

**SUNCREST DYNAMIC REACTIVE POWER SUPPORT
PROJECT
CONSTRUCTION NOISE MITIGATION PLAN**

Prepared for

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1 INTRODUCTION

NextEra Energy Transmission West, LLC (NEET West) has prepared this Construction Noise Mitigation Plan (CNMP) to detail specific mitigation options that may be used during Dynamic Reactive Power Support Project (project) construction to reduce identified noise impacts to less-than-significant levels.

The project consists of constructing a Static Var Compensator (SVC) dynamic reactive device and an approximately 1-mile-long, 230-kV, single-circuit underground transmission line interconnecting with the existing Suncrest Substation in San Diego County, California.

As part of the project's CNMP, construction noise level controls will include, but not be limited to, ensuring that internal combustion-driven equipment is equipped with appropriate mufflers, constructing and using temporary sound barriers for specific activities/noise sources, notifying residences or noise-sensitive receptors prior to beginning noise-generating work, and providing contact information for a construction liaison to respond to noise complaints.

1.1 Objectives

This CNMP defines the measures to control and limit noise levels at sensitive receptors in the vicinity of the project. Creating this CNMP and complying with it will meet Mitigation Measure (MM) NOI-1 of the project's Mitigation Monitoring and Reporting Program (MMRP). This CNMP includes specific procedures to implement MM NOI-1. Section 4 of this CNMP lists the individual mitigation options to comply with MM NOI-1. Implementation of MM NOI-1 would be anticipated to reduce project construction noise below applicable County standards.

1.2 Project Overview

The project would involve construction of a dynamic reactive device and approximately 1-mile-long transmission line interconnecting with the existing Suncrest Substation in San Diego County, near Alpine, California. The dynamic reactive device would provide reactive power support and voltage regulation to the existing substation and transmission system.

1.3 Project Location

The project would be located in unincorporated south-central San Diego County, approximately 3.75 miles southeast of the community of Alpine, off of Bell Bluff Truck Trail. The city of El Cajon is approximately 13.36 miles to the west. Interstate 8 (I-8) is approximately 1.75 miles to the north, and Japatul Valley Road (State Highway 79) is approximately 1.66 miles to the east. The lands surrounding the project are primarily undeveloped, with some rural-residential development to the east and south and the existing Suncrest Substation at the project's western end.

1.4 Project Construction

As described above, the project would involve the construction of two primary components: (1) an SVC dynamic reactive power support device, and (2) an approximately 1-mile-long underground transmission line that would transition to an approximately 300-foot-long overhead span that connects into the existing Suncrest Substation. Construction activities related to these two components are described briefly below.

In general, construction of the SVC would require clearing of vegetation, grading, excavation, construction of structure and equipment foundations, installation of SVC and electrical equipment, and restoration of temporary impacts.

Construction of the transmission line would involve trenching within Bell Bluff Truck Trail, construction and installation of the duct bank and splice vaults, installation of the riser pole and intermediate pole, pulling of cables into the duct banks and splice vaults, and restoration of the road surface.

Construction of the above components could involve the use of a rock drill, scraper, and/or blasting to excavate and break up hard rock material.

1.5 Timeframe

The total construction duration will be approximately 11 months: approximately 6.5 months for construction, approximately 2.5 months for testing and commissioning, and approximately 2 months for restoration and cleanup.

1.6 Construction Hours

Typically, construction would occur 10 hours per day, 6 days per week, Monday through Saturday, between 7 a.m. and 7 p.m.; however, certain time-sensitive activities and/or activities that are not noise-intensive might occur outside these hours.

2 APPLICABLE REGULATIONS


This CNMP will ensure that the project will be consistent with the applicable noise ordinances. This section reviews those applicable noise ordinances.


