on the construction workforce and equipment information provided in Section 3.11. Based on the various construction equipment lists provided in Chapter 3 for each project component, the loudest activity was modeled and used for impact evaluation. The noisiest activity for each project component is presented in Table 4.11-8.

Table 4.11-8 Modeled Construction Noise Levels from Center of Activity

Scenario	Noise Level at 50 feet
Proposed SCE Natural Substation Construction	84 dBA L_{eq}
Proposed Central Compressor Station Construction	84 dBA L_{eq}
Proposed Sub-transmission modification: Pole/Tower Removal	83 dBA L_{eq}
Proposed Sub-transmission modification: Pole Installation/Replacement	82 dBA L_{eq}

Operation

Proposed Central Compressor Station

The operational noise analysis for the proposed Central Compressor Station was based on an environmental noise assessment evaluating four gas-driven compressors proposed to replace the existing TDCs. The noise assessment was conducted in 2007 and prepared by Washington Group International (Washington Group 2007). The proposed VFD compressors have not been purchased; therefore, this analysis relies on data from similar equipment likely to be installed. In the Washington Group Report, the proposed Central Compressor Station would replace the existing gas powered turbines with newer gas driven turbines of approximately 20,500 horsepower each. While the Proposed Project would replace the gas turbines and compressors with VFD motor-driven compressors, these units are anticipated to be quieter than, or at worst equal to, the gas powered turbines and associated compressor units studied in the Washington Group Report. Based on a review of the Washington Group Report, the loudest single component was the compressors, in which 4 of them average 94 dBA L_{eq} at 50 feet under full load. As the turbine-driven compressors in the Washington Group Report had a performance design of 420 million standard cubic feet/day, it is anticipated the motor-driven compressors would generate a noise level similar to the compressors proposed as part of the Proposed Project. Electric-powered compressors are much quieter when compared to noise levels of gas-driven turbines. Therefore, the proposed electric-powered VFD compressors will not significantly impact or increase baseline noise levels. To present a conservative assessment, the noise level for all operating equipment at the proposed Central Compressor Station site is assumed to be a continuous 97 dBA L_{eq}.

Proposed Natural Substation Location

The proposed location for the proposed SCE Natural Substation is approximately 1,800 feet west of the proposed Central Compressor Station site. The primary sources of noise from substations are circuit breakers and transformers.

Transformers

Substations usually generate steady noise from the operation of transformers, and the cooling fans and oil pumps needed to cool the transformer during periods of high electrical demand. With all auxiliary cooling fans operating, the worst-case noise level from the transformers under full load is predicted to be no more than 66 dBA at three feet. Typically, transformers are located near the center of the substation footprint. Due to the distance to the nearest noise sensitive receivers, noise generated by transformers would not be audible at these distances over ambient noise levels.

Circuit Breakers

Circuit breaker noise occurs only very occasionally and not during normal operations. Circuit breaker noise would only occur to protect the grid in an unusual event, such as a lightning strike. A circuit breaker can generate maximum instantaneous noise levels (over approximately 6 milliseconds) on the order of 90 dBA L_{max} at 65 feet, which is approximately equivalent to 50 dBA L_{eq} at 50 feet.

At the time of this assessment, detailed design work still has to be undertaken for the proposed SCE Natural Substation, and a range of techniques can be used to ensure that transformer noise is avoided or mitigated so that required noise levels are achieved.

Based on this analysis the two primary types of noise effects from operation of the Proposed Project would be the weather dependent broadband noise from corona discharge along proposed SCE 66 kV sub-transmission modification, and the steady “hum” from the transformers at the proposed SCE Natural Substation. Due to the distance between the proposed SCE Natural Substation and the nearest sensitive receptor, the proposed SCE Natural Substation would not be audible to local residents.

66 kV Sub-transmission System

One of the potential environmental effects of the Proposed Project would be audible noise from the 66 kV sub-transmission system, which includes two source lines. In general terms, this noise would primarily consist of electrically-induced (corona discharge) elements.

