BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U-338-E) for a Certificate of Public Convenience and Necessity for the Eldorado-Ivanpah Transmission Project	)))))	Application No. _____ A0905027 (Filed May 28, 2009)

APPLICATION OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT THE ELDORADO-IVANPAH TRANSMISSION PROJECT

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APPLICATION OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT THE ELDORADO-IVANPAH 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 Eldorado-Ivanpah Transmission Project ("EITP").

I.

INTRODUCTION

SCE is proposing to construct EITP in order to access new solar generation near the southern California-Nevada border. EITP would primarily consist of a new substation and transmission line upgrade:

- Construction of a new 220/115kV substation (Ivanpah) to serve as a collector hub for the solar generation projects identified in the Ivanpah Dry Lake Area. The substation will be designed to allow up to four 220/115kV transformer banks (three are initially required to support 115kV level interconnection requests) and

will provide 220kV expandability to support 220kV voltage level generation tie-lines as well as future 220kV network transmission lines (if and when required).

- Install two new 220kV positions at Eldorado Substation to support connection of new transmission lines. Upgrade existing 220kV switchrack and 500kV series capacitor equipment.
- Removal of an existing 220/115kV transformer bank at Eldorado Substation.
- Removal of approximately 35 miles of a portion of the Eldorado leg of the existing Eldorado-Baker-Cool Water-Dunn Siding-Mountain Pass 115kV line (the existing 115kV infrastructure cannot support transmission of greater capacity).
- Construction of a new approximately 35-mile double-circuit 220kV transmission line with bundled 1590 aluminum conductor steel reinforced conductor, including optical ground wire to support a special protection system (SPS). The new double circuit 220kV line would be constructed in mostly existing ROW with some minor rerouting for technical and environmental reasons.
- A new approximately 1-mile portion of the existing Baker-Cool Water-Dunn Siding-Mountain Pass 115kV line connecting to the proposed Ivanpah Substation.
- Second telecommunication route to support WECC redundant telecommunication requirements for an SPS. The route consists of approximately 25-miles of optical ground wire installed on the existing Eldorado-Lugo 500kV line, 5-miles underground fiber optic cable in Hwy 164 and microwave radio from near the town of Nipton to the proposed Ivanpah Substation.

The EITP would provide the electrical facilities necessary to integrate up to 1,400 megawatts (MW) of new solar generation to be developed in the Ivanpah Dry Lake Area by independent power producers.

Approval of EITP by the California Independent System Operator Corporation ("CAISO") will also be obtained under the Standard Large Generator Interconnection Procedures ("LGIP") process. It is anticipated that the CAISO will provide approval of the individual EITP

components by approving the interconnection studies and executing the Large Generator Interconnection Agreement (LGIA) for the generation projects in the CAISO generation interconnection queue that trigger the need for one or more of the EITP components. The interconnection studies for the first four projects in the CAISO interconnection queue that would utilize 477 MW of the total 1,400 MW of the EITP capability are expected to be approved by September 2009, and the associated LGIAs are expected to be executed by December 2009.

Please refer to the Executive Summary chapter of the Proponent's Environmental Assessment (PEA) and Chapter 1.0 for the purpose and need of EITP, Chapter 2.0 of the PEA for a description of the project alternatives, and Chapter 3.0 for a detailed project description.

II.

CONDITIONS ON THE FILING OF THIS APPLICATION

SCE submits this CPCN application with the condition that there must be a clear cost recovery mechanism before the SCE commences construction. This filing is contingent upon a Commission order in this proceeding similar to its orders in D.07-03-012 and D.07-03-045. SCE requests that the Commission explicitly establish that, pursuant to Pub. Util. Code § 399.2.5, SCE can recover through CPUC-jurisdictional rates all prudently incurred costs associated with the EITP incurred by SCE that the FERC does not allow SCE to recover in general transmission rates.[1]

Issuance of such an order by the Commission will provide necessary assurances to enable SCE to proceed with further licensing, engineering, and construction activities for the EITP.

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[1] Specifically, SCE's Transmission Revenue Requirement (TRR) and CAISO's Transmission Access Charge (TAC).

III.

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 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 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	5/28/09
Daily Calendar Notice Appears	6/09
Protests	6/29/09
Replies	7/09/09
Application Found Complete	7/09
SCE Supplemental Direct	7/09
Draft EIR Circulated	2/10
Comments on DEIR	4/10
Prehearing Conference	4/10
Interested Party Testimony Due	4/10
SCE Rebuttal Testimony Due	5/10
Evidentiary Hearings	5/10
Concurrent Opening Briefs Due	6/10
Concurrent Reply Briefs Due	6/10
Final EIR Issued	7/10
Proposed Decision Issued	7/10
Comments on Proposed Decision Due	8/10
Reply Comments Due	8/10
Final Decision Issued	9/10

IV.

DEPOSIT FOR COSTS

Pursuant to Rule 2.5 of the Commission's Rules of Practice and Procedure, SCE sent the filing fee of $75.00 to the CPUC Docket Office on May 27, 2009. Additionally, SCE has complied with Rule 2.5 by sending a deposit in the amount of $105,450 to the Commission's Energy Division on May 11, 2009, to be applied to the costs of the Commission 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).

V.

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 3.1-1
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 (to be provided)	

CPCN APPLICATION FILING REQUIREMENTS			
Requirement	Authority	Testimony or Appendix	PEA
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 I
PEA	G.O. 131-D, IX.A.1.h		Submitted with Application
EMF Field Study	G.O. 131-D, Section X.A	Appendix B	
Notice of Application	G.O. 131-D, XI.A	Appendix C	
Articles of Incorporation (Rule 2.3)	CPUC Information and Criteria List Appendix B, 2.2; Rule 2.2, Public Utilities Code 1004	Appendix D	
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	Appendix 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)	Appendix F	
List identifying the permits required	Rule 3.1(d)		Appendix L
Annual revenue requirement	Rule 3.1(h); Public Utilities Code 1003(d)	Appendix G	

VI.

CONCLUSION

SCE respectfully requests the Commission issue a CPCN for the Eldorado-Ivanpah Transmission Project.

Respectfully submitted,

RICHARD TOM
ANGELA WHATLEY

/s/ Angela Whatley
By: Angela Whatley

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Dated: May 28, 2009

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 **28th day of May 2009**, 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 ELDORADO-IVANPAH 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 **28th day of May, 2009**, at Rosemead, California.

/s/ Andrea Moreno

Andrea Moreno
Project Analyst
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue
Post Office Box 800
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APPENDIX A

Project Plan

ELDORADO IVANPAH TRANSMISSION PROJECT

PROJECT PLAN

1.0 INTRODUCTION

This document is a part of Southern California Edison's Eldorado Ivanpah Transmission Project (EITP) application for a Certificate of Public Convenience and Necessity (CPCN) to the California Public Utilities Commission (CPUC). This document either includes materials required by California Public Utilities (PU) Code Section 1003 or indicates by references to where they can be found in the EITP CPCN application, Proponent's Environmental Assessment (PEA), or elsewhere.

2.0 PROJECT SCOPE

The scope of the EITP, including the preliminary engineering and design information required by PU Code Section 1003 (a), may be found in the Chapter 3.0 of the EITP PEA.