2.1 San Diego County General Plan, Noise Element


The County has adopted noise compatibility guidelines for various land uses as part of the San Diego County General Plan, Chapter 8 “Noise Element” (County of San Diego 2011). The noise compatibility guidelines, as presented in Table N-1 of the San Diego County General Plan, are presented in Table 1 below and are similar to those of the State Land Use Compatibility Standards for Community Noise, in particular, that exterior noise levels of up to 60 A-weighted decibels or community noise equivalent level (dBA CNEL) are compatible with single-family residential use. If the exterior noise level is between 60 and 75 dBA CNEL, the noise level is “conditionally acceptable.” The new development should only be undertaken after a detailed noise analysis is conducted to determine if noise reduction measures are required. If a project’s exterior noise level cannot be mitigated to less than 60 dBA CNEL and interior noise level to 45 dBA, then the appropriate County decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist. If the exterior noise level at a noise-sensitive land use (NSLU) is projected to be greater than 75 dBA CNEL, the development will not be approved.

Table 1. San Diego County General Plan Noise Compatibility Guidelines

| Land Use Category | Exterior Noise Level (CNEL) | | | | | |
|--|-----------------------------|----|----|----|----|----|
| | 55 | 60 | 65 | 70 | 75 | 80 |
| A Residential – single-family residences, mobile homes, senior housing, convalescent homes | | | | | | |
| B Residential – multi-family residences, mixed-use (commercial/residential) | | | | | | |
| C Transient lodging – motels, hotels, resorts | | | | | | |
| D* Schools, churches, hospitals, nursing homes, child care facilities | | | | | | |
| E* Passive recreational parks, nature preserves, contemplative spaces, cemeteries | | | | | | |
| F* Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation | | | | | | |
| G* Office/professional, government, medical/dental, commercial, retail, laboratories | | | | | | |
| H* Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair | | | | | | |

 **ACCEPTABLE**—Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.

 **CONDITIONALLY ACCEPTABLE**—New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table N-2, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate county decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.

 **UNACCEPTABLE**—New construction or development shall not be undertaken.

* Denotes facilities used for part of the day; therefore, an hourly standard would be used rather than CNEL.

The Noise Element of the General Plan also includes special provisions for County road construction projects and interior noise levels in rooms that are usually occupied for only a part of the day (e.g., schools, libraries, etc.). Because the nearest NSLU to the project is single-family residential, requirements for these other land uses are not detailed in this section.

The San Diego County General Plan seeks to preserve rural areas from the encroachment of urban noise, by preventing the exposure of residents to excessive noise levels while protecting facilities and operations that may generate noise but are essential to the economic viability of the county. The General Plan

identifies goals and the policies used to meet those goals to promote compatibility between land uses. Goals and polices that apply to the project are summarized below.

- **Goal N-1, Land Use Compatibility:** A noise environment throughout the unincorporated county that is compatible with the land uses.
 - **Policy N-1.1, Noise Compatibility Guidelines:** Use the Noise Compatibility Guidelines (Table 1 above) as a guide in determining the acceptability of exterior and interior noise for proposed land uses.
 - **Policy N-1.2, Noise Management Strategies:** When abatement is necessary, strategies such as avoiding placement of NSLUs in noisy areas and increasing setbacks between noise generators and NSLUs should be used in place of conventional noise barriers.
 - **Policy N-1.3, Sound Walls:** The use of sound walls is discouraged in favor of noise management strategies. If sound walls cannot be avoided, visual screening methods (such as vegetation) shall be used to soften the visual appearance of the wall.
- **Goal N-2, Protection of Noise Sensitive Uses:** A noise environment that minimizes exposure of NSLUs to excessive, unsafe, or otherwise disruptive noise levels.
 - **Policy N-2.1, Development Impacts to Noise Sensitive Land Uses:** An acoustical study is required to identify and mitigate inappropriate noise levels where development may result in exterior noise levels of greater than 60 dBA CNEL.
- **Goal N-3, Groundborne Vibration:** An environment that minimizes exposure of sensitive land uses to the harmful effects of excessive groundborne vibration.
 - **Policy N-3.1, Groundborne Vibration:** Use appropriate Federal Transit Administration and Federal Railroad Administration guidelines to limit the exposure of sensitive land uses to groundborne vibrations from trains, construction equipment, and other sources.
- **Goal N-6, Temporary and/or Nuisance Noise:** Minimal effects of intermittent, short-term, or other nuisance noise sources to noise sensitive land uses.
 - **Policy N-6.4, Hours of Construction:** Require development to limit the hours of operation as appropriate for non-emergency construction and maintenance, trash collection, and parking lot sweeper activity near noise sensitive land uses.