Corona discharge noise

Corona discharge noise results from the partial breakdown of the electrical insulating properties of the air surrounding the conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small local pressure changes that result in audible noise, or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a 120 Hz hum.

Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, making corona discharge and the associated audible noise more likely. Therefore, audible noise from transmission lines is generally a foul weather (wet conductor) phenomenon. However, during fair weather, insects and dust on the conductors can also serve as sources of corona discharge. As part of the Proposed Project, SCE would install polymer (silicon rubber) insulators on the two lines proposed to be modified on the SCE 66 kV sub-transmission system. This material is hydrophobic (repels water) and minimizes the accumulation of surface contaminants such as soot and dirt, which in turn reduces the potential for corona noise to be generated at the insulators.

Considering that a 6 dBA decrease occurs with every doubling of distance from the source, transformer noise would be attenuated to approximately 40 dBA at 60 feet. SCE substation designs typically include an 8-foot block wall constructed for safety and security. If the final design for the proposed SCE Natural Substation includes a 8-foot block wall, it would provide noise attenuation of about 10 dBA, so that the transformer noise level outside the wall would be approximately 30 dBA (CPUC, 2007). This estimation is far below the most stringent noise impacted land use compatibility guidelines (State of California, 2003).

As a result, the Proposed Project would not cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project. Impacts would be less than significant.

4.11.4.2 Noise Impact Evaluation

The potential impact to noise from construction and operation of the Proposed Project was evaluated using the stated CEQA significance criteria and is presented in this section. For the purpose of presenting potential noise impacts, CEQA criteria were evaluated and are discussed separately for construction and operations, and organized by project component, where applicable, within each CEQA criteria.

Construction Impacts

Would the Proposed Project cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Proposed Project Components located within the Storage Field

The proposed Central Compressor Station, proposed office trailer and guard house relocations, proposed SoCalGas PPL and proposed SCE Natural Substation site are all located within the boundary of the Storage Field, which is within the county of Los Angeles. The County controls construction noise through time restrictions and quantified noise levels limits based on the type of source, the receiving land use, and time of day. The nearest noise sensitive land use to the Storage Field would be residences north of Sesnon Boulevard. The nearest residence is approximately 2,700 feet south of the nearest point of construction. At this distance, construction noise would be below 50 dBA L_{eq}, which is below the County's lowest noise level limit. Construction related traffic would be minimal on local roads as construction workers would park at a central lot and be shuttled to the construction site. Earthwork would be balanced on-site and would not result in off-site soil export, however some material deliveries are anticipated to be

required. Therefore, construction activity within the Storage Field would result in a less than significant noise impact.

66 kV Sub-transmission System

The two existing SCE 66 kV sub-transmission source lines, originate at the Newhall substation, located at the intersection of Wiley Canyon Road and Lyons Avenue, in Newhall, a community in the city of Santa Clarita (see Figure 3.1-1). The alignment continues south to the San Fernando and MacNeil Substations. North of the I-5 and SR-14 interchange, a 66 kV sub-transmission segment of one of these lines crosses I-5 and the Sunshine Canyon Landfill, and continues west to SCE's Chatsworth Substation. Proposed modifications would generally occur along the portions of the sub-transmission line segments from the Newhall Substation south towards the Storage Field. Thus, portions of the proposed SCE 66 kV sub-transmission modification of concern would be located within the county of Los Angeles and the cities of Los Angeles and Santa Clarita.

Santa Clarita controls construction noise through time restrictions and does not have quantified thresholds for construction noise levels. Construction activities for the proposed sub-transmission system modifications, including pole/tower replacement and conductor/cable installation are expected to occur during the day. Nighttime construction is not anticipated. As a result, the construction activities within Santa Clarita would not violate the SCMC.