3.0 OBJECTIVES AND GOALS

The objectives of the EITP may be found in Section 1.3 of the EITP PEA. During the EITP execution (final engineering, procurement, and construction) phase, SCE goals include:

- Completing EITP engineering, procurement, and construction activities by the scheduled operating date
- Ensuring sufficient resources are planned and available to perform work
- Managing project budget and providing cost control and oversight
- Complying with applicable design, construction, and safety standards

4.0 PROJECT IMPLEMENTATION PLAN

4.1 Introduction

The EITP will be managed on a Project Management matrix basis. Given the large project scope, cost, long material lead time, and the extended construction period, procurement of major long-lead time materials must be authorized to 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.

4.2 Project Management Team

The Project Manager has the overall responsibility and commensurate authority for successful completion of the project. Responsibilities include: planning, obtaining regulatory approvals, cost, scheduling, execution (final engineering, procurement, and construction), and the overall

quality 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 Manager.

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

The PMT is responsible for the successful implementation of the EITP. 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.

.

4.3 Project Construction Management Plan

The complexities of the EITP may 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 major construction management approaches under consideration are:

1. SCE performs engineering, 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.

5.0 Cost Estimate

The cost estimate required by PU Code Section 1003 (c) may be found in the cost testimony to be provided in support of SCE's CPCN application.

6.0 Cost Control Plan

The EITP will have a project cost control plan. Depending upon which resource(s) is(are) utilized to perform final engineering, procurement, and construction activities 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 SCE construction crews. If utilized, the contractor shall submit for SCE's review and approval its payment request, together with all required supporting documentation, for all work performed in the subject period.

The contract price may only be changed by a Field Change Order or by a Trend approved by the Project Manager. The value of any work covered by a Field Change Order will be determined by one of the following methods:

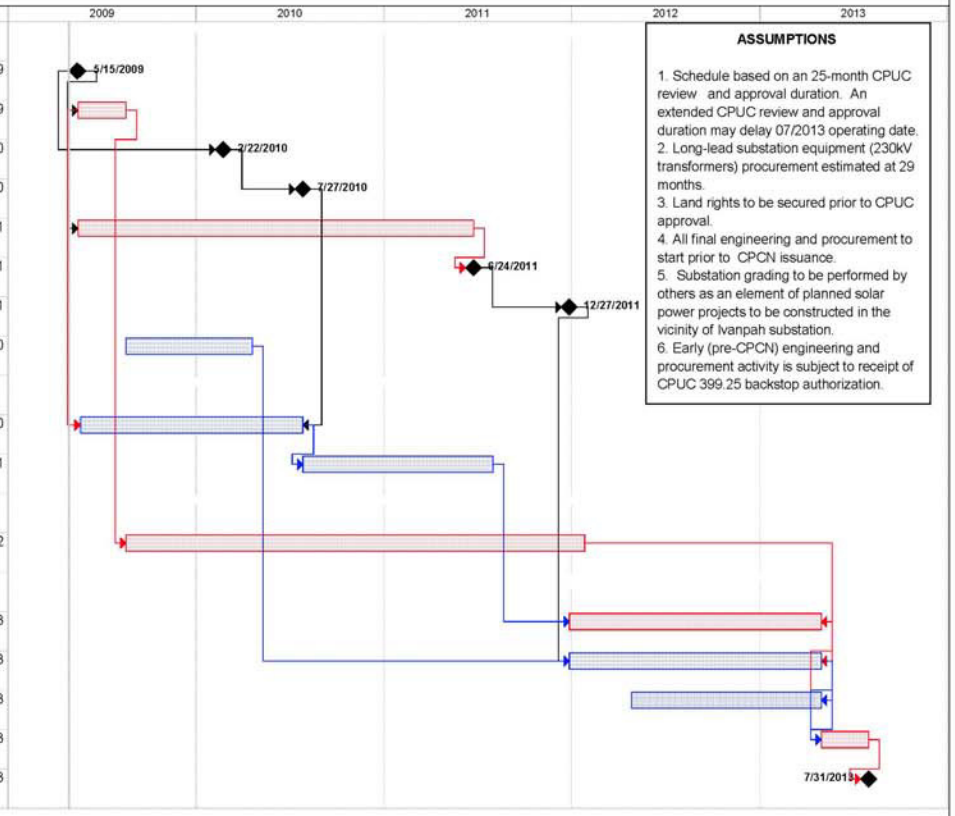
- Where the work involved is covered by unit prices contained in the Contract Documents- apply the unit prices to the quantities of the items.
- By a mutually agreed lump sum itemized and supported by substantiating data.
- Actual Cost of the Work plus a Contractor's fee.

TABLE A-1
PROJECT SCHEDULE

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

Eldorado-Ivanpah Transmission Project
High-Level Project
Schedule

ID	Task Name	Duration	Start	Finish
1	**Filing/CPUC Approval**			
2	CPCN Preparation/Filing			Fri 5/15/09
3	CPUC 399.25 - Advice Letter Approval	3 mons	Mon 5/18/09	Mon 8/17/09
4	Draft EIR			Mon 2/22/10
5	Final EIR			Tue 7/27/10
6	CPUC CPCN Review/Approval	25 mons	Mon 5/18/09	Fri 6/24/11
7	CPUC CPCN Issued			Fri 6/24/11
8	BLM Record of Decision/ROW Grant			Tue 12/27/11
9	**CRE Land Acquisitions**	8 mons	Tue 8/18/09	Tue 4/20/10
12	**Engineering**			
13	**Preliminary Engineering**	14 mons	Fri 5/22/09	Tue 7/27/10
14	**Final Engineering**	12 mons	Wed 7/28/10	Mon 8/1/11
19	**Procurement**			
20	Long-Lead Material Procurement (w/ Advance Approval)	29 mons	Tue 8/18/09	Thu 1/26/12
21	**Construction**			
22	Substation Construction	16 mons	Wed 12/28/11	Tue 4/30/13
23	Transmission/Subtransmission Construction	16 mons	Wed 12/28/11	Tue 4/30/13
24	IT/Telecom Construction	12 mons	Fri 4/27/12	Tue 4/30/13
25	Testing	3 mons	Wed 5/1/13	Wed 7/31/13
26	Online Date		Wed 7/31/13	Wed 7/31/13



ASSUMPTIONS

1. Schedule based on an 25-month CPUC review and approval duration. An extended CPUC review and approval duration may delay 07/2013 operating date.
2. Long-lead substation equipment (230kV transformers) procurement estimated at 29 months.
3. Land rights to be secured prior to CPUC approval.
4. All final engineering and procurement to start prior to CPCN issuance.
5. Substation grading to be performed by others as an element of planned solar power projects to be constructed in the vicinity of Ivanpah substation.
6. Early (pre-CPCN) engineering and procurement activity is subject to receipt of CPUC 399.25 backstop authorization.

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Appendix B

FIELD MANAGEMENT PLAN

Eldorado-Ivanpah Transmission Project

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Figure 7. A Design Comparison of Calculated Magnetic Field Levels 26

I. EXECUTIVE SUMMARY

This document is Southern California Edison Company's (SCE) Field Management Plan (FMP) for the proposed Eldorado-Ivanpah Transmission Project (Proposed Project).

Southern California Edison Company (SCE) proposes to construct a new 220 kilovolt (kV)-115 kV Ivanpah substation (Proposed Substation), and a new double-circuit 220 kV transmission line (Proposed Route) to provide the power transmission capacity needed for the projected solar generation development near the Proposed Substation. The Proposed Route is approximately 35 mile long and connecting Ivanpah substation in San Bernardino, California to the existing Eldorado substation in Boulder City, Nevada. The Proposed Project is planned to be operational 2nd Quarter of 2012.