2.2 County of San Diego Noise Ordinance

The County's Noise Ordinance (County of San Diego 2008), which is included in the County Code's Chapter 4, Noise Abatement and Control (Sections 36.401 through 36.435), recommends general noise level limits, establishes sound level limitations on impulsive and construction noises, and stipulates acceptable hours of operation for construction equipment. For areas zoned as residential, general agriculture, or open space lands, including the project site, the ordinance establishes general noise level limits of 50 dB between 7 am and 10 pm, and 45 dB between 10 p.m. and 7 a.m. The Ordinance requires that construction equipment only be operated between 7 a.m. and 7 p.m. and not on Sundays or holidays. Construction equipment noise is restricted to an average sound level of 75 dB for an eight-hour period (between the allowable 7 a.m. and 7 p.m. window) measured at the boundary of the property where the noise source is located or on any occupied property where the noise is being received.

In addition to the general and construction noise limits, the ordinance establishes that impulsive noises will not exceed 82 dBA at the boundary line for properties with residential uses and 85 dBA for properties with agricultural, commercial, or industrial uses for more than 25 percent of any 1-hour measurement period. The ordinance defines impulsive noise as a “single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Examples include, but are not limited to, a gunshot, an explosion or a noise generated by construction equipment” (County of San Diego 2008).

3 MITIGATION MEASURES

Options for mitigating noise levels can be categorized by their location in reference to the source-to-receiver transmission path:

- Noise control at the source refers to the actual reduction of source noise emissions;
- Attenuation along the sound propagation path interferes with the sound as it travels from the source to the receiver; and
- Noise mitigation at the receiver reduces the impact of sound received at the receptor.

For maximum benefit, these options may be used in combination with one another. Specifically, this CNMP addresses the noise mitigation options listed under MM NOI-1, which states:

Mitigation Measure NOI-1: NEET West and/or its contractors shall develop and implement a construction noise mitigation plan in close coordination with adjacent noise-sensitive land uses so that construction activities can be scheduled to minimize noise disturbance. The plan must be approved by the CPUC prior to the initiation of construction activities. The construction noise mitigation plan shall consider the following available controls to reduce construction-noise levels to as low as practicable:

- *Equip all internal combustion-driven equipment with mufflers that are in good condition and appropriate for the equipment.*
- *Construct temporary sound barriers using plywood or similar material bearing the same sound-attenuating effectiveness as plywood between portions of the construction sites and sensitive receptors. These temporary sound barriers, which could also consist of construction grade sound blankets/curtains, should be at least 12 feet in height. Sound barriers shall be used during activities involving the use of a rock drill, scraper, and/or blasting.*
- *Alternatively, if a rock drill was not required for the project, construction equipment with a reference noise level of 89 dB or less could be used and would not require construction of temporary sound barriers.*
- *Residences or noise-sensitive land uses within 500 feet of the construction site should be notified in writing of construction at least seven (7) days prior to the onset of construction activities. A “construction liaison” contact person should be designated in the notifications; he/she would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.), and institute reasonable measures to correct the problem. The phone number of the liaison should be conspicuously posted at the construction site.*

4 PLAN IMPLEMENTATION

Table 2 describes how the project will implement all MM NOI-1 requirements.

