BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U-338-E) for a Certificate of Public Convenience and Necessity for the San Joaquin Cross Valley Loop Transmission Project	)))))	Application No. _____ (Filed May 30, 2008)

APPLICATION OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT THE SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

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Dated: May 30, 2008

APPLICATION OF SCE FOR A CPCN TO CONSTRUCT THE SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

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Pursuant to Sections 1001, 1003.5, and 1004 et seq. of the California Public Utilities Code, the California Environmental Quality Act ("CEQA") (Public Resources Code § 21000 *et seq*.), the California Public Utilities Commission's ("Commission") General Order 131-D ("G.O. 131-D"), and the Commission's Rules of Practice and Procedure, Southern California Edison Company ("SCE") requests a Certificate of Public Convenience and Necessity ("CPCN") to permit SCE to construct the San Joaquin Cross Valley Loop Transmission Project ("SJXVL").

I. INTRODUCTION

SCE is proposing to construct SJXVL to provide electrical facilities necessary to maintain safe and reliable electric service to customers, and to serve the forecasted electrical demand in the southeastern portion of the San Joaquin Valley. SJXVL would consist of:

- Replacement of approximately 1.1 miles of two sets of existing single-circuit 220 kV transmission line segments with a single double-circuit transmission line segment to be constructed with double-circuit structures on the western side of SCE's existing right-of-way ("ROW") immediately north of Rector Substation. This would clear the eastern side of the existing SCE ROW in order to provide a

location for the construction of the first 1.1 miles of the new transmission line described immediately below;

- Construction of a new, approximately 18.5 mile-long, double-circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line circuit and the new Rector-Springville 220 kV transmission line circuit. The first 1.1 miles of the new double-circuit transmission line would be on the eastern side of SCE's existing ROW adjacent to the new double-circuit 1.1 mile line segment described above;
- Installation of electrical equipment and supporting structures for the transmission lines, protective relays, and a mechanical and electrical equipment room (MEER) at Rector Substation to accommodate the new transmission lines; and
- Removal of wave traps and line tuners and installation of additional protective relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation.

The SJXVL loops the existing Big Creek 3-Springville 220 kV transmission line into the Rector Substation to reduce the possibility of overloads on existing 220 kV transmission lines in the Big Creek Corridor. On June 24, 2004, the CAISO Board of Governors approved the looping of the Big Creek 3-Springville 220 kV transmission line into the Rector Substation as the preferred long-term transmission alternative to address identified reliability concerns.[1]

II. PROCEEDING CATEGORY, NEED FOR HEARINGS, AND SCHEDULE

In compliance with Rule 2.1(c) of the Commission's Rules of Practice and Procedure (California Code of Regulations Title 20), SCE is required to state in this Application "the proposed category for the proceeding, the need for hearing, the issues to be considered, and a

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[1] General Session Minutes, Board of Governors, California ISO (June 24, 2004) at 3 (available at http://www.caiso.com/pubinfo/BOG/minutes/docs/040624generalsessionminutes.pdf).

proposed schedule." SCE proposes to categorize this Application as a ratesetting proceeding. SCE anticipates that hearings will be necessary. This proceeding involves the Commission's (i) environmental review of the proposed Project in compliance with the CEQA and the Commission's G.O. 131-D; and (ii) issuance of a CPCN authorizing SCE to construct the Project.

SCE suggests the following proposed schedule for this Application. The schedule assumes the Commission will approve the Environmental Impact Report at a Commission Meeting following shortly after the expiration of the one-year period following the Commission's acceptance of a complete application as required by Public Resources Code § 21100.2.

Application Filed	5/30/08
Daily Calendar Notice Appears	6/08
Protests	6/30/08
Replies	7/09/08
Application Found Complete	7/08
SCE Supplemental Direct	9/08
Draft EIR Circulated	12/08
Comments on DEIR	1/09
Prehearing Conference	2/09
Interested Party Testimony Due	4/09
SCE Rebuttal Testimony Due	5/09
Evidentiary Hearings	6/09
Concurrent Opening Briefs Due	7/09
Concurrent Reply Briefs Due	8/09
Final EIR Issued	9/09
Proposed Decision Issued	9/09
Comments on Proposed Decision Due	10/09
Reply Comments Due	10/09
Final Decision Issued	11/09

III. DEPOSIT FOR COSTS

Pursuant to Rule 2.5 of the Commission's Rules of Practice and Procedure, SCE is enclosing with this application a filing fee of $75.00. Additionally, SCE has complied with Rule 2.5 by sending a deposit in the amount of $41,667 to the Commission's Energy Division on May 30, 2008, to be applied to the costs of the Commission incurs to prepare an environmental

impact report for this project. The remaining deposits will be sent to the Commission according to the schedule, which is set forth in Rule 2.5(c).

IV. LOCATION OF ITEMS REQUIRED BY PUBLIC UTILITIES CODE SECTION 1003, COMMISSION'S RULES, AND GENERAL ORDER 131-D

The Public Utilities Code, the Commission's Rules of Practice and Procedure, and the Commission's General Orders require various items of information to be submitted with CPCN applications. The table below lists the items, the authority which dictates the submittal, and references where the information is included in SCE's filing.

CPCN APPLICATION FILING REQUIREMENTS

Requirement	Authority	Testimony or Appendix	PEA
A detailed description of the proposed project	G.O. 131-D, IX.A.1.a; Rule 3.1(a); Public Utilities Code 1003(a)		3.0
A project map	G.O. 131-D, IX.A.1.b; Rule 3.1(c)		Figure 2.1
A purpose and need statement	G.O. 131-D, IX.A.1.c; Rule 3.1(c)		1.0
Project Implementation Plan	Public Utilities Code 1003(b)	Appendix A Project Plan	
Design, Construction Management and Cost Control Plan	Public Utilities Code 1003(e)	Appendix A Project Plan	
A detailed statement of the estimated cost	G.O. 131-D, IX.A.1.d; Rule 3.1(f); Public Utilities Code 1003(c)	Testimony	
Route selection including comparison with alternative routes	G.O. 131-D, IX.A.1.e		2.0
A project schedule showing the program of right-of-way acquisition and construction	G.O. 131-D, IX.A.1.f	Appendix A Project Plan	
Governmental Agency Consultations	G.O. 131-D, IX.A.1.g		Appendix G
PEA	G.O. 131-D, IX.A.1.h		Submitted with Application
EMF Field Study	G.O. 131-D, Section X.A	B	
Notice of Application	G.O. 131-D, XI.A	C	
Articles of Incorporation (Rule 2.3)	CPUC Information and Criteria List Appendix B, 2.2; Rule 2.2,	D	

Requirement	Authority	Testimony or Appendix	PEA
	Public Utilities Code 1004		
Financial Statement (Rule 2.3); Statements and/or exhibits showing financial ability of applicant to render service; Annual Report and/or Proxy Statement	CPUC Information and Criteria List Appendix B, 2.3; Rule 3.1(g) and (1); Rule 2.3	E	
Names/addresses of all utilities, corporations, persons, or entities with which the proposed construction is likely to compete, and names of cities and counties within which service will be rendered.	Rule 3.1(b)	F	
List identifying the permits required	Rule 3.1(d)		Appendix J
Annual revenue requirement	Rule 3.1(h); Public Utilities Code 1003(d)	G	

V. CONCLUSION

SCE respectfully requests the Commission issue a CPCN for the SJXVL Project.

Respectfully submitted,

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Dated: May 30, 2008

Appendix A

PROJECT PLAN

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

PROJECT PLAN

1.0 INTRODUCTION

This document is a part of Southern California Edison's San Joaquin Cross Valley Loop Transmission Project (SJXVL) application for a Certificate of Public Convenience and Necessity (CPCN) to the California Public Utilities Commission. This document either includes the materials required by California Public Utilities (PU) Code Section 1003 or indicates by references to where they can be found elsewhere in the SJXVL CPCN application.

The "Preliminary engineering and design information" required by PU Code Section 1003 (a) may be found in the Chapter 3.0 of SCE's Proponent's Environmental Assessment.

2.0 PROJECT IMPLEMENTATION PLAN

2.1 Introduction

The SJXVL will be managed on a Project Management matrix basis. The Project Manager for the licensing (regulatory approval) phase will be responsible to the Customer Service Business Unit and the Project Manager for the execution (design and construction) phase will be responsible to the Transmission & Distribution Business Unit (TDBU) organization for the completion of work in accordance with this plan. The project team will be identified early in the project development process to support the preparation and development of documents used in project licensing filings, in addition to project implementation following completion of licensing. Given the large project scope, cost, long material lead time, and the extended construction period, procurement of major long-lead time materials must begin prior to regulatory approval. Extensive support will be required at the start of final engineering and will continue through the end of the project. Construction can not begin until after regulatory approval. Any required permits identified in the regulatory approval process, must also be obtained before construction can begin in the affected areas.

2.2 Project Management Team

The Project Managers have the overall responsibility and commensurate authority for successful completion of the project. Responsibilities include: planning, obtaining all necessary regulatory approvals, cost estimating, scheduling and implementation of the project. Project work will be conducted using a matrix based Project Management model. All personnel assigned to the project functionally report to the Project Managers.

During the life of the project, the Project Management Team (PMT) will consist of a number of specialized teams and support personnel with special areas of expertise. Because of the changing

nature of the needs as the project progresses through the project development, regulatory approval and construction phases, the PMT will also change to meet the project needs.

For example, during the project development and regulatory approval phase, all of the individuals and organizations listed below are involved. During the project design and construction phase, the Project Management Team (PMT) consists of: the Project Manager (PM), Project Engineer, Construction Superintendent, Project Controls Engineer, Regulatory Compliance Specialist, and Project Analyst,. Representatives from other SCE organizations will be utilized as required. The PM is responsible for managing the activities of SCE team members as well as outside contractors.

