FILED
04/06/22
04:59 PM
A2204004

APPENDIX E

ELECTRIC AND MAGNETIC FIELDS MANAGEMENT PLAN

APPENDIX E
FIELD MANAGEMENT PLAN

Fern Road Substation Project

LS Power Grid California, LLC

April 2022

1.1 INTRODUCTION

In 1993, the California Public Utilities Commission (CPUC) adopted an electromagnetic field (EMF) policy for electric utility facilities and power lines.[1] Because the CPUC concluded there was no reliable scientific basis for adverse health effects from power grid frequency EMF, the CPUC declined to adopt a specific numerical standard for EMF exposure.[2] In 2004, the Commission opened a rulemaking docket to determine whether there were improvements that should be made to the EMF policy established in 1993.

In 2006, the Commission issued Decision 06-01-042, which affirmed the prior finding that no direct link between exposure to EMF and adverse health effects had been proven, despite numerous studies, including a research program ordered by the Commission and conducted by the Department of Health Services.[3] The decision also addressed the mitigation measures to be required in different land use contexts and determined that low-cost measures were not required in agricultural or undeveloped areas. Only no-cost mitigation measures are required in those areas.[4]

The CPUC adopted *EMF Design Guidelines for Electrical Facilities* dated July 21, 2006 (the "FMP Guidelines"), which require preparation of a substation field management plan (FMP) in the form of a checklist for construction of any new substation rated 50 kilovolts (kV) or above. The FMP Guidelines also state that magnetic field modeling for a new substation project is not required.

This FMP document, which was developed in accordance with the FMP Guidelines, provides a description of the measures proposed to reduce the potential for exposure to EMF generated by the proposed Fern Road Substation .

1.2 PROJECT DESCRIPTION

The Round Mountain 500 kilovolt (kV) Area Dynamic Reactive Support Project (Proposed Project) was approved by the California Independent System Operator Corporation (CAISO) to ensure the reliability of the CAISO controlled grid. This would be accomplished through the construction of a dynamic reactive device. The Proposed Project is being developed by LS Power Grid California, LLC (LSPGC), a Delaware limited liability company established to own transmission projects in California.

The Proposed Project consists of a dynamic reactive power support substation (the Fern Road Substation) providing approximately +/-529 million volt-amperes, reactive (MVAR) dynamic reactive capability to be installed in a minimum of two, equally sized Static Synchronous Compensator (STATCOM) units. Each STATCOM unit would be independently connected to the existing PG&E regional electric transmission system via the Round Mountain – Table Mountain #1 and #2 500 kV transmission lines that are located adjacent to the Project site.

Regarding the Fern Road Substation site, LSPGC holds an option to purchase 40 acres or more within an approximately 426-acre parcel located directly adjacent to the Round Mountain – Table

[1] Decision 93-11-013, pp. 10-11.
[2] *Id.* at p. 11.
[3] Decision 06-01-042 at 19.
[4] *Id.* at pp. 9, 20 (Finding of Fact 18).

Mountain #1 and #2 500 kV transmission line corridor. The Fern Road Substation site is located east of Fern Road and east of the existing PG&E transmission right-of-way (ROW), approximately 1.6 miles northwest of the unincorporated community of Whitmore and approximately 9.3 miles north of State Highway 44 in unincorporated southern Shasta County. The Fern Road Substation site is located within the eastern half of Public Land Survey System (PLSS) Section 11 of Township 32 North and Range 1 West. The Fern Road Substation site is mapped as grazing land (one of the Important Farmland categories) by the California Department of Conservation and is currently used as grazing land. As such, the Fern Road Substation site is classified as an agricultural area.

1.3 FMP INFORMATION

Per the FMP Guidelines, construction of a new substation rated 50 kV or above requires the preparation of a substation FMP in a form of a checklist. As discussed above, Decision 06-01-042 determined that low-cost field reduction measures are not required in agricultural areas.[5] As such, the checklist provided in Table 1 below evaluates only no-cost field reduction measures.

Table 1. Checklist Evaluation of No-Cost Field Reduction Measures

No.	Magnetic Field Reduction Measures Evaluated for the Proposed Project	Measure Adopted? (Yes/No)	Reason(s) if not Adopted
1	Locate high-current devices, transformers, capacitors, and reactors away from the substation property lines.	Yes	--
2	For underground duct banks, the minimum distance should be 12 feet from the adjacent property lines or as close to 12 feet as practical.	Yes	--
3	Locate new substations close to existing power lines to the extent practical.	Yes	--
4	Increase the substation property boundary to the extent practical.	Yes	--
5	Locate the Proposed Project close to existing substations to the extent practical.	Yes	--

[5] In addition, the nearest residence is located approximately 1,400 feet to the northwest of the Fern Road Substation fence line, with the existing Round Mountain – Table Mountain 500 kV transmission lines located between the residence and the Fern Road Substation. As such, there will be no noticeable change to electric or magnetic fields at any residence due to the Fern Road Substation. Low-cost mitigation measures are therefore not applicable per Section 1.1.B.b of the CPUC's *EMF Design Guidelines for Electrical Facilities* (July 21, 2006).