Pole/tower replacement and conductor/cable installation at San Fernando Substation would occur within 500 feet of residences within the city of Los Angeles. The nearest residences front Brand Avenue and are located approximately 340 feet south of the proposed pole replacement in Brand Park. The city of Los Angeles restricts construction activities occurring within 500 feet of residential uses between the hours of 7:00 a.m. and 10:00 p.m. to 75 dBA L_{eq}. At a distance of 340 feet construction noise related to pole/tower replacement and conductor/cable installation is anticipated to attenuate to 67 dBA or less. Thus, pole/tower replacement and conductor/cable installation are not anticipated to violate the LAMC.

Within the County, the Proposed Project would remove and install new power poles within 50 feet of residential uses within a mobile home park. As such, noise level during pole replacement could reach 82 dBA L_{eq} at the nearest residences. With the implementation of APM-N-01, noise levels will be maintained below the county threshold. Construction activities associated with the pole replacement would be intermittent and would be subject to noise level limits identified in Table 4.11-2. With implementation of the NCP, noise levels within residences of 50 to 100 feet of construction would comply with the County Code. No other residential land uses are located along the alignment of the proposed 66 kV sub-transmission modification, and noise levels would not exceed the identified limits at semi-residential/commercial land uses. Thus, construction impacts associated with the proposed SCE 66 kV sub-transmission modification would result in a less than significant impact with regard to the applicable noise policies and regulations.

Proposed Substation Upgrades

Two loop sections will be installed into the San Fernando Substation rack to provide a loop-in connection. Based on preliminary engineering, one LST inside the substation will be replaced. In addition, there are three LSTs located outside the substation that will be removed or replaced. Two of the existing LSTs are

located on Bishop Alemany High School north of the substation; one is located in Brand Park south of the substation in the existing SCE ROW, all within 350 feet of the substation. Two new engineered TSPs will likely be installed within the existing substation footprint and two will likely be placed on each side of the substation, resulting in a reduction in the number of structures on the Bishop Alemany High School site. Approximately 1,000 feet of 954 ACSR conductors will be installed on the new TSPs, including new conductors needed inside the substation. SCE will install four 66 kV circuit breakers, eight sets of disconnect switches, and other associated equipment to provide the San Fernando Substation with two new positions.

As residences are more than 500 feet from the San Fernando Substation, the school would be the nearest noise sensitive receptor. The nearest school buildings are located approximately 250 feet from the nearest point of construction within the substation. As such, noise level during pole replacement would be on the order of 70 dBA L_{eq} at the nearest residences. Thus, pole/tower replacement and conductor/cable installation are not anticipated to violate the LAMC.

Would the Proposed Project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Proposed Project Components located within the Storage Field

Pile driving may be required for the construction of foundations of the proposed Central Compressor Station. No pile driving is anticipated as part of the proposed office trailer and guard house relocations, construction of the proposed PPL, or construction of the proposed SCE Natural Substation. Assuming pile driving at a frequency range of approximately 18 hertz, vibrations associated with pile driving would attenuate to less than 0.01 in/sec ppv (68 VdB) at a distance of 200 feet. The nearest receptors to potential pile driving activities would be approximately 2,700 feet away. Vibration levels at this distance would be well below the perception level.

Typical construction activities, such as the tamping of ground surfaces and the passing of heavy trucks on uneven surfaces may produce minor groundborne vibration in the immediate vicinity of the activity, usually below the threshold of perception beyond 30 feet. Due to the distance to the nearest structure associated with the proposed office trailer and guard house relocations, proposed Central Compressor station and related structures, vibration impacts would be below the perception threshold at the nearest sensitive receptors. As a result, vibration impacts associated with construction at the Storage Field would be less than significant.

Proposed SCE 66 kV Sub-transmission System Modification

Typical construction activities, such as the tamping of ground surfaces and the passing of heavy trucks on uneven surfaces may produce minor groundborne vibration in the immediate vicinity of the activity, usually below the threshold of perception beyond 30 feet. While some existing poles are located within residential properties, these structures would be at least 30 feet from heavy construction equipment and no impacts to structures would occur at this distance from typical construction activities. As a result, vibration impact during pole/tower replacement and conductor/cable installation would be less than significant.