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 design options for this project, and SCE's proposed plan to apply these design options 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[1] 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 design options that are incorporated into the design of the Proposed Project are:

- Utilizing taller tower heights that exceed the engineering requirements near populated areas;
- Using double-circuit construction for transmission lines on the line route;
- Phasing circuits to reduce the magnetic fields; and

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

- Placing major substation electric equipment (such as transformers) away from the existing substation property lines.

Table 1 on page 6 summarizes "no-cost and low-cost" magnetic field reduction design options that SCE considered for the Proposed Project.

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction design options 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[2], and with applicable national and state safety standards for new electric facilities.

[2] EMF Design Guidelines, August 2006.

Table 1 Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Section 1	From Ivanpah Substation in California to the Primm, Nevada area-Mile Post 28.5	6	• Phasing circuits for field reduction	• No-Cost	• Yes	
Section 2	From Mile Post 28.5 to around Mile Post 27.5 in the Primm, Nevada area	2,3	• Phasing circuits for field reduction • Taller structures near populated areas	• No-Cost • Low-Cost	• Yes • Yes	
Section 3	From the Primm Area at Mile Post 27.5 to Eldorado Substation near Bolder City, Nevada at Mile Post 0	6	• Phasing circuits for field reduction	• No-Cost	• Yes	
Ivanpah Substation	Located approximately 7 miles west of the California/Nevada border	6	• Placing major substation electric equipment (such as transformers) away from the existing substation property lines.	• No-Cost	• Yes	

[3] This column shows the major cross streets, existing subtransmission lines, or substation name as reference points.

[4] 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.

II. BACKGROUND REGARDING EMF AND PUBLIC HEALTH RESEARCH ON EMF

There are many sources of power frequency[5] 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.[6]

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[7], the National Radiation Protection Board (NRPB) 2001[8], the International Commission on non-Ionizing Radiation Protection (ICNIRP) 2001, the California Department of Health Services (CDHS) 2002[9], and the International Agency for Research on Cancer (IARC) 2002[10].

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[5] In U.S., it is 60 Hertz (Hz).

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

[7] 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.

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

[9] 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.

[10] 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."[11]
- "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."[12]
- "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."[13]

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."[14]

In 2002, three scientists for CDHS concluded:

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[11] 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

[12] *ibid.*, p. iii

[13] *ibid.*, p. 37 - 38

[14] 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."[15]

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

> "ELF magnetic fields are possibly carcinogenic to humans"[16], 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."[17]

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 field exposure poses a health risk is based on epidemiological

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[15] 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

[16] IARC, Monographs, Part I, Vol. 80, p. 338

[17] *ibid*., p. 332 - 334

> studies demonstrating a consistent pattern of increased risk for childhood leukaemia."[18]
>
> "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."[19]
>
> "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"[20]
>
> "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."[21]

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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[18] WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, p. 11 - 13, 2007
[19] *ibid*., p. 12
[20] *ibid*., p. 12
[21] *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,[22] and the policy direction that (1) use of numeric exposure limits was not appropriate in setting utility design guidelines to address EMF,[23] 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.[24]

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

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[22] 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.").

[23] 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.").

[24] 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.").

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]…"[25]

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 more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent."[26]

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

[26] CPUC Decision 93-11-013, § 3.3.2, p.10.

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."[27] 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.

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

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

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."[28]

IV. PROJECT DESCRIPTION

Southern California Edison Company (SCE) proposes to construct a new 220 kilovolt (kV)-115 kV substation, and double-circuit 220 kV transmission line (T/L). The substation would be called Ivanpah Substation and would include 220 kV and 115kV switchracks. It would be located in California near Primm, Nevada. The 220 kV T/L would be approximately 35 miles long, and of double-circuit construction. It would be located between the existing El Dorado Substation in Boulder City, Nevada and the proposed new Ivanpah Substation in California. The Eldorado-Ivanpah portion of the existing Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115 kV T/L would be removed and replaced with the proposed 220 kV T/L. Removal of the existing T/L, construction of the new T/L, and construction of the new substation are hereafter referred to as the Proposed Project.

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

The Proposed Project is planned to be operational 2nd Quarter of 2012 to provide the power transmission capacity needed for the projected solar generation development.

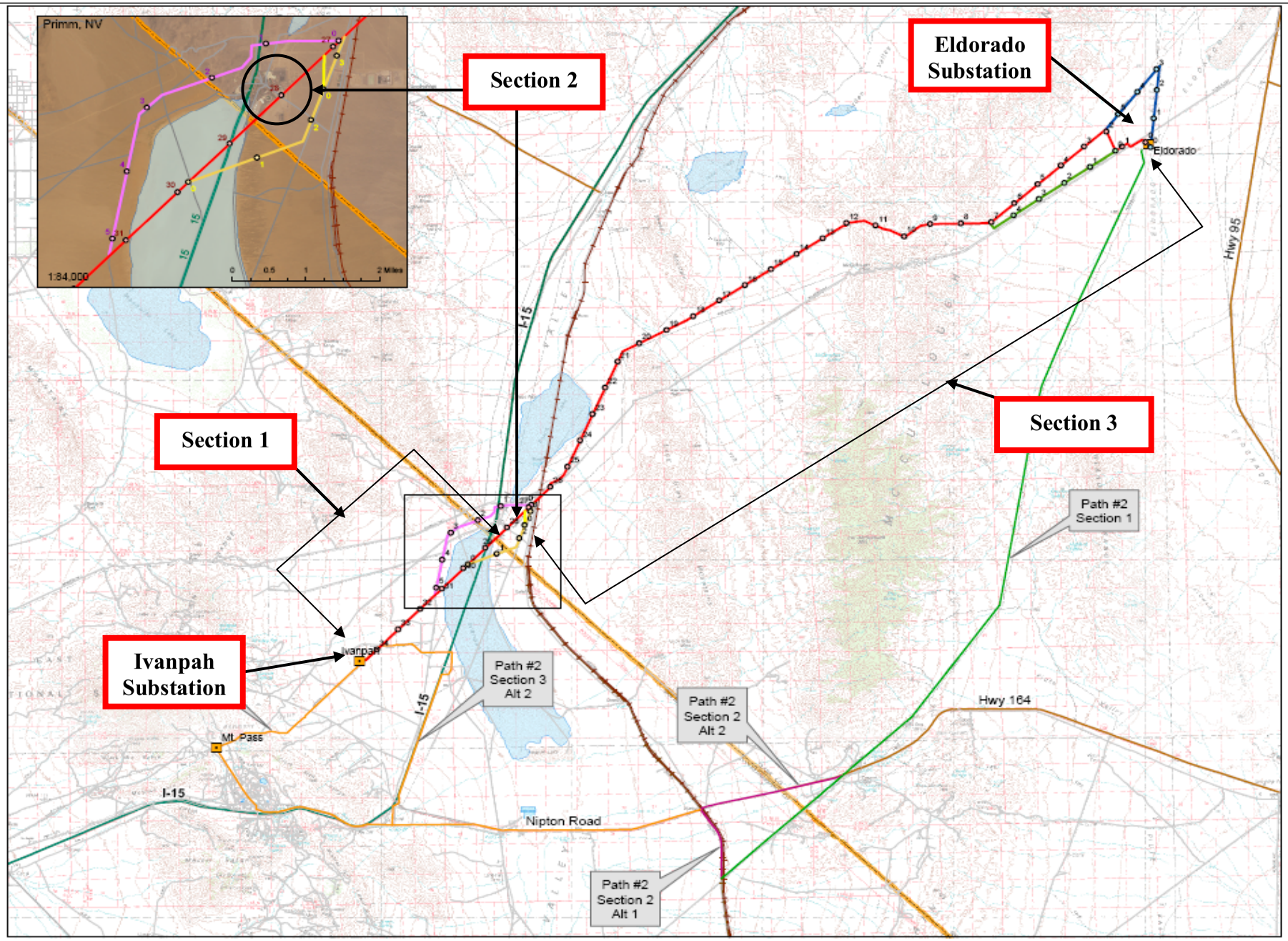
Figure 1 below shows the overall project areas showing the proposed substation site as well as proposed transmission line route (Proposed Route). SCE's proposed substation site is located approximately 7 miles west of the California/Nevada boarder on the northwest side of Interstate 15 in San Bernardino County, California. The Proposed 220 kV Transmission Line Route is approximately 35 mile long and connects to the existing Eldorado substation in Boulder City, Nevada.