The PMT is responsible for the successful implementation of the San Joaquin Cross Valley Loop Transmission Project. It is responsible for tracking costs, scope changes, schedules, and construction performance. The team will have regular meetings to discuss project status, review performance, and identify any special needs or significant concerns.

The Licensing Project Manager, Regulatory Representative, Execution Project Manager and the Project Attorney form the Licensing Project Team which has responsibility for regulatory management of the filing.

Roles and Responsibilities of individual PMT members and other key organizations

- Licensing Project Manager – The Licensing Project Manager is responsible for planning and coordinating all SCE activities to obtain regulatory approvals prior to proceeding with construction of the project. Specific responsibilities include identification of the applicable regulatory agencies and approvals required for the project, managing the preparation of the regulatory applications and environmental documentation, coordinating the project's participation in the agencies' permitting processes, and ensuring that necessary permits and regulatory approvals are obtained in a timely manner

- Execution Project Manager - The Execution Project Manager is responsible for the execution of work in accordance with the Project Plan, specifications, purchase orders, third party contracts, and all codes. The Project Manager reviews and evaluates bids and makes awards or award recommendations, reviews and evaluates all major equipment design, purchases and requests for engineering and/or construction field change orders, including schedule changes. The Execution Project Manager also reviews and approves all requests for invoice payments.

- Project Engineer - Reports functionally to the both the Licensing Project Manager and the Execution Project Manager and is responsible for providing project design criteria and scope of work and is responsible for the work product and the conduct of all engineering services. The Project Engineer oversees all engineering activities for the Project and provides the technical interface with other SCE organizations.

- Regulatory Compliance Specialist – The Regulatory Compliance Specialist (RCS) reports functionally to the Execution Project Manager and is responsible for providing permitting and regulatory compliance input during the planning/licensing phases of projects focusing on implementation logistics during the execution phase. The RCS is also responsible for

developing and implementing the Regulatory Compliance Plan, managing the permitting and regulatory compliance oversight activities, and providing compliance reports to the Execution Project Manager/Team and Management during the construction phase.

- Project Analyst – The Project Licensing Manager and Execution Project Manager will each have a Project Analyst, who will be responsible for: providing administrative support to the project team, creation and maintenance of a file(s) containing key project documentation, and communicating, implementing, and maintaining appropriate project management tools and systems.

- Project Controls Engineer - Reports functionally to the Execution Project Manager and is responsible for the administration and reporting for all project controls related to scope, cost, schedule, and change control major responsibilities include:
  1. Task authorization administration (opening, monitoring, closure of accounts)
  2. Compliance with reporting standards using: templates, Trend system, Scheduling systems, and other Project Controls System (PCS) tools.
  3. Production of periodic cost/schedule (status, variance, and earned value) reports
  4. Management of financial/accounting closure of project in accordance with corporate and regulatory requirements.

- Construction Manager - Reports functionally to the Execution Project Manager and provides construction management of all construction, startup, and testing work performed. Specific responsibilities include Construction Plan and Schedule development, constructability review of engineering designs, construction procurement and quality control, construction safety, environmental compliance, and safety and security.

Other Key Organizations

- Corporate Environment, Health, and Safety – Responsible for coordinating environmental assessments, including preparation of the Proponent's Environmental Assessment, lead responsibility for all project environmental issues and resource agency contacts on environmental matters.

- Corporate Real Estate – Lead responsibility for all property rights acquisitions, providing the project with property data, and providing survey and mapping support to the project. Serves as the primary interface with governmental agencies who manage or own lands over which property rights are required for the project.

- Law – Responsible for the preparation of the application for a Certificate of Public Convenience and Necessity (CPCN) to the CPUC, review of the PEA, and all project related legal documents and issues. CPCN related activities include testimony and witness preparation for all regulatory agency hearings. Also takes the lead in the review of property rights and all condemnation proceedings. The Project Attorney is a member of the Regulatory Project Team which has responsibility for regulatory management of the Case.

- Regulatory Policy and Affairs (RP&A) – The Regulatory Representative for RP&A is the primary regulatory interface with the FERC, CPUC, CEC and other State and Federal

permitting and ratemaking agencies. The Regulatory Representative is a member of the Regulatory Project Team which has responsibility for regulatory management of the filing.

- CSBU Transmission Project Licensing - Responsible for overall regulatory process management during project licensing phase, in addition to resolution of policy and contract issues that may arise during project implementation. The Licensing Project Manager is a member of the Regulatory Project Team which has responsibility for regulatory management of the filing.

- Electric System Planning – Responsible for system interconnection planning. Serves as the technical interface for: California Independent System Operator (CAISO), and Western Electricity Coordinating Council (WECC).

- Grid Contracts - Responsible for negotiating and obtaining third-party transmission interconnection agreements.

- Local Public Affairs – Responsible for being the SCE "face" to the general public, local and regional government, and special interest groups. Region Managers are assigned to individual communities and are utilized to identify local issues, needs, and concerns. Public Affairs, in conjunction with the PM and project specialists develop and implement the project Public Involvement Plan.

- Corporate Communications – Responsible for developing and implementing the project communication plan. Responsible for preparing media notices, outreach advertisements, communications and lead and coordinate interviews with the news media.

- EMF Group – Responsible for conducting Electric and Magnetic Field (EMF) studies, interfacing with the public on EMF issues, and preparation of the project EMF Field Management Plan included as part of the SJXVL CPCN application.

2.2 Project Design Management

The Project Engineer has responsibility serves as the primary project design management control mechanism for the entire project. The Project Engineer works in close coordination with the Licensing Project Manager and has the ability to resolve any potential differences among the various supporting engineering and design organizations.

2.3 Project Construction Management Plan

The complexities of SJXVL necessitate the use of alternative construction management approaches. The construction management option to be selected will be based on SCE's need to optimize its use of limited "in-house" resources and expertise in the most effective manner. The two major construction management approaches under consideration are:

1. SCE performs engineering and design and manages construction using SCE and contractor labor; or,

2. SCE develops "Engineering, Procurement, and Construction (EPC)" specifications which are the basis for selecting and managing an EPC contractor to perform engineering, design and construction.

SCE construction management personnel and the PMT will review SCE and contractor costs and progress on a regular basis. Table A-1, "Project Schedule", identifies the preliminary design, construction, completion, and operational dates for each of the major project components.

3.0 COST ESTIMATE

The Cost Estimate required by PU Code 1003 (c) may be found in testimony supporting SCE's application in accordance with Rule 1.7(b) of the Commission's Rules of Practice and Procedure.

4.0 COST CONTROL PLAN

The project Cost Control Plan is a part of the SJXVL Cost and Schedule Controls and Tracking procedures. Depending upon which resource is utilized to construct on this project, a Schedule of Values consistent with the Work Breakdown Structure (WBS) will serve as the basis for progress payments made to the contractor, or the measure of performance for Edison construction crews. If utilized, the contractor shall submit for Edison's review and approval its payment request, together with all required supporting documentation, for all work performed in the subject period. Included in the required supporting documentation are: resource and cost plots that graph weekly, monthly and cumulative craft labor and a cash flow plot. The plots shall be based on dates from the contractor's cost and resource loaded schedule. The specific items to be plotted (e.g. craft labor trades, equipment or material) shall be chosen by SCE.

The Contract Price may only be changed by a Field Change Order or by a Trend approved by the Execution Project Manager. The value of any Work covered by a Field Change Order will be determined by one of the following methods:

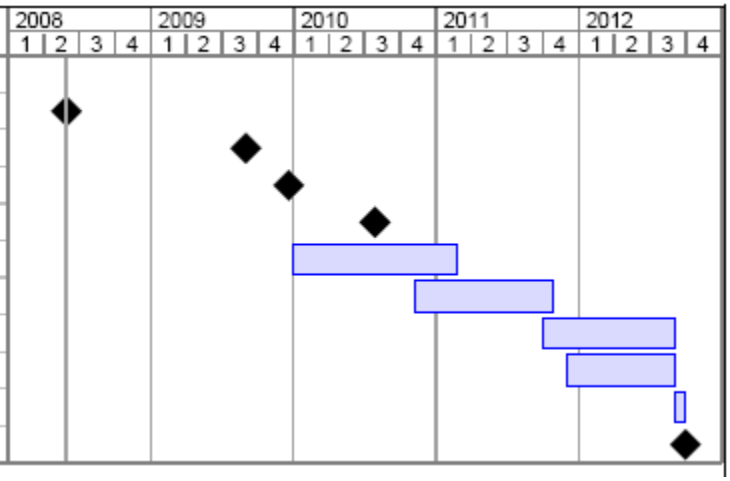
- Where the work involved is covered by unit prices contained in the Contract Documents- apply the unit prices to the quantities of the items.

- By a mutually agreed lump sum itemized and supported by substantiating data.

- Actual Cost of the Work plus a Contractor's fee.

PROJECT SCHEDULE

Task Name	Start.	Finish.
San Joaquin Cross Valley Loop		
Submit Permit Application to CPUC		5/08
Final EIR/EIS		9/09
CPUC License Approved		12/09
ROW Acquired		7/10
Engineering & Design	12/09	2/11
Procurement	11/10	10/11
Transmission Construction	10/11	9/12
Substation Construction	12/11	9/12
Testing	9/12	10/12
Operating Date	10/12	10/12



Appendix B

FIELD MANAGEMENT PLAN

SAN JOAQUIN CROSS VALLEY LOOP PROJECT

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LIST OF FIGURES

I. EXECUTIVE SUMMARY

This document is Southern California Edison Company's (SCE) Field Management Plan (FMP) for the Proposed San Joaquin Cross Valley Loop Project (Proposed Project).