Proposed Substation Upgrades

No pile driving activities are anticipated as part of pole/tower replacement and conductor/cable installation at the San Fernando Substation. Typical construction activities, such as the tamping of ground surfaces and the passing of heavy trucks on uneven surfaces may produce minor groundborne vibration in the immediate vicinity of the activity, usually below the threshold of perception beyond 30 feet. The nearest residential structure would be approximately 50 feet from heavy construction equipment thus no impacts to structures would occur at this distance. Additionally, construction-related groundborne vibration would be below the perception level; as a result, vibration impact at the San Fernando Substation would be less than significant.

Would the Proposed Project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project?

Proposed Project Components located within the Storage Field

Construction activities within the Storage Field would be temporary in nature and would not result in permanent increase in noise levels. The construction of the proposed Central Compressor Station, proposed SoCalGas PPL, proposed SCE Natural Substation, and proposed relocation of the office trailers and guard house would have a less than significant impact on long-term ambient noise level in the Proposed Project area.

Proposed SCE 66 kV Sub-transmission System Modification

Construction activities associated with the pole/tower replacement and conductor installation would be temporary in nature and would not result in permanent increase in noise levels. Thus, pole/tower replacement and conductor installation would have a less than significant impact on long-term ambient noise level in the project area.

Proposed Substation Upgrades

Construction activities associated with the pole/tower replacement and conductor installation at the San Fernando Substation would be temporary in nature and would have a less than significant impact on long-term ambient noise level in the Proposed Project area.

Would the Proposed Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project?

Proposed Project Components located within the Storage Field

Construction of the Proposed Project would require a variety of equipment. Noise levels for proposed construction activities at 50 feet from the center of activity are listed in Table 4.11-6. The maximum intermittent noise level expected during construction of the proposed Central Compressor Station and proposed SCE Natural Substation would be 84 dBA at approximately 50 feet, and noise levels would be attenuated by distance and the presence of structures and vegetation. The nearest noise sensitive receptors to the proposed Central Compressor Station, proposed office trailer and guard house relocations, proposed PPL, and proposed SCE Natural Substation are approximately 2,700 feet south of

the nearest point of construction. At this distance construction noise levels would average 41 dBA L_{eq}. Noise levels on this order would generally not be audible at the nearest residences. Thus, construction activities within the Storage Field, including the proposed SCE Natural Substation, would result in a less than significant impact.

Proposed SCE 66 kV Sub-transmission System Modification

Construction associated with the proposed SCE 66 kV sub-transmission modification would require a variety of equipment. Noise levels for proposed construction activities at 50 feet from the center of activity are listed in Table 4.11-9. The maximum intermittent noise level expected during pole/tower replacement and conductor installation would be 82 dBA at approximately 50 feet, and noise levels would be attenuated by distance and the presence of structures and vegetation. Noise impacts associated with pole/tower replacement and conductor installation would mainly affect those persons closest to the 66 kV sub-transmission system in Santa Clarita and the County. Existing residential dwellings along Wiley Canyon Road and Crescent Valley Mobile Home Park along The Old Road, east of I-5, would experience the greatest temporary increase in noise levels above those existing without the Proposed Project. With the implementation of the NCP, noise levels would be controlled to comply with County Code. No other residential land uses are located along the alignment of the proposed SCE 66 kV sub-transmission modification and noise levels would not exceed the identified limits at semi-residential/commercial land uses. Thus, impacts associated with construction of the proposed SCE 66 kV sub-transmission modifications would be less than significant.

Proposed Substation Upgrades

Noise impacts associated with the proposed modification at the San Fernando Substation would mainly affect the Bishop Alemany High School. As residences are more than 500 feet from the San Fernando Substation, the school would be the nearest noise sensitive receptor. The nearest school buildings are located approximately 250 feet from the nearest point of construction within the substation. As such, noise level during pole replacement would be on the order of 70 dBA L_{eq} at the nearest residences. Thus, construction impacts associated with the proposed San Fernando substation upgrades would be less than significant.