The Proposed 220 kV T/L will replace the existing 115 kV subtransmission line within the existing 115 kV right-of-way (ROW), wherever feasible. The proposed 220 kV T/L will be constructed on double-circuit lattice-steel towers (LST's) for most of the route. Where required, single-circuit LST or tubular steel poles (TSP's) and H-Frame TSP's will be used to facilitate the crossing of other transmission lines in the Project area.

For the purpose of analyzing possible magnetic field reduction measures, the Proposed Route will be broken up into three sections as follows:

- Section 1: From Ivanpah Substation in San Bernardino County at Mile Post (MP) 35, California to the Primm, Nevada area at MP 28.5.
- Section 2: Through the Primm, Nevada area from MP 28.5 to MP 27.5, approximately 1 mile in length.
- Section 3: From the Primm Area at MP 27.5 to Eldorado Substation in Boulder City, Nevada at MP 0.

Figure 1. Project Area and Proposed Routes



Currently, there are no schools along the Proposed Route. The Proposed Route runs through undeveloped areas of California, adjacent to residential and business areas in Primm, Nevada and through undeveloped land under the jurisdiction of the Bureau of Land Management and Boulder City, Nevada.

SCE engineers added magnetic field reduction measures early in the design phase for this project. The total project cost will include "low-cost" magnetic field reduction measures in the proposed designs.

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

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

- Part 1: Proposed Eldorado-Ivanpah No. 1 and No. 2 220 kV T/Ls
- Part 2: Proposed Ivanpah 220/115 kV Substation
- Part 3: Project Alternatives

Part 1: Proposed Eldorado-Ivanpah No. 1 & 2 220 kV T/Ls

Please note that 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 Proposed Project is constructed.

Section 1

The typical proposed double-circuit 220 kV overhead transmission design (Proposed Design) used for Section 1 is shown on Figure 2. The proposed 220 kV T/Ls will be constructed on double-circuit structure adjacent to the existing Market Place-Adelanto 500 kV Department of Water and Power (DWP) T/L (not shown in Figure 2).

No-Cost Field Reduction Measures: The proposed design for Section 1 includes the following no-cost field reduction measure:

1. Phasing the proposed 220 kV circuits to reduce the magnetic fields
2. Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: No low-cost field reduction options were investigated for Section 1 because the line route runs through undeveloped land.

Magnetic Field Calculations: Figure 3 and Table 3 show the calculated magnetic field levels for proposed design. These calculations were made using the typical structure height of 137 feet.

Figure 2. Proposed 220 kV T/L Design for Section 1

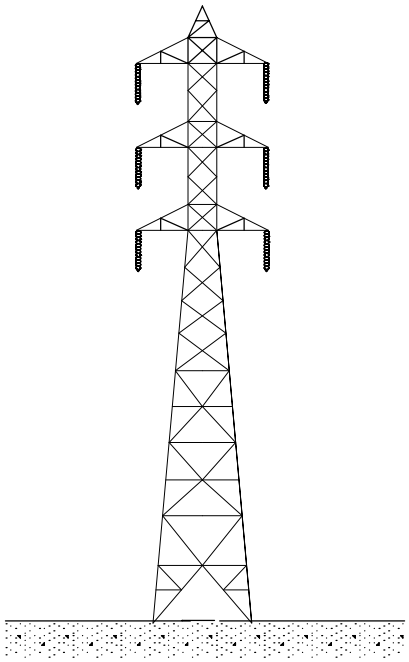


Figure 3. A Design Comparison of Calculated Magnetic Field Levels[30]

For Section 1 (From Ivanpah Substation to the Primm area-Mile Marker 29 – Looking North-East)

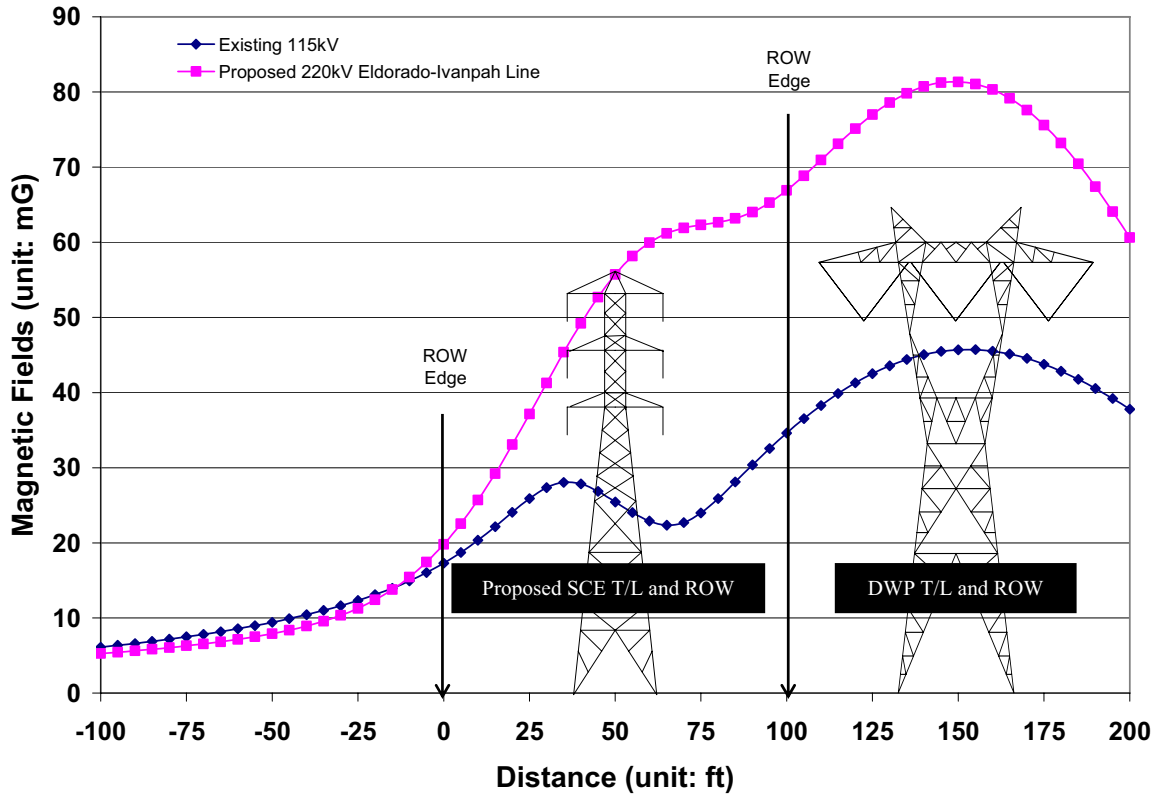


Table 2. A Comparison of Calculated Magnetic Fields[31] for Section 1 (From Ivanpah Substation to the Primm area)				
Design Options	Left Edge of Right of Way (ROW) (mG)	% Reduction	Right Edge of Right of Way (ROW) (mG)	% Reduction
Existing 115 kV T/L Design	17.3	N/A	34.6	N/A
Proposed 220 kV T/L Design	19.8	Increase	66.9	Increase

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

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

Section 2

The typical proposed double-circuit 220 kV T/L overhead transmission design used for Section 2 is shown on Figure 4. The proposed 220 kV T/Ls will be constructed on double-circuit structures.