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation located southeast of Visalia, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. As a result, SCE is proposing to construct the San Joaquin Cross Valley Loop Project, which consists of the construction of a new 19 mile double-circuit 220 kilovolt (kV) transmission line. This line would connect to an existing 220 kV transmission line, which would allow SCE to deliver additional power from SCE's Big Creek hydroelectric facilities in the Sierra Nevada Mountains into Rector Substation. The proposed transmission line route is approximately 19 miles long. The Proposed Route would begin at Rector Substation and proceed north for one mile within SCE's existing right-of-way. SCE proposes to replace two existing single-circuit 220 kV transmission lines, currently side by side in the right-of-way, with one double-circuit 220 kV transmission line. This would create sufficient space in the right-of-way to accommodate construction of the first mile of the new double-circuit 220 kV transmission line. The remaining 18 miles of the proposed transmission line would be constructed within a new 100-foot wide right-of-way to be acquired by SCE and would run east until the line intersects with the Big Creek 3 – Springville 220 kV transmission line located east of Lemon Cove and Highway 198. The Proposed Project is scheduled to be operational by mid-2011.

SCE provides this FMP in order to inform the public, the California Public Utilities Commission (CPUC), and other interested parties of its evaluation of "no-cost and low-cost" magnetic field reduction measures for this project, and SCE's proposed plan to apply these measures to this project. This FMP has been prepared in accordance with CPUC Decision No.

93-11-013 and Decision No. 06-01-042 relating to extremely low frequency[2] electric and magnetic fields (EMF). This FMP also provides background on the current status of scientific research related to possible health effects of EMF, and a description of the CPUC's EMF policy.

The "no-cost and low-cost" magnetic field reduction measures that are incorporated into the design of the Proposed Project are:

- Using a "double-circuit" pole-head configuration for the proposed 220 kV transmission lines;
- Using 10 ft taller poles for homes located immediately adjacent to the edges of right-of-way (ROW); and
- Implementing phasing arrangements of 220 kV transmission lines to reduce magnetic field levels at edges of ROW

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction measures for the Proposed Project is consistent with CPUC's EMF policy and with the direction of leading national and international health agencies. Furthermore, the plan complies with SCE's EMF Design Guidelines[3], and with applicable national and state safety standards for new electric facilities.

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[2] The extreme low frequency is defined as the frequency range from 3 Hz to 3,000 Hz.

[3] EMF Design Guidelines, August 2006.

II. BACKGROUND REGARDING EMF AND PUBLIC HEALTH RESEARCH ON EMF

There are many sources of power frequency[4] electric and magnetic fields, including internal household and building wiring, electrical appliances, and electric power transmission and distribution lines. There have been numerous scientific studies about the potential health effects of EMF. After many years of research, the scientific community has been unable to determine if exposures to EMF cause health hazards. State and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.[5]

Many of the questions about possible connections between EMF exposures and specific diseases have been successfully resolved due to an aggressive international research program. However, potentially important public health questions remain about whether there is a link between EMF exposures and certain diseases, including childhood leukemia and a variety of adult diseases (e.g., adult cancers and miscarriages). As a result, some health authorities have identified magnetic field exposures as a possible human carcinogen. As summarized in greater detail below, these conclusions are consistent with the following published reports: the National Institute of Environmental Health Sciences (NIEHS) 1999[6], the National Radiation Protection Board (NRPB) 2001[7], the International Commission on non-Ionizing Radiation Protection (ICNIRP) 2001, the California Department of Health Services (CDHS) 2002[8], and the International Agency for Research on Cancer (IARC) 2002[9].

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4 In U.S., it is 60 Hertz (Hz).

5 CPUC Decision 06-01-042, p. 6, footnote 10

6 National Institute of Environmental Health Sciences' Report on Health Effects from Exposures to Power-Line frequency Electric and Magnetic Fields, NIH Publication No. 99-4493, June 1999.

7 National Radiological Protection Board, Electromagnetic Fields and the Risk of Cancer, Report of an Advisory Group on Non-ionizing Radiation, Chilton, U.K. 2001

8 California Department of Health Services, An Evaluation of the Possible Risks from Electric and Magnetic Fields from Power Lines, Internal Wiring, Electrical Occupations, and Appliances, June 2002.

9 World Health Organization / International Agency for Research on Cancer, IARC Monographs on the evaluation of carcinogenic risks to humans (2002), Non-ionizing radiation, Part 1: Static and extremely low-frequency (ELF) electric and magnetic fields, IARCPress, Lyon, France: International Agency for Research on Cancer, Monograph, vol. 80, p. 338, 2002

The federal government conducted EMF research as a part of a $45-million research program managed by the NIEHS. This program, known as the EMF RAPID (Research and Public Information Dissemination), submitted its final report to the U.S. Congress on June 15, 1999. The report concluded that:

- "The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak."[10]

- "The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard."[11]

- "The NIEHS suggests that the level and strength of evidence supporting ELF-EMF exposure as a human health hazard are insufficient to warrant aggressive regulatory actions; thus, we do not recommend actions such as stringent standards on electric appliances and a national program to bury all transmission and distribution lines. Instead, the evidence suggests passive measures such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. NIEHS suggests that the power industry continue its current practice of siting power lines to reduce exposures and continue to explore ways to reduce the creation of magnetic fields around transmission and distribution lines without creating new hazards."[12]

In 2001, Britain's NRPB arrived at a similar conclusion:

> "After a wide-ranging and thorough review of scientific research, an independent Advisory Group to the Board of NRPB has concluded that the power frequency electromagnetic fields that exist in the vast majority of homes are not a cause of cancer in general. However, some epidemiological studies do indicate a possible small risk of childhood leukemia associated with exposures to unusually high levels of power frequency magnetic fields."[13]

In 2002, three scientists for CDHS concluded:

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10 National Institute of Environmental Health Sciences, NIEHS Report on Health Effects from Exposures to Power-Frequency Electric and Magnetic Fields, p. ii, NIH Publication No. 99-4493, 1999

11 *ibid.*, p. iii

12 *ibid.*, p. 37 - 38

13 NRPB, NRPB Advisory Group on Non-ionizing Radiation Power Frequency Electromagnetic Fields and the Risk of Cancer, NRPB Press Release May 2001

> "To one degree or another, all three of the [C]DHS scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage.
>
> They [CDHS] strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.
>
> They [CDHS] strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
>
> To one degree or another they [CDHS] are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's disease, depression, or symptoms attributed by some to a sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide, or
>
> For adult leukemia, two of the scientists are 'close to the dividing line between believing or not believing' and one was 'prone to believe' that EMFs cause some degree of increased risk."[14]

Also in 2002, the World Health Organization's (WHO) IARC concluded:

> "ELF magnetic fields are possibly carcinogenic to humans"[15], based on consistent statistical associations of high-level residential magnetic fields with a doubling of risk of childhood leukemia...Children who are exposed to residential ELF magnetic fields less than 0.4 microTesla (4.0 milliGauss) have no increased risk for leukemia…. In contrast, "no consistent relationship has been seen in studies of childhood brain tumors or cancers at other sites and residential ELF electric and magnetic fields."[16]

In June of 2007, the WHO issued a report on their multi-year investigation of EMF and the possible health effects. After reviewing scientific data from numerous EMF and human health studies, they concluded:

> "Scientific evidence suggesting that everyday, chronic low-intensity (above 0.3-0.4 μT [3-4 mG]) power-frequency magnetic

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14 CDHS, An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances, p. 3, 2002

15 IARC, Monographs, Part I, Vol. 80, p. 338

16 *ibid*., p. 332 - 334

field exposure poses a health risk is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukaemia."[17]

"In addition, virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status. Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern."[18]

"A number of other diseases have been investigated for possible association with ELF magnetic field exposure. These include cancers in both children and adults, depression, suicide, reproductive dysfunction, developmental disorders, immunological modifications and neurological disease. The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukaemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease"[19]

"Furthermore, given both the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukaemia, and the limited impact on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus the costs of precautionary measures should be very low."[20]

III. APPLICATION OF THE CPUC'S "NO-COST AND LOW-COST" EMF POLICY TO THIS PROJECT

Recognizing the scientific uncertainty over the connection between EMF exposures and health effects, the CPUC adopted a policy that addresses public concern over EMF with a combination of education, information, and precaution-based approaches. Specifically, Decision 93-11-013 established a precautionary based "no-cost and low-cost" EMF policy for California's regulated electric utilities based on recognition that scientific research had not demonstrated that

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17 WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, p. 11 - 12, 2007
18 *ibid*., p. 12
19 *ibid*., p. 12
20 *ibid*., p. 13

exposures to EMF cause health hazards and that it was inappropriate to set numeric standards that would limit exposure.

In 2006, the CPUC completed its review and update of its EMF Policy in Decision 06-01-042. This decision reaffirmed the finding that state and federal public health regulatory agencies have not established a direct link between exposure to EMF and human health effects,[21] and the policy direction that (1) use of numeric exposure limits was not appropriate in setting utility design guidelines to address EMF,[22] and (2) existing "no-cost and low-cost" precautionary-based EMF policy should be continued for proposed electrical facilities. The decision also reaffirmed that EMF concerns brought up during Certificate of Public Convenience and Necessity (CPCN) and Permit to Construct (PTC) proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the CPUC's "no-cost and low-cost" policies.[23]

The decision directed regulated utilities to hold a workshop to develop standard approaches for EMF Design Guidelines and such a workshop was held on February 21, 2006. Consistent design guidelines have been developed that describe the routine magnetic field reduction measures that regulated California electric utilities consider for new and upgraded transmission line and transmission substation projects. SCE filed its revised EMF Design Guidelines with the CPUC on July 26, 2006.

"No-cost and low-cost" measures to reduce magnetic fields would be implemented for this project in accordance with SCE's EMF Design Guidelines. In summary, the process of

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21 CPUC Decision 06-01-042, Conclusion of Law No. 5, mimeo. p. 19 ("As discussed in the rulemaking, a direct link between exposure to EMF and human health effects has yet to be proven despite numerous studies including a study ordered by this Commission and conducted by DHS.").