Operation Impacts

Would the Proposed Project cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Proposed Project Components located within the Storage Field

Based on the noise levels predicted for the proposed SCE Natural Substation and proposed Central Compressor Station site, noise levels at the nearest residences would be below 45 dBA L_{eq} any time and would comply with the Los Angeles and County noise ordinances. Thus, the operation noise associated with the Proposed Project components located with the Storage Field would not violate any known ordinance and this impact would be less than significant.

Proposed SCE 66 kV Sub-transmission Modification

The alignment of the proposed SCE 66 kV sub-transmission modification would be located along an existing transmission corridor when in proximity to noise sensitive receptors. The noise levels generated by the proposed SCE 66 kV sub-transmission modification would be similar to the existing 66 kV sub-transmission lines. . Thus, the operation noise associated with the proposed SCE 66 kV sub-transmission modification would not violate local noise ordinances and this impact would be less than significant.

Proposed Substation Upgrades

While the Proposed Project would install new relay switches at the Newhall, Chatsworth, and San Fernando Substations, these upgrades would not increase the operational noise levels. Additionally, the up to four new TSPs to be installed at the San Fernando Substation would typically be higher than the existing LSTs, resulting in a greater path length between the noise source and receptors, which could potentially result in a reduction in noise levels associated with the proposed substation upgrades. Thus, the operation noise associated with the proposed improvements at the Newhall, Chatsworth, and San Fernando Substations would not violate any known ordinance and this impact would be less than significant.

Would the Proposed Project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Proposed Central Compressor Station

Operation of the proposed Central Compressor Station and associated motors would generate vibration in the immediate vicinity of the equipment. However, due to the distance to the nearest vibration sensitive receiver, vibration levels would attenuate below the level of perception, thus operation of the proposed Central Compressor Station would result in less than significant impacts from vibration sources.

Proposed SCE Natural Substation

Operation of the transformers at the proposed SCE Natural Substation could produce groundborne vibration, but it would be perceptible only in the immediate vicinity of the transformer pad. Due to the distance to the nearest vibration sensitive receiver, vibration levels would attenuate below the level of perception, thus operation of the proposed SCE Natural Substation would result in less than significant impacts from vibration sources.

Proposed SCE 66 kV Sub-transmission Modification

There are no known vibration sources associated with proposed SCE 66 kV sub-transmission modification, thus there would be no vibration impact to sensitive receptors from the operation of the proposed SCE 66 kV sub-transmission modification.

Proposed Substation Upgrades

The proposed substation upgrades include installation of new relay systems and construction of two new positions at the San Fernando Substation. Construction of two new positions will require removal of two existing LSTs, and installation of four new TSPs. The proposed upgrades do not include installation of equipment that would produce groundborne vibration or impact the existing operating conditions. Thus operation of the proposed substation upgrades would result in less than significant impacts from vibration sources.

Would the Proposed Project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project?

Proposed Project Components located within the Storage Field

The development of the proposed Central Compressor Station site and the proposed SCE Natural Substation would have the potential to alter the existing noise environment. The proposed office trailer and guard house relocations would relocate noise associated with these facilities, but would not alter noise levels off-site.

Based on a review of aerial photography, the nearest receptors are approximately 3,500 feet southwest of the proposed Central Compressor Station site; at this distance noise levels would attenuate 37 dBA due to standard atmospheric conditions. Additionally, based on the modeling conducted for the Washington Group Report, the hills and other terrain blocking the proposed Central Compressor Station site from the surrounding neighborhood provide approximately 23 dBA attenuation. Thus, assuming the proposed Central Compressor Station site generates 97 dBA L_{eq} at 50 feet, these levels would attenuate to approximately 37 dBA L_{eq} at the nearest receptor. Based on the presumed ambient nighttime noise levels for Los Angeles, this would result in a combined noise level increase of 1.8 dBA, which would not be perceivable to the average human ear.