No-Cost Field Reduction Measures: The proposed design for Section 2 includes the following no-cost field reduction measure:

1. Phasing the proposed 220 kV circuits to reduce the magnetic fields
2. Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: The following low-cost field reduction option was investigated for Section 2:

1. Field Reduction Option 1: Utilize 10 foot taller structures where the Proposed Route runs adjacent to populated areas

Magnetic Field Calculations: Figure 5 and Table 4 show the calculated magnetic field levels for the proposed design. These calculations were made using the typical structure height of 137 feet for the proposed Section 2 towers and using 10 foot taller structures. .

Figure 4. Proposed 220 kV T/L Design for Section 2

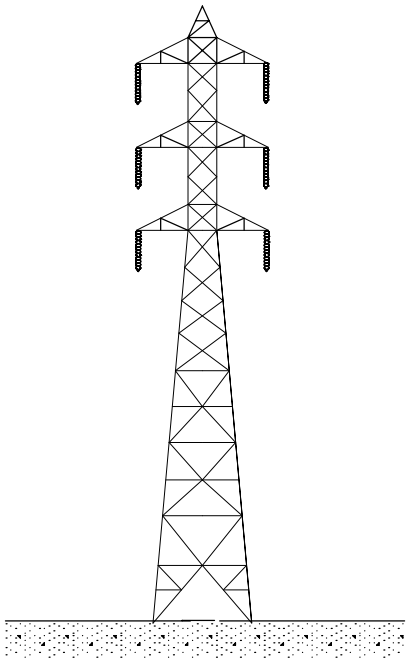


Figure 5. A Design Comparison of Calculated Magnetic Field Levels: [32]

Section 2 (Through the Primm Area-MP 28.5 to MP 27.5 – Looking North-East)

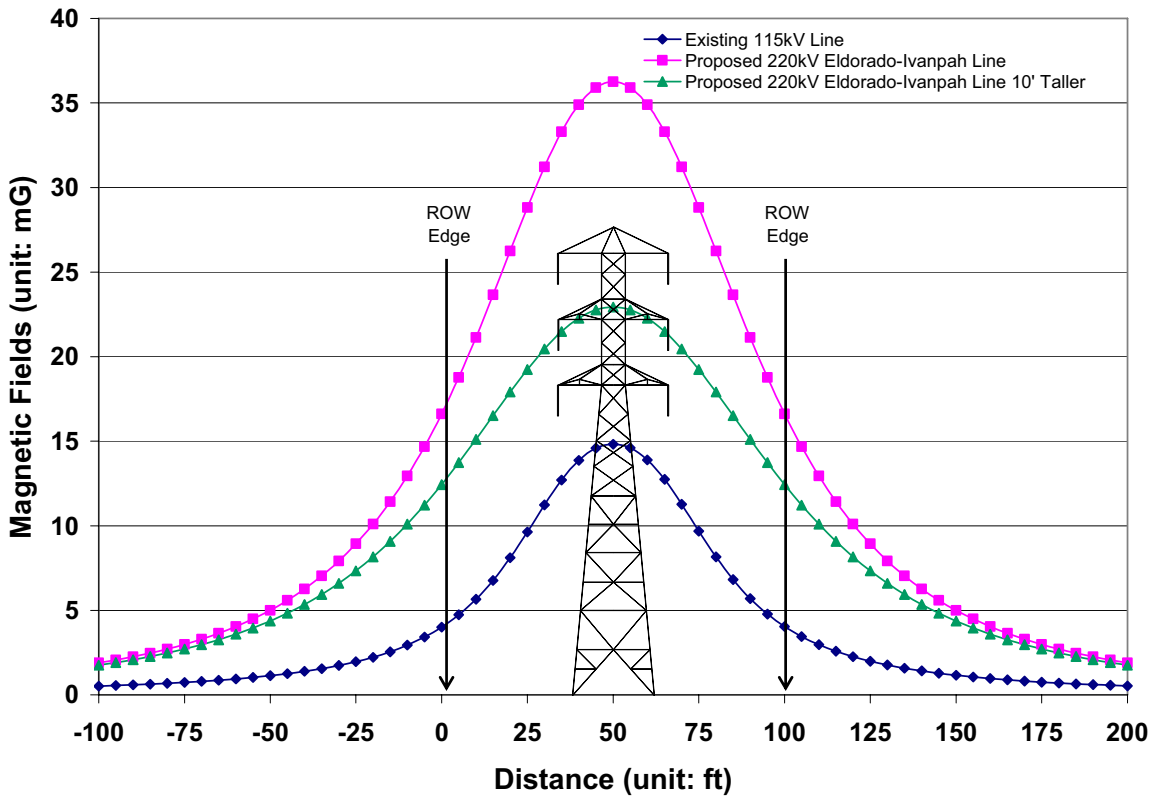


Table 3. A Comparison of Calculated Magnetic Fields[33] for Section 2 (Thru the Primm area)				
Design Options	Left Edge of Right of Way (ROW) (mG)	% Reduction	Right Edge of Right of Way (ROW) (mG)	% Reduction
Existing 115 kV T/L	4	N/A	4	N/A
Proposed 220 kV T/L Design	16.6	Increase	16.6	Increase
Proposed 220 kV T/L + 10 feet	12.4	24.8	12.4	24.8

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

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

Recommendations for Section 2: Field Reduction Option 1 (Ten foot taller structures) results in calculated field reductions greater than 15% at the closest edge of R-O-W. Therefore, this design is recommended to be utilized in areas along Section 2 where there are nearby residences.

Section 3

The typical proposed double-circuit 220 kV overhead T/L design for Section 3 is shown in Figure 6. The proposed 220 kV T/Ls will be constructed on double-circuit structures. A direct current (DC) DWP T/L paralleling the proposed 220 kV T/Ls was not modeled because it does not create 60 Hz magnetic fields. Other third party T/Ls crossing under or near the proposed double-circuit 220 kV T/L for short distances were not modeled.

No-Cost Field Reduction Measures: The proposed design for Section 3 includes the following no-cost field reduction measure:

1. Phasing the proposed 220 kV circuits to reduce the magnetic fields
2. Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: No low-cost field reduction options were investigated for Section 1 because the line route runs through undeveloped land.

Magnetic Field Calculations: Figure 7 and Table 5 show the calculated magnetic field levels for the proposed scenario utilizing typical structure heights of 137 feet.