22 CPUC Decision 06-01-042, mimeo. p. 17 - 18 ("Furthermore, we do not request that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure, in revised design guidelines or apply mitigation measures to reconfigurations or relocations of less than 2,000 feet, the distance under which exemptions apply under GO 131-D. Non-routine mitigation measures should only be considered under unique circumstances.").

23 CPUC Decision 06-01-042, Conclusion of Law No. 2, ("EMF concerns in future CPCN and PTC proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the Commission's low-cost/no-cost policies.").

evaluating "no-cost and low-cost" magnetic field reduction measures and prioritizing within and between land usage classes considers the following:

1. SCE's priority in the design of any electrical facility is public and employee safety. Without exception, design and construction of an electric power system must comply with all applicable federal, state, and local regulations, applicable safety codes, and each electric utility's construction standards. Furthermore, transmission and subtransmission lines and substations must be constructed so that they can operate reliably at their design capacity. Their design must be compatible with other facilities in the area and the cost to operate and maintain the facilities must be reasonable.

2. As a supplement to Step 1, SCE follows the CPUC's direction to undertake "no-cost and low-cost" magnetic field reduction measures for new and upgraded electrical facilities. Any proposed "no-cost and low-cost" magnetic field measures, must, however, meet the requirements described in Step 1 above. The CPUC defines "no-cost and low-cost" measures as follows:

   - Low-cost measures, in aggregate, should:
     - Cost in the range of 4 percent of the total project cost.
     - Result in magnetic field reductions of "15% or greater at the utility ROW [right-of-way]…"[24]

   The CPUC Decision stated,

   > "We direct the utilities to use 4 percent as a benchmark in developing their EMF mitigation guidelines. We will not establish 4 percent as an absolute cap at this time because we do not want to arbitrarily eliminate a potential measure that might be available but costs

[24] CPUC Decision 06-01-042, p. 10

more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent."[25]

3. The CPUC provided further policy direction in Decision 06-01-042, stating that, "[a]lthough equal mitigation for an entire class is a desirable goal, we will not limit the spending of EMF mitigation to zero on the basis that not all class members can benefit."[26] While Decision 06-01-042 directs the utilities to favor schools, day-care facilities and hospitals over residential areas when applying low-cost magnetic field reduction measures, prioritization within a class can be difficult on a project case-by-case basis because schools, day-care facilities, and hospitals are often integrated into residential areas, and many licensed day-care facilities are housed in private homes, and can be easily moved from one location to another. Therefore, it may be practical for public schools, licensed day-care centers, hospitals, and residential land uses to be grouped together to receive highest prioritization for low-cost magnetic field reduction measures. Commercial and industrial areas may be grouped as a second priority group, followed by recreational and agricultural areas as the third group. Low-cost magnetic field reduction measures will not be considered for undeveloped land, such as open space, state and national parks, and Bureau of Land Management and U.S. Forest Service lands. When spending for low-cost measures would otherwise disallow equitable magnetic field reduction for all areas within a single land-use class, prioritization can be achieved by considering location and/or density of permanently occupied structures on lands adjacent to the projects, as appropriate.

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25 CPUC Decision 93-11-013, § 3.3.2, p.10.
26 CPUC Decision 06-01-042, p. 10

This FMP contains descriptions of various magnetic field models and the calculated results of magnetic field levels based on those models. These calculated results are provided only for purposes of identifying the relative differences in magnetic field levels among various transmission or subtransmission line design alternatives under a specific set of modeling assumptions and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the project is constructed. This is because magnetic field levels depend upon a variety of variables, including load growth, customer electricity usage, and other factors beyond SCE's control. The CPUC affirmed this in D. 06-01-042 stating:

> "Our [CPUC] review of the modeling methodology provided in the utility [EMF] design guidelines indicates that it accomplishes its purpose, which is to measure the relative differences between alternative mitigation measures. Thus, the modeling indicates relative differences in magnetic field reductions between different transmission line construction methods, but does not measure actual environmental magnetic fields."[27]

IV. PROJECT DESCRIPTION

Tulare County is one of the fastest growing regions in California. This increased growth has resulted in an increased demand for electricity. SCE has determined that the existing transmission lines, which deliver electricity to Rector Substation located southeast of Visalia, are operating at or near their limits and will be unable to deliver sufficient electricity to safely and reliably serve this increased demand. As a result, SCE is proposing to construct the San Joaquin Cross Valley Loop Project, which consists of the construction of a new 19 mile double-circuit 220 kV transmission line. This line would connect to an existing 220 kV transmission line, which would allow SCE to deliver additional power from SCE's Big Creek hydroelectric facilities in the Sierra Nevada Mountains into Rector Substation.

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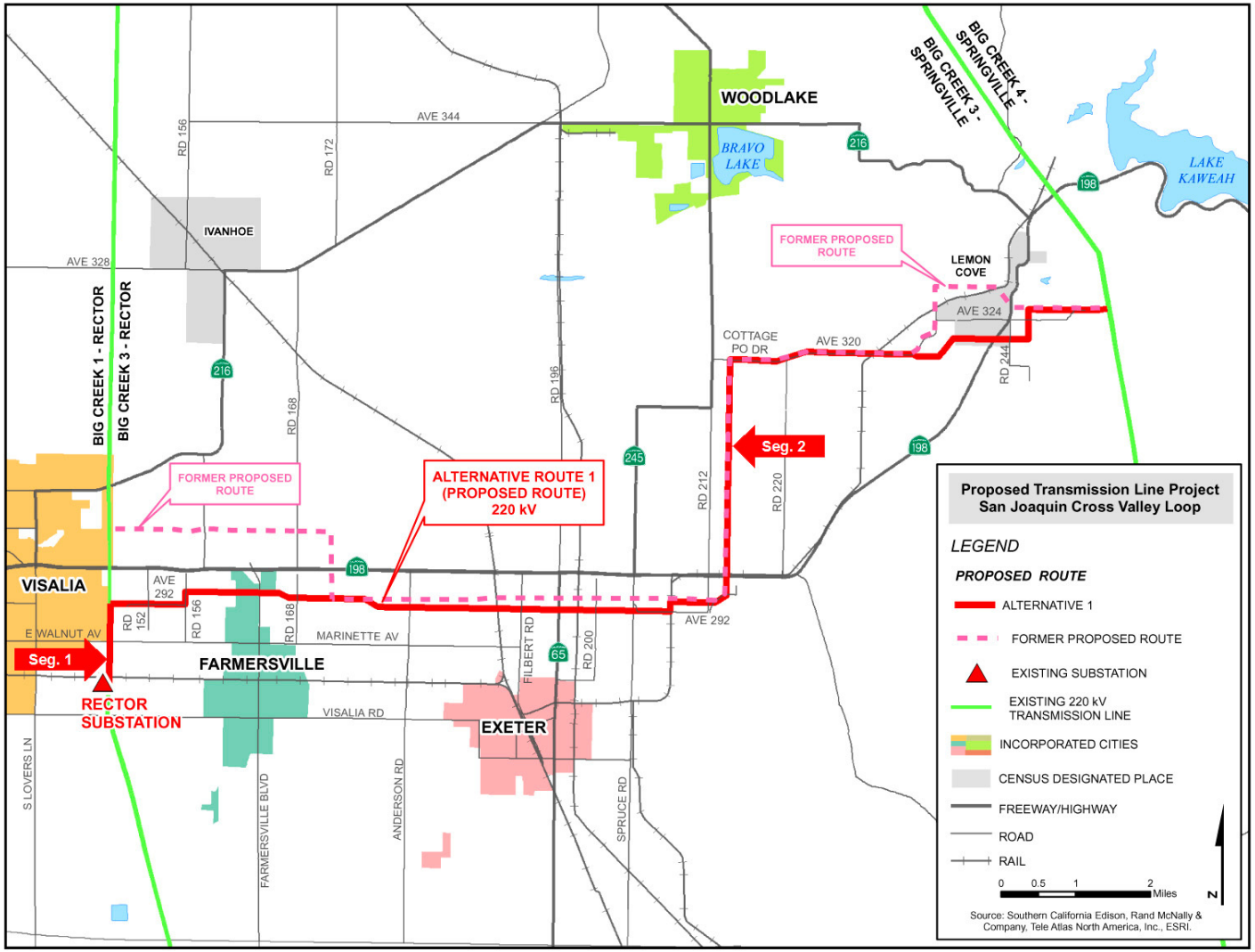
[27] CPUC Decision 06-01-042, p. 11

The proposed transmission line route (Proposed Route) is approximately 19 miles long. The Proposed Route would begin at Rector Substation and proceed north for one mile within SCE's existing right-of-way. SCE proposes to replace two existing single-circuit 220 kV transmission lines, currently side by side in the right-of-way, with one double-circuit 220 kV transmission line. This would create sufficient space in the right-of-way to accommodate construction of the first mile of the new double-circuit 220 kV transmission line (See Figure 2 on page 14). The remaining 18 miles of the proposed transmission line would be constructed within a new 100-foot wide right-of-way to be acquired by SCE and would run east until the line intersects with the Big Creek 3 – Springville 220 kV transmission line located east of Lemon Cove and Highway 198 (See Figure 4 on page 17).

Figure 1 below shows the overall project areas.

Figure 1. Project Area and Proposed Routes[28]



[28] The "Alternative 1" route in this figure is the Proposed Route.

Currently, there are no schools along the Proposed Route as shown on Figure 1 above. The Proposed Route runs adjacent to residential areas for the first 1.1 miles and adjacent to few scattered homes in mainly agricultural areas for the remainder of the route.

V. EVALUATION OF "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION MEASURES

For the purpose of evaluating "no-cost and low-cost" magnetic field reduction design options, the Proposed Project is divided into three parts:

1. Part 1: 220 kV Transmission Line Route Segment 1 (Segment 1)
2. Part 2:: 220 kV Transmission Line Route Segment 2 (Segment 2)
3. Part 3: Rector Substation Modifications

Following magnetic field models and the calculated results of magnetic field levels are intended only for purposes of identifying the relative differences in magnetic field levels among various transmission line design alternatives under a specific set of modeling assumptions (see §VII-Appendix A for more detailed information about the calculation assumptions and loading conditions) and determining whether particular transmission design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location when the project is constructed.