Table 2. Addressing Mitigation Measure NOI-1 Requirements

| Mitigation Measure Requirement | How the Project will Implement the Requirement |
|---|--|
| NEET West and/or its contractors shall develop and implement a construction noise mitigation plan in close coordination with adjacent noise-sensitive land uses so that construction activities can be scheduled to minimize noise disturbance. The plan must be approved by the CPUC prior to the initiation of construction activities. | This plan has been developed by NEET West and/or its contractors and will be submitted to the CPUC for review and approval prior to beginning construction. The purpose of this plan is to comply with the requirement in MM NOI-1 to reduce identified construction noise impacts to less-than-significant levels. |
| Equip all internal combustion–driven equipment with mufflers that are in good condition and appropriate for the equipment. | All internal combustion–driven construction equipment will be equipped with mufflers that are in good condition and appropriate for the equipment. |
| Construct temporary sound barriers using plywood or similar material bearing the same sound-attenuating effectiveness as plywood between portions of the construction sites and sensitive receptors. These temporary sound barriers, which could also consist of construction-grade sound blankets/curtains, should be at least 12 feet in height. Sound barriers shall be used during activities involving the use of a rock drill, scraper, and/or blasting. Alternatively, if a rock drill was not required for the project, construction equipment with a reference noise level of 89 dB or less could be used and would not require construction of temporary sound barriers. | Any activities that involve the use of a rock drill, scraper, and/or blasting will use a sound barrier. The sound barrier will be constructed of plywood, or similar material bearing the same sound-attenuating effectiveness as plywood, or construction-grade sound blankets or curtains. The sound barrier will be constructed between the portion of the construction site where the activity is taking place and sensitive receptors. The sound barrier will be at least 12 feet in height. A sound barrier will not be constructed if the construction activity does not use a rock drill and the construction equipment has a reference noise level of 89 dB or less. |
| Residences or noise-sensitive land uses within 500 feet of the construction site should be notified in writing of construction at least seven (7) days prior to the onset of construction activities. A “construction liaison” contact person should be designated in the notifications; he/she would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.), and institute reasonable measures to correct the problem. The phone number of the liaison should be conspicuously posted at the construction site. | Seven (7) days prior to beginning construction activities, residences and noise-sensitive land uses within 500 feet of the construction site will be notified in writing. The notifications will designate a “construction liaison” contact person. The “construction liaison” will be responsible for responding to any local complaints about construction noise, determining the cause of the noise complaints (e.g., starting too early, bad muffler, etc.), and instituting reasonable measures to correct the problem. The phone number of the construction liaison will also be posted conspicuously at the construction site. |

As part of project compliance, construction activities will be consistent with and will not take place outside of the allowable hours specified by Section 36.409 of the County of San Diego Noise Ordinance. Construction equipment will be operated between 7 a.m. and 7 p.m. and not on Sundays or holidays as required by the San Diego County Code’s Chapter 4, Noise Abatement and Control (section 36.409). However, certain time-sensitive activities and/or activities that are not noise-intensive may occur outside these hours, including, but not limited to, splicing, testing, commissioning, etc.

4.1 Equipment

Equipment engine attenuation is a source mitigation option that assumes all construction equipment and vehicles powered with an internal combustion engine is in good working order, adequately muffled, and maintained in accordance with the manufacturers’ recommendations. NEET West and/or its contractors shall use equipment furnished with mufflers that are in good condition and appropriate for the equipment.

4.2 Temporary Sound Barrier

Temporary sound barriers can be a very effective method for noise mitigation. To be effective, sound barriers should be constructed of a solid (i.e., no holes, gaps, or cracks) material.

As described above, MM NOI-1 requires that activities involving the use of a rock drill, scraper, and/or blasting should use a sound barrier. The sound barrier will be constructed of plywood, similar material bearing the same sound-attenuating effectiveness as plywood, or construction-grade sound blankets or curtains. The sound barrier will be placed between the portion of the construction site where the activity is taking place and sensitive receptors. The sound barrier will be at least 12 feet in height. A sound barrier will not be constructed if the construction activity does not use a rock drill and the construction equipment has a reference noise level of 89 dB or less.

4.3 Notifications and Public Liaison

Seven (7) days prior to beginning construction activities, residences and noise-sensitive land uses within 500 feet of the construction site will be notified in writing. The notifications will designate a “construction liaison” contact person. The “construction liaison” will be responsible for responding to noise complaints about during the construction phase, determining the cause of the noise complaints (e.g., starting too early, bad muffler, etc.), and instituting reasonable measures to correct the problem. The phone number of the construction liaison will also be posted conspicuously at the construction site and on all advanced notifications.

5 REFERENCES

County of San Diego. 2008. *San Diego County Noise Ordinance (Ordinance No. 9962), Chapter 4*. Adopted December 10, 2008. Available at: <http://www.sandiegocounty.gov/cob/ordinances/ord9962.doc>. Accessed May 2015.

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