Figure 6. Proposed 220 kV T/L Design for Section 3

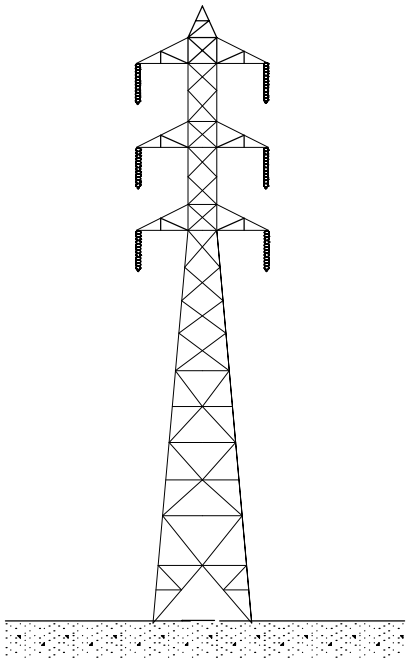


Figure 7. A Design Comparison of Calculated Magnetic Field Levels[34]

For Section 3 (From the Primm Area at MP 27.5- to Eldorado substation at MP 0 – Looking North-East)

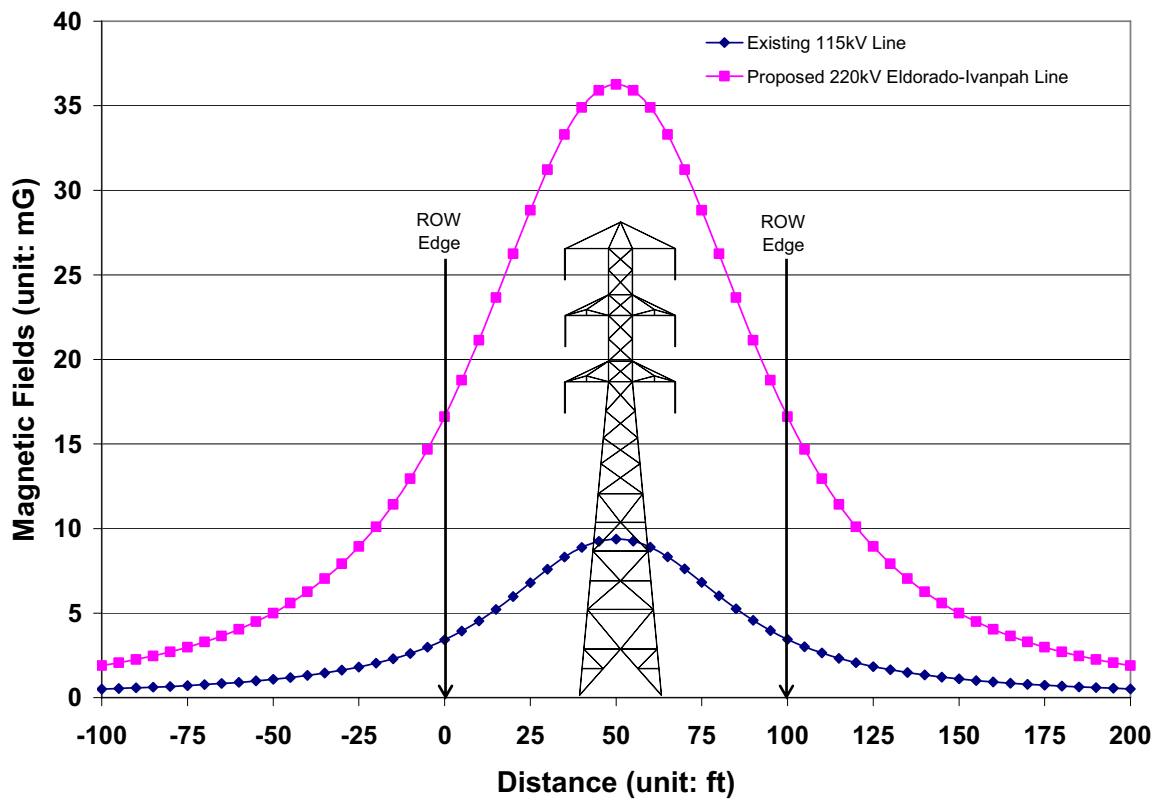


Table 4. A Comparison of Calculated Magnetic Fields[35] for Section 3 (From the Primm area to Eldorado substation)				
Design Options	Left Edge of Right of Way (ROW) (mG))	% Reduction	Right Edge of Right of Way (ROW) (mG)	% Reduction
Existing 115 kV T/L Design	3.4	N/A	3.5	N/A
Proposed 220 kV T/L Design	16.6	Increase	16.6	Increase

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

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

Part 2: Proposed Ivanpah 220/115 kV Substation

Generally, magnetic field values along the substation perimeter are low compared to the substation interior because of the distance from the perimeter to the energized equipment. Normally, the highest magnetic field values around the perimeter of a substation result from overhead power lines and underground duct banks entering and leaving the substation, and are not caused by substation equipment. Therefore, the magnetic field reduction design options generally applicable to a substation project are as follows:

- Site selection for a new substation;
- Setback of substation structures and major substation equipment (such as bus, transformers, and underground cable duct banks, etc.) from perimeter;
- Field reduction for transmission lines and subtransmission lines entering and exiting the substation.

The Substation Checklist, as shown on Table 5, is used for evaluating the no-cost and low-cost design options considered for the substation project, the design options adopted, and reasons that certain design options were not adopted.

Table 5. Substation Checklist for Examining No-cost and Low-cost Magnetic Field Reduction Design Options			
No.	**No-Cost and Low-Cost Magnetic Field Reduction Design Options Evaluated for a Substation Project**	**Design Options Adopted? (Yes/No)**	**Reason(s) if not Adopted**
1	Are 220 kV rated transformer(s) 50 feet from the substation property line?	Yes	
1A	Are 115 kV rated transformer(s) 15 feet from the substation property line?	Yes	
2	Are 220 kV rated switch-racks, capacitor banks & bus 40 feet (or more) from the substation property line?	Yes	
2A	Are 115 kV rated switch-racks, capacitor banks & bus 8 feet (or more) from the substation property line?	Yes	
3	Are 115 kV rated transfer & operating buses configured with the transfer bus facing the nearest property line?	Yes	

Part 3: Project Alternatives

This FMP includes only "no-cost and low-cost" magnetic field reduction design options for SCE's Proposed Routes and Proposed Substation site. SCE's Proponent's Environmental Assessment (PEA) contains various alternative line routes and substation site(s). Comparable "no-cost and low-cost" magnetic field reduction options for the Proposed Project can be applied to all alternative transmission routes and substation sites. A revised FMP will be prepared should an alternative route be approved.

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

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 design options for Proposed Project:

For Proposed Eldorado-Ivanpah 220 kV T/L Route Section 1:

- Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Phasing circuits to reduce the magnetic fields (ACB-BCA or equivalent) (top to bottom, left to right looking North-East)

For Proposed Eldorado-Ivanpah 220 kV T/L Route Section 2:

- Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Phasing circuits to reduce the magnetic fields (ACB-BCA or equivalent) (top to bottom, left to right looking North-East)
- Using 10 foot taller transmission towers near populated areas

For Proposed Eldorado-Ivanpah 220 kV T/L Route Section 3:

- Using double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Phasing circuits to reduce the magnetic fields (ACB-BCA or equivalent) (top to bottom, left to right looking North-East)

For Proposed Ivanpah 220/115 kV Substation:

- Placing major substation electric equipment (such as transformers) away from the existing substation property lines

The recommended "no-cost and low-cost" magnetic field reduction design options 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 design options. 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 design options uniformly for the Proposed Project 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.