Part 1: 220 kV Transmission Line Route Segment 1 (Segment 1)

The Segment 1 consists of 1) replacing approximately 1.1 miles of two sets of single circuit 220 kV transmission towers with a single set of double circuit structures immediately north of SCE's existing Rector Substation and 2) constructing the first 1.1 miles of a new double circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV

transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line and the new Rector-Springville 220 kV transmission line.

Figure 2 below shows the existing vs. proposed 220 kV transmission designs (Proposed 220 kV Design) for Segment 1. Typical tower dimensions are shown on § 0 Appendix B.

Figure 2. Existing vs. Proposed 220 kV Designs for Segment 1

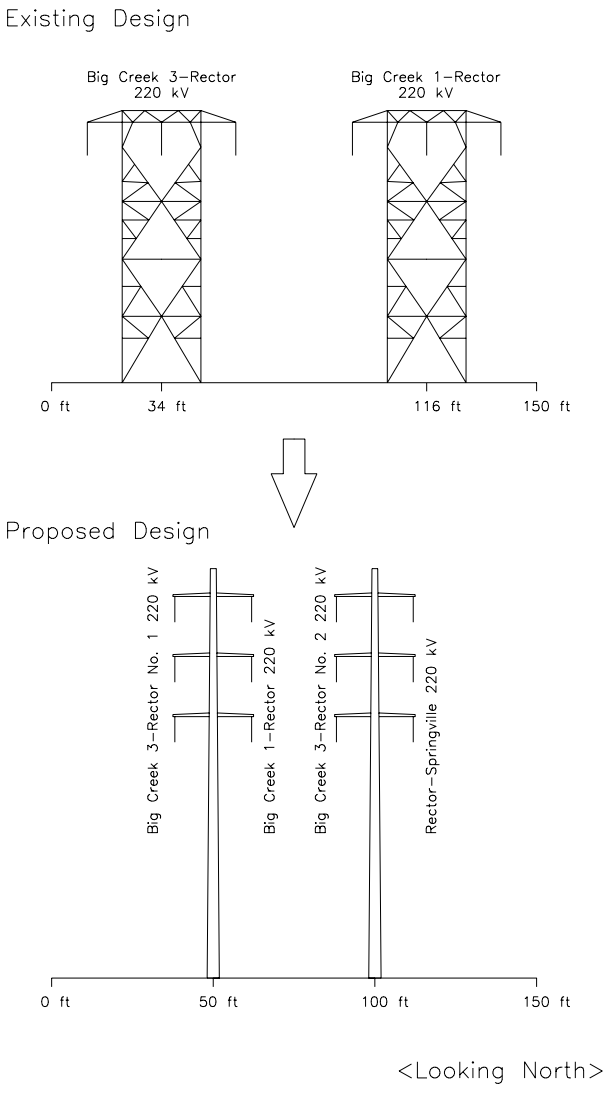


Figure 3. A Design Comparison of Calculated Magnetic Field Levels[29] for Segment 1

(Existing Design vs. Proposed 220 kV Design)

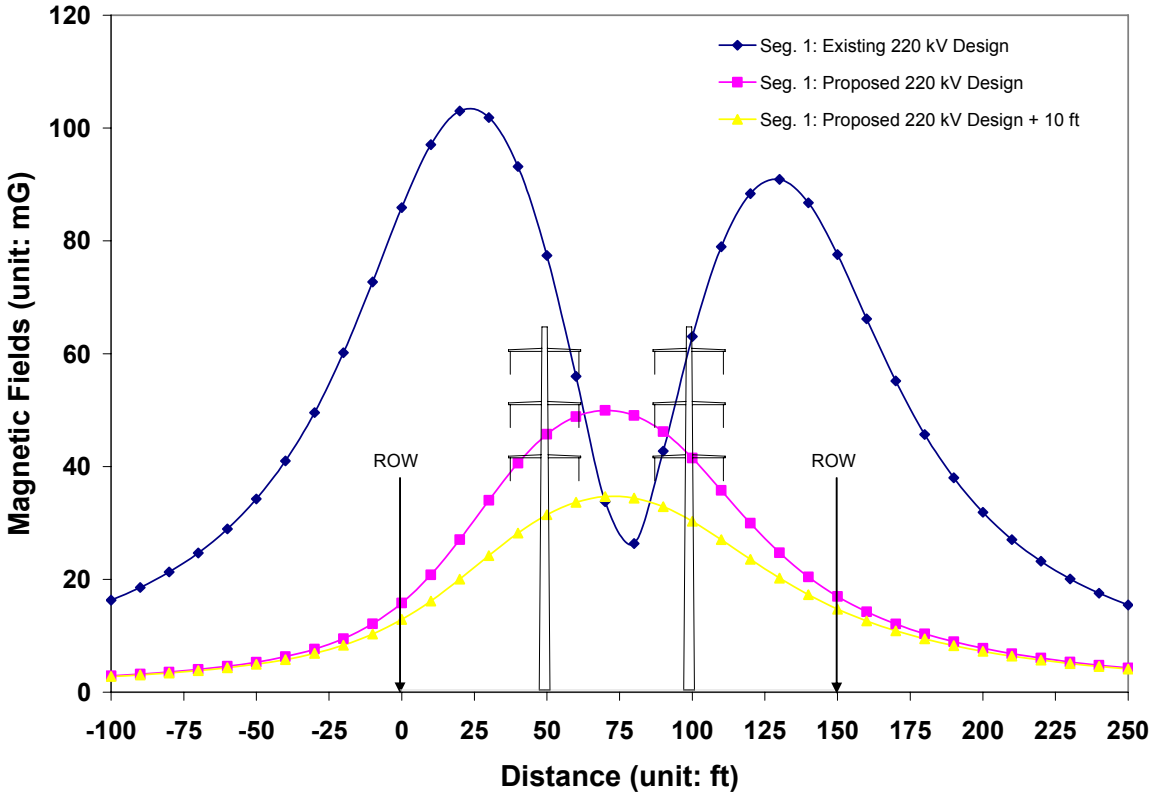


Table 1. A Comparison of Calculated Magnetic Fields[30] at Edges of ROW for Segment 1				
Design Options	Left ROW (mG)	% Reduction	Right ROW (mG)	% Reduction
Seg. 1: Existing 220 kV Design	85.9	Base	77.6	Base
Seg. 1: Proposed 220 kV Design	15.8	81.6	17.0	78.1
Seg. 1: Proposed 220 kV Design + 10 ft	12.9	18.4	14.7	13.5

[29] This graph depicts calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[30] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

As Figure 3 and Table 1 illustrate above that Proposed 220 kV Design (with an added phasing option for reducing magnetic fields) would bring significantly more than 15% magnetic field reduction at edges of ROW compared to the Existing 220 kV Design. Furthermore, using 10 ft taller poles in addition to the Proposed 220 kV Design would meet the additional 15% magnetic field reduction requirement (on average) at edges of ROW. Therefore, using 10 ft taller would be applied for homes immediately adjacent to the Segment 1 as a "low-cost" magnetic field reduction measures.

Part 2: 220 kV Transmission Line Route Segment 2 (Segment 2)

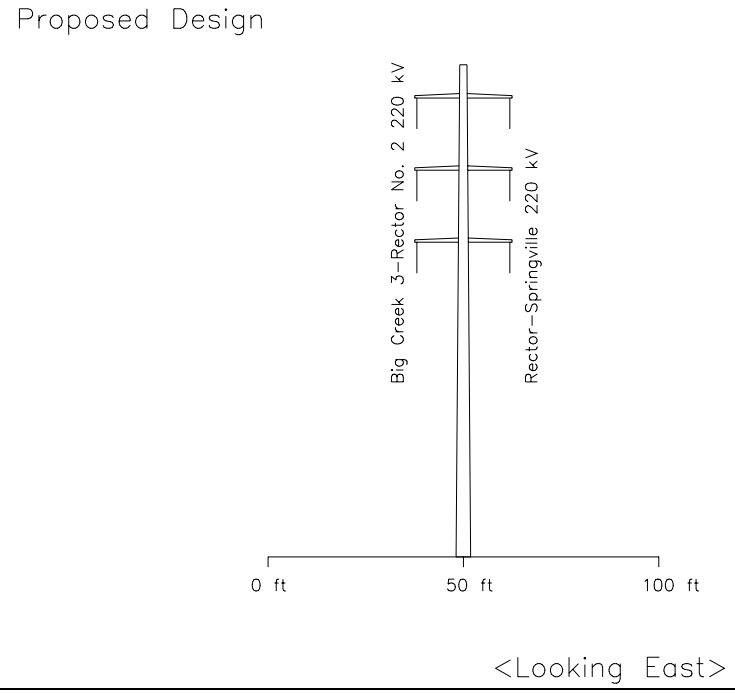
The Segment 2 consists of constructing the remaining 18 mile-long, a double-circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line and the new Rector-Springville 220 kV transmission line.

At mile 1.1 (approximately 1.1 mile north from Rector Substation), the new double circuit 220 kV transmission line would be directed east to parallel Avenue 292 to Road 156 for approximately 1 mile. At Road 156, the new double circuit 220 kV transmission line would be directed north for approximately 0.1 miles, and then would turn in an easterly direction for approximately 6.5 miles. At Mile 8.8, the new double circuit 220 kV transmission line would turn north at the former Visalia Electric Railroad bed. At Mile 8.9, the new double circuit 220 kV transmission line would turn east for approximately 0.7 miles to the base of Badger Hill. At the base of Badger Hill, the new double circuit 220 kV transmission line would turn north for approximately 3.2 miles. At Mile 12.9, the new double circuit 220 kV transmission line would turn east to parallels Cottage PO Drive/Avenue 320 until Mile 15.4. At Mile 15.4, the new double circuit 220 kV transmission line would turn southeast for 0.3 miles, and then would turn northeast to parallel an existing SCE 66 kV subtransmission line. At Mile 16.0, the new double circuit 220 kV transmission line would turn east for 1 mile, then north for 0.4 miles, then east

again at for 1.1 miles until it reaches the existing Big Creek 3-Springville 220 kV transmission line at a point approximately 58 miles south of Big Creek Powerhouse No. 3.