Noise levels from the proposed PPL would result in minor increases in noise levels in the immediate vicinity of the alignment of the proposed SCE 66 kV sub-transmission modification. Operational traffic and transportation impacts associated with operation of the Proposed Project are discussed in Section 4.15. Based on the traffic analysis, the Proposed Project would not result in an increase of operational traffic over existing volumes. As a result, the Proposed Project would not cause a substantial permanent increase in ambient noise levels in the Proposed Project vicinity above levels existing without the Proposed Project. Impacts would be less than significant.

Proposed Sub-transmission Modification

The alignment of the proposed SCE 66 kV sub-transmission modification would be located within an existing transmission corridor, when in proximity to noise sensitive receptors. The noise levels generated by the proposed SCE 66 kV sub-transmission modification would be similar to the existing 66 kV sub-transmission system. Where corona discharges do occur, these would be intermittent and would not be expected to be audible at ground level and would not exceed local noise ordinances. Additionally, the new poles would typically be higher than the existing tower, resulting in a greater path length between the noise source and receptors, which would potentially result in a reduction in noise levels associated with the proposed SCE 66 kV sub-transmission modification. Thus, the operation noise associated with the

proposed SCE 66 kV sub-transmission modification would not result in a substantial noise level increase and this impact would be less than significant.

Proposed Substation Upgrades

While the Proposed Project would upgrade relay switches at the Newhall, Chatsworth, and San Fernando Substations, these upgrades would not increase the operational noise levels. The noise levels generated by the upgraded San Fernando Substation would be similar to the existing San Fernando Substation. The four new poles would typically be higher than the existing towers, resulting in a greater path length between the noise source and receptors, which would potentially result in a reduction in noise levels associated with the modified SCE 66 kV sub-transmission lines that would be interconnected to the San Fernando Substation. Thus, the operation noise associated with the proposed improvements at the Newhall, Chatsworth, and San Fernando Substations would not result in a substantial noise level increase and this impact would be less than significant.

Would the Proposed Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Proposed Project?

Proposed Project Components located within the Storage Field

Temporary noise increases during operation of the proposed Central Compressor Station and the proposed SCE Natural Substation would consist of routine inspection and maintenance of the facilities, which would not contribute to a temporary increase in ambient noise in the area. Additionally, as previously discussed the Proposed Project components would not result in a significant permanent increase in noise levels. Thus, impacts would be less than significant.

Proposed SCE 66 kV Sub-transmission Modification

The alignment of the proposed SCE 66 kV sub-transmission modification would be located within an existing transmission corridor, in proximity to noise sensitive receptors. The noise levels generated by the proposed SCE 66 kV sub-transmission modification would be similar to the existing 66 kV sub-transmission system. Where corona discharges do occur these would be intermittent and would not be expected to be audible at ground level and would not exceed local noise ordinances. Thus, the operation noise associated with the proposed SCE 66 kV sub-transmission modification would not result in substantial temporary noise level increases and this impact would be less than significant.

Proposed Substation Upgrades

While the Proposed Project would upgrade relay switches at the Newhall, Chatsworth, and San Fernando Substations, these upgrades would not increase the operational noise levels. The noise levels generated by the modified San Fernando Substation would be similar to the existing San Fernando Substation. The approximately four new poles would typically be higher than the existing tower, resulting in a greater path length between the noise source and receptors, which would potentially result in a reduction in noise levels associated with the modified SCE 66 kV sub-transmission lines that would be interconnected to the San Fernando Substation. Thus, the operation noise associated with the proposed improvements at the

Newhall, Chatsworth, and San Fernando Substations would not result in a temporary noise level increases and this impact would be less than significant.

4.11.5 Mitigation Measures

The Proposed Project was determined to have **a less than significant impact without mitigation** due to construction and operation; therefore no mitigation is required or proposed.

4.11.6 References

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