VII. APPENDIX A: TWO-DIMENTIONAL MODEL ASSUMPTIONS AND YEAR 2012 FORECASTED LOADING CONDITIONS

Magnetic Field Assumptions:

SCE uses a computer program titled "MFields"[36] 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 subtransmission 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 subtransmission and transmission lines were modeled using forecasted peak loads (see Table 6 below)
- All conductors were assumed to be straight and infinitely long;
- A 18 foot sag was assumed for all 115 kV subtransmission designs;
- A 37 foot sag was assumed for all 220 kV T/L designs;
- A 60 foot sag was assumed for all 500 kV T/L designs;
- Magnetic field strength was calculated at a height of three feet above ground;
- Resultant magnetic fields values were presented in this FMP;
- All line currents were assumed to be balanced (i.e. neutral or ground currents are not considered);
- Terrain was assumed to be flat; and

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

- Project dominant power flow directions were used.
- Phasing for the Market Place-Adelanto 500 kV T/L was provided by DWP

Table 6 Year 2012 Forecasted Loading Conditions for Proposed 220 kV and 500 kV T/Ls and Existing 115 kV Subtransmission Line	
Circuit Name	**Current (Amp)**
Eldorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115 kV Subtransmission Line	70
Proposed Eldorado-Ivanpah-No. 1 220 kV T/L	660
Proposed Eldorado-Ivanpah-No. 2 220 kV T/L	660
Market Place-Adelanto 500 kV T/L (DWP)[37]	920

Note:

1. The power flow direction is from Ivanpah Substation to Eldorado Substation.
2. The power flow direction for Marketplace-Adelanto 500 kV is from Marketplace substation to Adelanto substation, per DWP.
3. Forecasted loading data is based upon scenarios representing load forecasts for the second quarter of 2012. The forecasting data is subject to change depending upon availability of generations, load increase, changes in load demand, and by many other factors.

[37] Current (amperage) for Department of Water and Power (DWP) based on average historical load data, actual data was not available by DWP.

APPENDIX C

Notice of Application for a Certificate of Public Convenience and Necessity for Eldorado-Ivanpah Transmission Project

NOTICE OF APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

ELDORADO-IVANPAH TRANSMISSION PROJECT
Date: May 28, 2009

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 Eldorado-Ivanpah Transmission Project (Proposed Project). The Ivanpah Dry Lake Area has been identified to be a rich solar resource area in the State of California with approximately 3,400 megawatts (MW) of solar generation potential. The Proposed Project will provide the electrical facilities needed to tap and deliver power produced from the Ivanpah Dry Lake Area to utility load centers.

The Proposed Project includes the following elements:

- Construction of a new 220/115 kilovolt (kV) substation (Ivanpah Substation) on a 19-acre site, approximately 7 miles west of the California/Nevada border in the Ivanpah Dry Lake area.
- Construction of a new section of an existing 33kV distribution system to provide light and power to the Ivanpah Substation.
- Replacement of approximately 35 miles of the existing El Dorado-Baker-Coolwater-Dunn Siding-Mountain Pass 115 kV line between the new Ivanpah Substation and SCE's Eldorado Substation, near Boulder City, Nevada, with a double-circuit 220kV transmission line segment (Eldorado-Ivanpah) to be constructed with mostly double-circuit lattice steel tower structures in SCE's existing right-of-way (ROW). Where required, single-circuit H-frame steel tower structures would be used to facilitate the crossing of other transmission lines along the proposed route.
- Removal and replacement of a 1 mile portion of the existing SCE 115kV line and construction of a new 800 foot section of the 115kV line to a rack position at the proposed Ivanpah Substation to create the new SCE Coolwater-Baker-Dunn Siding-Mountain Pass-Ivanpah 115kV line.
- Installation of new fiber optic cable and communication equipment to connect the project to SCE's existing telecommunications system.
- Upgrades at Eldorado Substation to accommodate the new 220 kV lines.

Construction is scheduled to begin as early as September 2010 and is scheduled to be completed and operational by July 2013.

EMF Compliance: The 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 this project:

- Utilizing taller tower heights that exceed the engineering requirements near populated areas;
- Using double-circuit construction for transmission lines on the line route;
- Phasing circuits to reduce the magnetic fields; and
- Placing major substation electric equipment (such as transformers) away from the substation property lines.

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.

Public Review Process

Formal Protests: SCE has filed an application with the CPUC for a CPCN for the Proposed Project. Pursuant to the CPUC Rules of Practice and Procedure and GO 131-D, any affected party may, within 30 days of the date of this notice, protest and request that the CPUC hold hearings on the application. 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). Rule 2.6 requires, in part, that 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 29, 2009, protest and request that the CPUC hold hearings on the application. A protest must be filed with the CPUC within the 30 days and shall be concurrently served on each person listed in the certificate of service of the application. For complete requirements regarding the protest process, please see the CPUC's Rules of Practice and Procedure referenced above.

All protests should include the following:

1. Your name, mailing address, and daytime telephone number.
2. Reference to the Project Name identified above.
3. A clear and concise description of the reason for the protest.

The addresses for the CPUC Docket Office and Energy Division and for SCE are as follows:

California Public Utilities Commission Docket Office, Room 2001 505 Van Ness Avenue San Francisco, CA 94102	**AND**	Southern California Edison Co. Attention: Cheryl Lawson Law Dept. - Exception Mail 2244 Walnut Grove Avenue Rosemead, CA 91770	**AND**	California Public Utilities Commission Director, Energy Division 505 Van Ness Avenue, 4th Floor San Francisco, CA 94102

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.

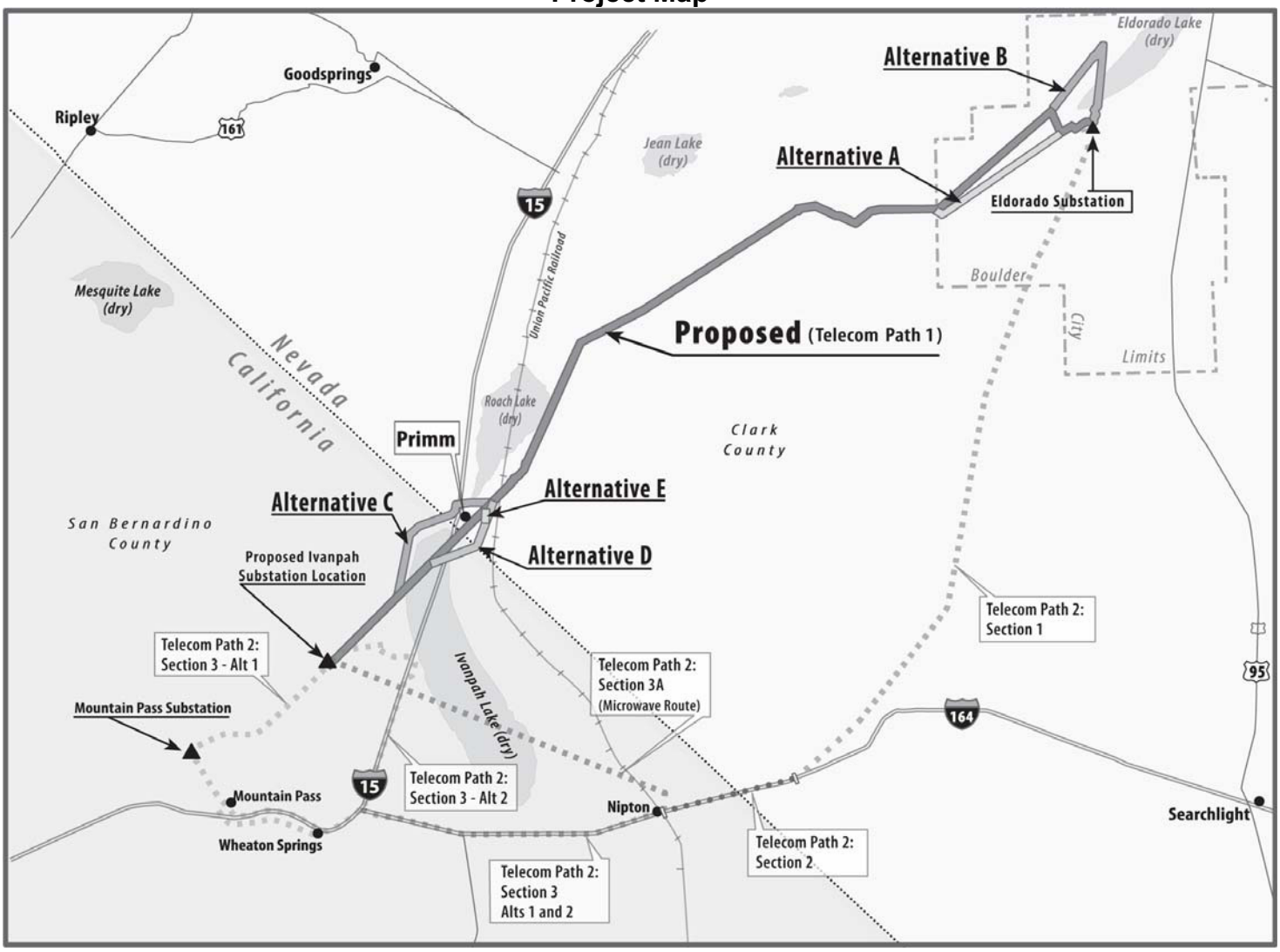
For assistance, please call the CPUC Public Advisor in San Francisco at (415)703-2074 (public.advisor@cpuc.ca.gov) or in Los Angeles at (213) 576-7055 (Public.Advisor.LA@cpuc.ca.gov),