Figure 4 below shows the proposed 220 kV transmission designs for Segment 2. Currently, there are no existing transmission lines on this Segment 2. Therefore, the Proposed Design would be a new source of magnetic fields in this segment.

Figure 4. Proposed 220 kV Design for Segment 2



As Figure 5 and Table 2 illustrate below that using 10 ft taller poles in addition to the Proposed 220 kV Design (with an added phasing option for reducing magnetic fields) would meet the 15% magnetic field reduction requirement (on average) at edges of ROW. Therefore, using 10 ft taller would be applied for homes immediately adjacent to the Segment 2 as a "low-cost" magnetic field reduction measures.

Figure 5. A Design Comparison of Calculated Magnetic Field Levels[29] for Segment 2

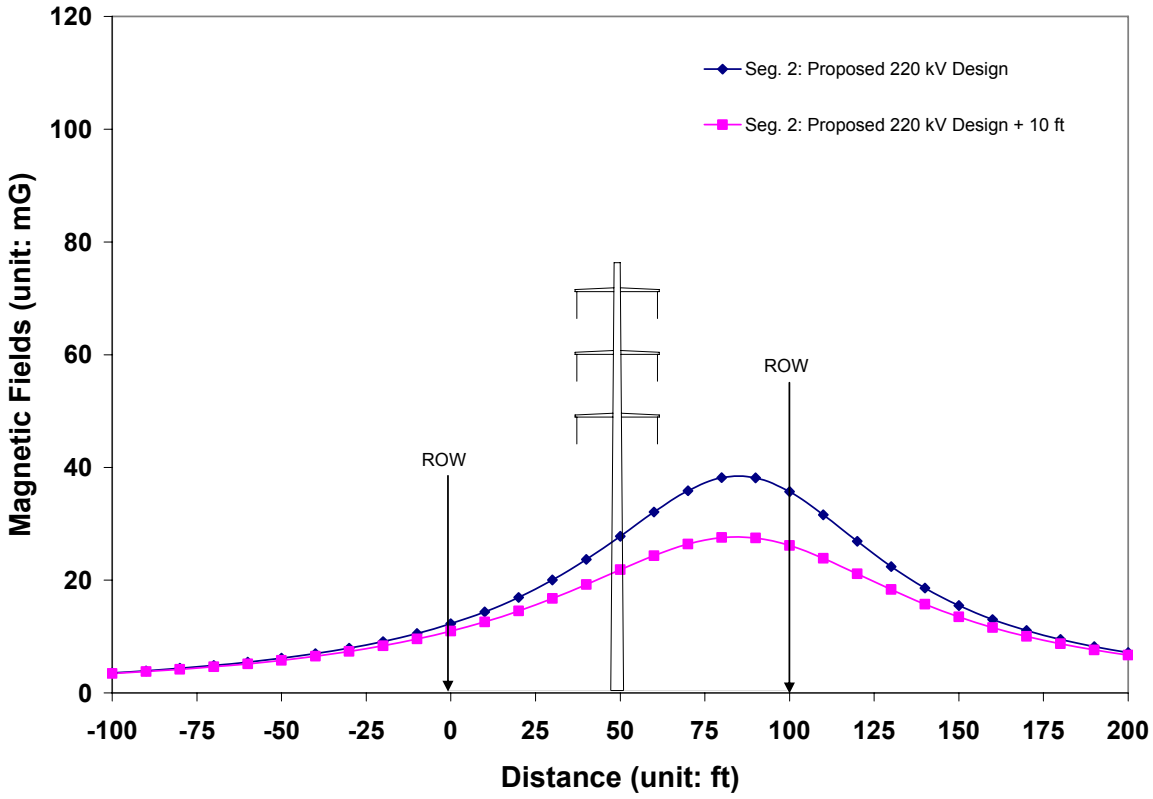


Table 2 A Comparison of Calculated Magnetic Fields[30] at Edges of ROW for Segment 2				
Design Options	Left ROW (mG)	% Reduction	Right ROW (mG)	% Reduction
Seg. 2: Proposed 220 kV Design	12.3	Base	35.7	Base
Seg. 2: Proposed 220 kV Design + 10 ft	11.0	10.6	26.2	26.6

Part 3: Existing Rector Substation Modification

Project work at Rector Substation consists of relocating existing transmission lines to adjacent dead-end bays, equipping two 220 kV transmission line positions on the existing 220 kV switchrack with conductor spans, jumpers, connectors, and support structures to accommodate the connection of the new transmission lines.

The project work at Rector Substation is limited in scope and does not provide significant opportunities to implement magnetic field reduction measures. Furthermore, the nearest home is approximately 400 ft away from the area where modification would be made. Therefore, no "no-cost and low-cost" magnetic field reduction measures are considered.

Table 3 on page 20 summarizes "no-cost and low-cost" magnetic field reduction measures that SCE considered for the Proposed Project:

Table 3. "No-cost and Low-cost" Magnetic Field Reduction Measures for Area A through E

Area No.	Location[31]	Adjacent Land Use[32]	MF Reduction Measures Considered	Estimated Cost to Adopt	Measure(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 1	From Rector Substation to 1.1 mile north.	2, 5	• Phase circuits, • Double-Circuit Pole-head • Taller poles[33]	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 2	From Segment 1 to East of Lemon Cove and Highway 198	2, 5, 6	• Phase circuits, • Double-Circuit Pole-head • Taller poles[33]	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	
Rector Sub	Within the existing substation	2	• None			Limited scope and open space (i.e. home(s) are sufficiently away)

[31] This column shows the major cross streets or substation name as reference points.

[32] Land usage codes are as follows: 1) schools, licensed day-cares, and hospitals, 2) residential, 3) commercial/industrial, 4) recreational, 5) agricultural, and 6) undeveloped land.

[33] Approximately 10 ft taller poles would be places when homes are immediately adjacent to the edges of ROW.

This FMP includes only "no-cost and low-cost" magnetic field reduction measures for SCE's Proposed Routes. SCE's Proponent's Environmental Assessment (PEA) contains various alternative line routes. Comparable "no-cost and low-cost" magnetic field reduction options for the Proposed Route can be applied to all alternative transmission routes.[34]

VI. FINAL RECOMMENDATIONS FOR IMPLEMENTING "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION MEASURES

In accordance with the "EMF Design Guidelines", filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06-01-042, SCE would implement the following "no-cost and low-cost" magnetic field reduction measures for this project. These recommended magnetic field reduction measures would be Proposed Project:

For 220 kV Transmission Line Route (Segment 1):

- Using a "double-circuit" pole-head configuration for the proposed 220 kV transmission lines;
- Using 10 ft taller poles[33] for homes immediately adjacent to the edges of ROW; and
- Implementing phasing arrangement(s) to reduce magnetic field levels at edge(s) of ROW.

  Recommended phasing arrangements are as follows:

  Big Creek 3-Rector No. 1 220 kV : A-C-B (top-to-bottom)

  Big Creek 1-Rector 220 kV : B-C-A (top-to-bottom)

  Big Creek 3-Rector No. 2 220 kV : B-A-C (top-to-bottom)

  Rector-Springville 220 kV : C-A-B (top-to-bottom)

For 220 kV Transmission Line Route (Segment 2):

- Using a "double-circuit" pole-head configuration for the proposed 220 kV transmission lines;

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[34] Depending upon the existing phasing arrangements at the location where proposed transmission lines meet the existing Big Creek 3-Valley 220 kV transmission line, additional work and/or additional towers, such as transposition tower(s), will be required.

- Using 10 ft taller poles[33] for homes immediately adjacent to the edges of ROW; and
- Implementing phasing arrangements to reduce magnetic field levels at edges of ROW. Recommended phasing arrangements are as follows:

  Big Creek 3-Rector No. 2 220 kV : B-A-C (top-to-bottom)

  Rector-Springville 220 kV : C-A-B (top-to-bottom)

For existing Rector Substation:

- None due to limited project scope and adjacent to an open space (i.e. the nearest home is approximately 400 ft away from the area where the modification would be made).

The recommended "no-cost and low-cost" magnetic field reduction measures listed above are based upon preliminary engineering designs, and therefore, they are subject to change during the final engineering designs. If the final engineering designs are different than preliminary engineering designs, SCE, however, would implement comparable "no-cost and low-cost" magnetic field reduction measures. If the final engineering designs are significantly different (in the context of evaluating and implementing CPUC's "no-cost and low-cost" EMF Policy) than the preliminary designs, a supplemental FMP will be prepared.

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction measures equitably and uniformly for the Proposed Subtransmission Line is consistent with the CPUC's EMF Decisions No. 93-11-013 and No. 06-01-042, and also with recommendations made by the U.S. National Institute of Environmental Health Sciences. Furthermore, the recommendations above meet the CPUC approved EMF Design Guidelines as well as all applicable national and state safety standards for new electric facilities.

APPENDIX A: TWO-DIMENTIONAL MODEL ASSUMPTIONS AND YEAR 2010 FORECASTED LOADING CONDITIONS

Magnetic Field Assumptions:

SCE' uses a computer program titled "MFields"[35] to model the magnetic field characteristics of various transmission designs options. All magnetic field models and the calculated results of magnetic field levels presented in this document are intended only for purposes of identifying the relative differences in magnetic field levels among various transmission line design alternatives under a specific set of modeling assumptions and determining whether particular transmission design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the project is constructed.

Typical two-dimensional magnetic field modeling assumptions include:

- All transmission lines would be considered operating at forecasted loads (see Table 4 below) and all conductors are straight and infinitely long;
- Typical 40 ft minimum ground clearance for all 220 kV overhead transmission designs;
- Average sagging for all 220 kV overhead transmission designs (average sagging is approximately equal to 1/3 of sagging plus minimum clearance to the ground);
- All poles and towers are located next to each other;
- Magnetic field strength is calculated at a height of three feet above ground;
- Resultant magnetic fields are being used;
- All line currents are balanced (i.e. neutral or ground currents are not considered);
- Terrain is flat; and
- Dominant power flow directions are being used.

35 Kim, C, MFields for Excel, Version 2.0, 2007.

Table 4. Year 2011 Forecasted Loading Conditions 220 kV Subtransmission Lines		
Circuit Name	**Without Proposed Pro (Amp)**	**With Propos Project (Amp)**
Big Creek 3-Rector No. 1 220 kV[36]	915	652
Big Creek 1-Rector 220 kV	808	604
Big Creek 3-Rector No. 2 220 kV	N/A	715
Rector-Springville 220 kV	N/A	82

Note:

1. The power flow direction is from other substations to Rector Substation.
2. Forecasted loading data is based upon scenarios representing load forecasts for the year 2011. The forecasting data is subject to change depending upon availability of generations, load increase, changes in load demand, and by many other factors.
3. "Without Proposed Project" indicates the year 2011 forecasted loading conditions if the Proposed Project is not operational.

[36] The existing transmission name is "Big Creek 3-Rector 220 kV."

APPENDIX B: TYPICAL 220 KV TOWER DIMENSIONS

Figure 6. Existing 220 kV Tower Dimensions

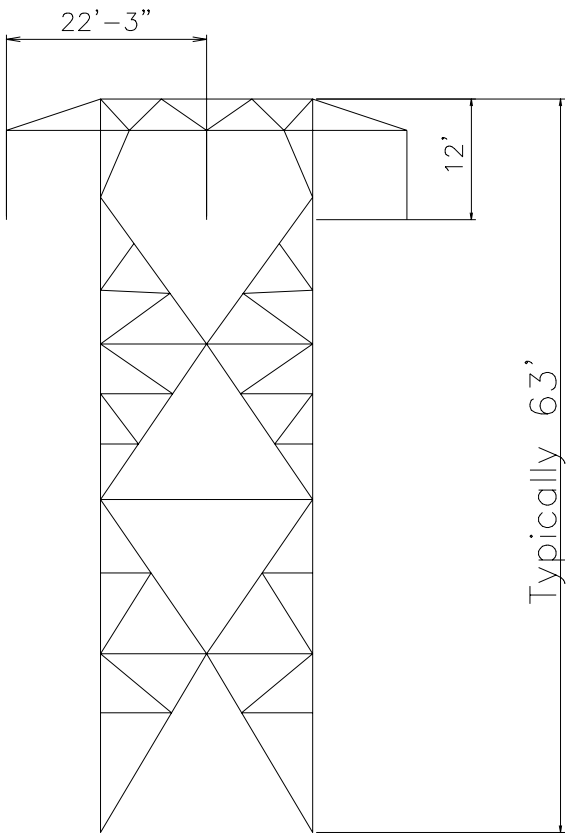
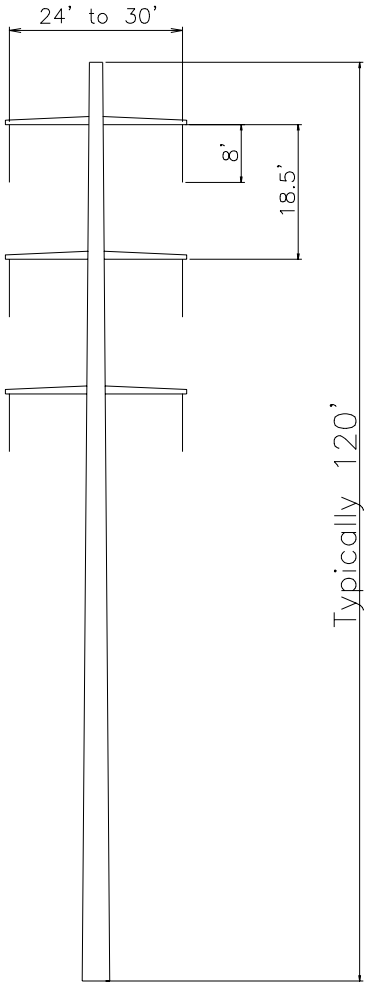


Figure 7. Proposed 220 kV Tower Dimensions[37]



[37] The proposed double-circuit 220 kilovolt transmission line would be constructed on tubular poles and lattice steel towers ranging in height from 120 to 160 feet above the ground. All models for the Proposed Designs are based upon 120 ft tall poles as shown. The dimensions for the lattice steel tower are similar to the tubular pole as shown.

Appendix C

NOTICE OF APPLICATION FOR A

CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR

SAN JOAQUIN CROSS VALLEY LOOP PROJECT

NOTICE OF APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

SAN JOAQUIN CROSS VALLEY LOOP 220 KILOVOLT (KV) TRANSMISSION LINE PROJECT
Date: May 30, 2008

Proposed Project: Southern California Edison Company (SCE) has filed an application with the California Public Utilities Commission (CPUC) for a Certificate of Public Convenience and Necessity (CPCN) for the San Joaquin Cross Valley Loop 220 kV Transmission Line Project (Proposed Project). The Proposed Project is necessary to maintain safe and reliable electric service to customers and to serve the forecasted demand in the cities of Tulare, Handford, Farmersville, Exeter, and Woodlake as well as the surrounding areas of Tulare and Kings Counties (Electrical Needs Area).

The Proposed Project includes the following elements:

- Replacement of approximately 1.1 miles of two sets of existing single-circuit 220 kV transmission line segments with a single double-circuit transmission line segment to be constructed with double-circuit structures on the western side of SCE's existing right-of-way (ROW) immediately north of Rector Substation. This rebuilt section would be on six double-circuit tubular poles, and 1 double-circuit lattice steel tower (LST's), and will require the replacement or modification of two single-circuit lattice towers ranging in height from 120 to 160 feet-tall. This would clear the eastern side of the existing SCE ROW in order to provide a location for the construction of the first 1.1 miles of the new transmission line described immediately below.

- Construct a new, approximately 18.5 mile-long, double-circuit 220 kV transmission line that would loop the existing Big Creek 3-Springville 220 kV transmission line into the 220 kV Rector Substation, creating the new Big Creek 3-Rector No. 2 220 kV transmission line circuit and the new Rector-Springville 220 kV transmission line circuit. The first 1.1 miles of the new double-circuit transmission line would be on the eastern side of SCE's existing ROW adjacent to the new double-circuit 1.1 mile line segment described above. The remaining 17.4 miles of the proposed new line would be located within a new 100 foot wide ROW to be acquired by SCE. This section of the proposed line would be constructed on 96 double-circuit tubular poles, six single-phase tubular poles and 11 double-circuit LST's ranging in height from 120 to 160 feet-tall;

- The proposed 220 kV transmission line would be strung with single conductor 1033 kcmil conductor (approximately 1 1/4" in diameter) with nonspecular finish;

- Installation of electrical equipment and substation supporting structures for the transmission lines, protective relays, and a mechanical and electrical equipment room (MEER) at Rector Substation to accommodate the transmission lines; and

- Removal of wave traps and lines tuners and installation of additional protective relays at Rector Substation, Springville Substation, Vestal Substation, and Big Creek 3 Substation.

Construction is scheduled to begin by the fourth quarter of 2009, or immediately following receipt of all project approvals. The Proposed Project is scheduled to be operational by mid-2012 to ensure that safe and reliable electric service is available to serve customer electrical demand in the Electrical Needs Area.

EMF Compliance: The California Public Utilities Commission (CPUC) requires utilities to employ "no cost" and "low cost" measures to reduce public exposure to electric and magnetic fields (EMF). In accordance with "EMF Design Guidelines" filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06-01-042, SCE would implement the following measure(s) for the Proposed Project:

- Using a "double-circuit" pole-head configuration for the proposed 220 kV transmission lines;
- Using 10 foot taller poles for homes immediately adjacent to the edges of ROW;
- Implementing phasing arrangement(s) to reduce magnetic field levels at edge(s) of ROW.

Environmental Assessment: The CPUC is responsible, under the California Environmental Quality Act (CEQA), for identifying the significant environmental impacts of the Proposed Project and for avoiding or mitigating them if feasible.

SCE has prepared a Proponent's Environmental Assessment (PEA), which includes an analysis of potential environmental impacts created by the construction and operation of the Proposed Project. Impacts from the Proposed Project for all resource categories would be less than significant. Impacts to Biological and Cultural Resources would be less than significant with the implementation of mitigation.

The CPUC will conduct an initial review of the Proposed Project's potential environmental impacts. Depending on the potential impacts, the CPUC will issue a Notice of Intent to Approve a Negative Declaration or Mitigated Negative Declaration (NOI) that the Proposed Project will not result in any significant environmental impacts, or a Notice of Preparation (NOP) of an environmental impact report (EIR). The public may participate in the environmental review by submitting comments on the NOI or NOP and draft EIR, and by participating in any scoping meetings or public meetings that may be conducted.

Formal Protests: Formal protests to the application must comply with Article 1 and Rule 2.6 of the CPUC's Rules of Practice and Procedure (posted on the CPUC's website at www.cpuc.ca.gov). Formal protests must state the facts constituting the grounds for the protest, the effect of the application on the protestant, and the reasons the protestant believes the application, or a part of it, is not justified. If the protest requests a hearing, it must state the facts you would present at a formal evidentiary hearing to support your protest. Any affected party may, within 30 days of the date on this notice, i.e. no later than **June 30, 2008,** protest and request that the CPUC hold hearings on the application.

Letters: If you wish to make your views known without participating formally, you may write to the CPUC at 505 Van Ness Avenue, San Francisco, CA 94102. Your communication will be directed to the Commissioners and the Administrative Law Judge for review, and will be placed in the proceeding's formal Correspondence File.

Notice and CPUC Documents: To be added to the official service list as "Information Only" for service of all CPUC documents in this proceeding, e.g., notice of hearings, rulings, and decisions, contact the Process Office at the CPUC, 505 Van Ness Avenue, San Francisco, CA 94102 or by e-mail at process_office@cpuc.ca.gov.

For assistance, please call the CPUC's Public Advisor in San Francisco at (415)703-2074 (public.advisor@cpuc.ca.gov) or in Los Angeles at (213) 576-7055 (Public.Advisor.LA@cpuc.ca.gov),

To review a copy of SCE's Application, or to request further information, please contact:

William Delain
Tulare Service Center/San Joaquin Valley Service Center
2425 S. Blackstone, Tulare, CA 93274 .

Phone: (559) 685-3213
Fax: (559) 685-3293
William.Delain@sce.com

Newspapers of General Circulation

Fresno Bee

Visalia Times Delta

Foothills Sun-Gazette

Appendix D

ARTICLES OF INCORPORATION

A certified copy of SCE's Restated Articles of Incorporation, effective March 2, 2006, was filed with the Commission on March 14, 2006 with SCE's Application No. 06-03-020. These Articles are incorporated herein by reference.

SCE intends to own 100 percent (100%) of the assets comprising the project, and to recover the cost of those assets in its transmission rates. The assets will be financed with the same ratio of debt and equity by which SCE finances its other transmission assets, in keeping with the capital structure approved for SCE by the Commission. SCE would intend to finance the project through retained earnings, available case, and debt financing as necessary. A copy of SCE's proxy statement sent to SCE's shareholders, dated March 14, 2008, was sent to the Director of the Energy Division on March 24, 2008, in compliance with Ordering Paragraph No. 1 of Decision No. 88-01-063, Condition No. 5d.

Appendix E

FINANCIAL STATEMENT FOR

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

SOUTHERN CALIFORNIA EDISON COMPANY

BALANCE SHEET

MARCH 31, 2008

A S S E T S

(Unaudited)

(Millions of Dollars)

UTILITY PLANT:	
Utility plant, at original cost	$20,953
Less - Accumulated depreciation and decommissioning	(5,306)
	15,647
Construction work in progress	1,820
Nuclear fuel, at amortized cost	231
	17,698
OTHER PROPERTY AND INVESTMENTS:	
Nonutility property - less accumulated provision for depreciation of $718	989
Nuclear decommissioning trusts	3,195
Other Investments	79
	4,263
CURRENT ASSETS:	
Cash and equivalents	282
Short-term investments	1
Margin and collateral deposits	36
Receivables, including unbilled revenues, less reserves of $34 for uncollectible accounts	727
Accrued unbilled revenue	342
Inventory	274
Accumulated deferred income taxes - net	101
Derivative assets	164
Regulatory assets	128
Other current assets	215
	2,270
DEFERRED CHARGES:	
Regulatory assets	2,726
Derivative assets	44
Other long-term assets	633
	3,403
	$27,634

SOUTHERN CALIFORNIA EDISON COMPANY

BALANCE SHEET

MARCH 31, 2008

CAPITALIZATION AND LIABILITIES

(Unaudited)

(Millions of Dollars)

CAPITALIZATION:	
Common stock	$2,168
Additional paid-in capital	518
Accumulated other comprehensive loss	(16)
Retained Earnings	3,604
Common shareholder's equity	6,274
Preferred and preference stock not subject to redemption requirements	920
Long-term debt	5,316
	12,510
CURRENT LIABILITIES:	
Short-term debt	400
Long-term debt due within one year	150
Accounts payable	717
Accrued taxes	79
Accrued interest	119
Counterparty collateral	48
Customer deposits	221
Book overdrafts	182
Derivative liabilities	36
Regulatory liabilities	1,201
Other current liabilities	526
	3,679
DEFERRED CREDITS:	
Accumulated deferred income taxes - net	2,529
Accumulated deferred investment tax credits	103
Customer advances	150
Derivative liabilities	14
Power purchase contracts	22
Accumulated provision for pensions and benefits	823
Asset retirement obligations	2,907
Regulatory liabilities	3,256
Other deferred credits and other long-term liabilities	1,213
	11,017
Minority interest	428
	$27,634

SOUTHERN CALIFORNIA EDISON COMPANY

STATEMENT OF INCOME

THREE MONTHS ENDED MARCH 31, 2008

(Unaudited)

(Millions of Dollars)

OPERATING REVENUE	$2,349
OPERATING EXPENSES:	
Fuel	350
Purchased power	491
Provisions for regulatory adjustment clauses - net	172
Other operation and maintenance expenses	677
Depreciation, decommissioning and amortization	253
Property and other taxes	62
Gain on sale of assets	(1)
Total operating expenses	2,004
OPERATING INCOME	345
Interest income	5
Other nonoperating income	19
Interest expense - net of amounts capitalized	(97)
Other nonoperating deductions	(12)
INCOME BEFORE INCOME TAX AND MINORITY INTEREST	260
INCOME TAX EXPENSE	81
MINORITY INTEREST	16
NET INCOME	163
DIVIDENDS ON PREFERRED AND PREFERENCE STOCK - NOT SUBJECT TO MANDATORY REDEMPTION	13
NET INCOME AVAILABLE FOR COMMON STOCK	$150

Appendix F

COMPETING ENTITIES AND LIST OF CITIES AND COUNTIES FOR SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

The proposed construction lies entirely within the boundaries of SCE's existing service territory, and as such, it will not compete with any other utility, corporation, or person.

Names of cities and counties within which service will be rendered in the exercise of the requested Certificate.

COUNTIES

Fresno	Kings	Orange	Tuolumne
Imperial	Los Angeles	Riverside	Tulare
Inyo	Madera	San Bernardino	Ventura
Kern	Mono	Santa Barbara	

MUNICIPAL CORPORATIONS

Adelanto	Cudahy	La Habra	Ojai	Santa Monica
Agoura Hills	Culver City	La Habra Heights	Ontario	Santa Paula
Alhambra	Cypress	La Mirada	Orange	Seal Beach
Aliso Viejo	Delano	La Palma	Oxnard	Sierra Madre
Apple Valley	Desert Hot Springs	La Puente	Palm Desert	Signal Hill
Arcadia	Diamond Bar	La Verne	Palm Springs	Simi Valley
Artesia	Downey	Laguna Beach	Palmdale	South El Monte
Avalon	Duarte	Laguna Hills	Palos Verdes Estates	South Gate
Baldwin Park	El Monte	Laguna Niguel	Paramount	South Pasadena
Barstow	El Segundo	Laguna Woods	Perris	Stanton
Beaumont	Exeter	Lake Elsinore	Pico Rivera	Tehachapi
Bell	Farmersville	Lake Forest	Placentia	Temecula
Bell Gardens	Fillmore	Lakewood	Pomona	Temple City
Bellflower	Fontana	Lancaster	Port Hueneme	Thousand Oaks
Beverly Hills	Fountain Valley	Lawndale	Porterville	Torrance
Bishop	Fullerton	Lindsay	Rancho Cucamonga	Tulare
Blythe	Garden Grove	Loma Linda	Rancho Mirage	Tustin
Bradbury	Gardena	Lomita	Rancho Palos Verdes	Twentynine Palms
Brea	Glendora	Long Beach	Rancho Santa Margarita	Upland
Buena Park	Goleta	Los Alamitos	Redlands	Victorville
Calabasas	Grand Terrace	Lynwood	Redondo Beach	Villa Park
California City	Hanford	Malibu	Rialto	Visalia
Calimesa	Hawaiian Gardens	Mammoth Lakes	Ridgecrest	Walnut
Camarillo	Hawthorne	Manhattan Beach	Rolling Hills	West Covina
Canyon Lake	Hemet	Maywood	Rolling Hills Estates	West Hollywood
Carpinteria	Hermosa Beach	McFarland	Rosemead	Westlake Village
Carson	Hesperia	Mission Viejo	San Bernardino	Westminster
Cathedral City	Hidden Hills	Monrovia	San Buenaventura	Whittier
Cerritos	Highland	Montclair	San Dimas	Woodlake
Chino	Huntington Beach	Montebello	San Fernando	Yorba Linda
Chino Hills	Huntington Park	Monterey Park	San Gabriel	Yucaipa
Claremont	Indian Wells	Moorpark	San Jacinto	Yucca Valley
Commerce	Industry	Moreno Valley	San Marino	
Compton	Inglewood	Murrieta	Santa Ana	
Corona	Irvine	Newport Beach	Santa Barbara	
Costa Mesa	Irwindale	Norco	Santa Clarita	
Covina	La Canada Flintridge	Norwalk	Santa Fe Springs	

Appendix G

ANNUAL REVENUE REQUIREMENT

SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT

Because the facilities that comprise the project are electric transmission facilities, the reasonableness of costs and the associated ratemaking are under the exclusive jurisdiction of FERC. The revenue requirement of such costs, if any, is not presently known.

VERIFICATION

I am an officer of the applicant corporation herein, and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing document are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this **29th day of May 2008**, at Rosemead, California.

/s/ Leslie Starck
Leslie Starck
Vice President, Local Public Affairs
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770

CERTIFICATE OF SERVICE

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of the **APPLICATION OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT THE SAN JOAQUIN CROSS VALLEY LOOP TRANSMISSION PROJECT** on the Chief Administrative Law Judge by placing the copy in a sealed envelope and causing such envelope to be delivered by hand or by overnight courier to the offices of the Commission or other addressees.

Executed this **30th day of May, 2008**, at Rosemead, California.

/s/ Meraj Rizvi

Meraj Rizvi
Project Analyst
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
Rosemead, California 91770