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

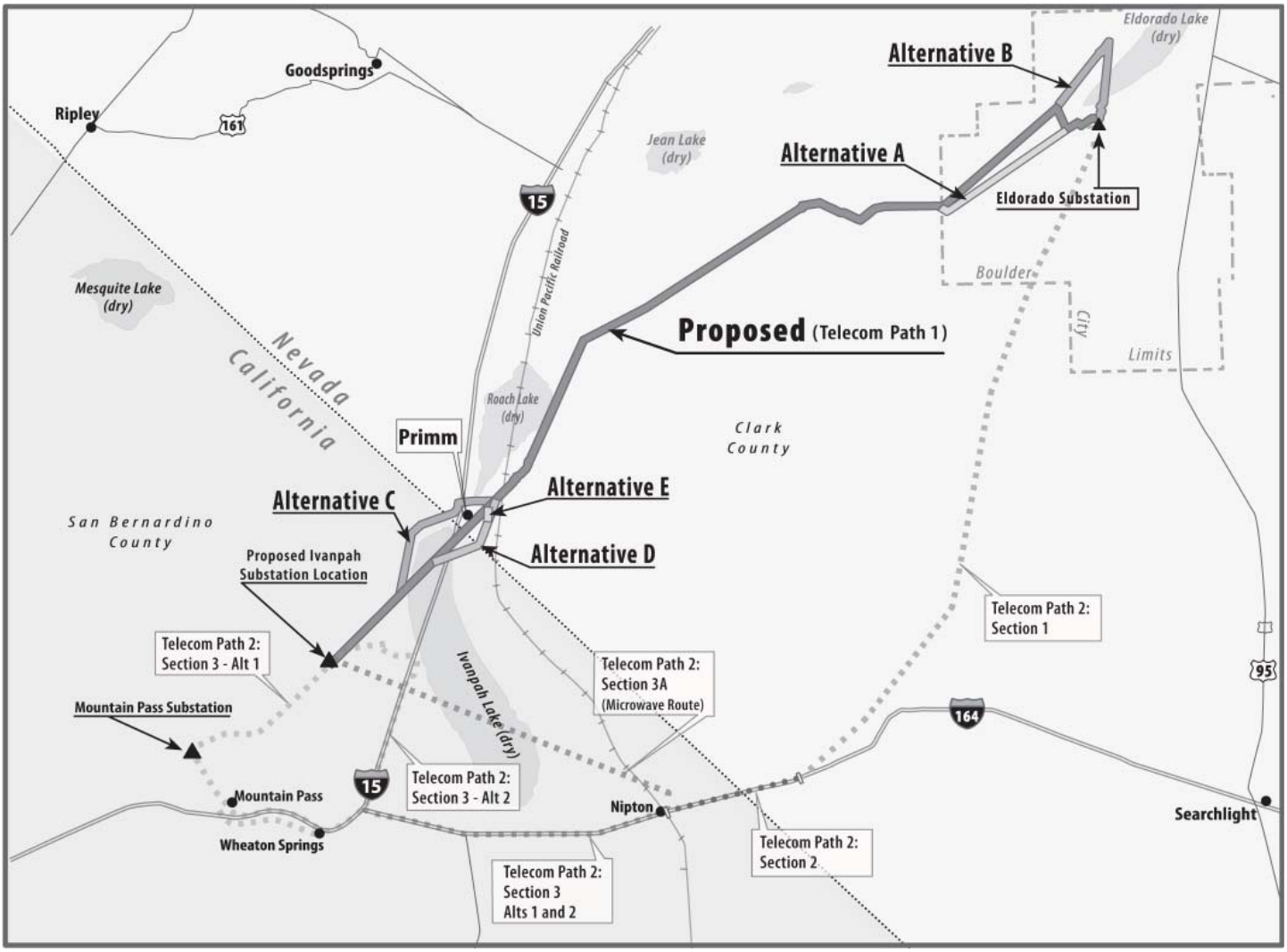
Project Toll-Free Information Line: (866) 977-3487
Project Website: www.sce.com/eitp

Nancy Jackson
SCE Local Public Affairs Region Manager
SCE Victorville Service Center
12353 Hesperia Rd.
Victorville, CA 92392
(760) 951-3237
Nancy.Jackson@sce.com

Project Map



SOUTHERN CALIFORNIA EDISON
ELDORADO-IVANPAH TRANSMISSION PROJECT
PROJECT MAP



Eldorado Ivanpah Transmission Project
Agency Service List

First Name	Last Name	Title	Organization	Address	City	State	Zip
Governmental Agencies-California							
Gary	Cathey	Chief, Division of Aeronautics, MS # 40	California Department of Transportation	PO Box 942874	Sacramento	CA	94274-0001
Melissa	Jones	Executive Director	California Energy Commission	1516 Ninth Street	Sacramento	CA	95814-5512
Mike	Chrisman	Secretary	California Natural Resources Agency	1416 Ninth St., Suite 1311	Sacramento	CA	95814
Will	Kempton	Director	California Department of Transportation	PO Box 942873	Sacramento	CA	94273-0001
Sandra	Shewry	Director	Department of Health Services	1501 Capitol Ave., Suite 6001	Sacramento	CA	94234-7320
Dorothy	Ric	Executive Director	State Water Resources Control Board	1001 "I" Street	Sacramento	CA	95814
Donald	Koch	Director	California Department of Fish and Game	1416 9th Street	Sacramento	CA	95814
Eldon	Heaston	Executive Director	Mojave Desert AQMD	14306 Park Avenue	Victorville	CA	92392-2310
Raymond	Wolfe	District 8 Director, Riverside and San Bernardino Counties	California Department of Transportation	464 West 4th Street	San Bernardino	CA	92401
Attn: Stationary Source		California Air Resources Board	1001 "I" Street	PO Box 2815	Sacramento	CA	95812
			Lahontan Regional Water Quality Control Board	14440 Civic Drive, Suite 200	Victorville	CA	92392
Julie	Fitch	Energy Division	California Public Utilities Commission	505 Van Ness Avenue	San Francisco	CA	94102
Karen	Miller	CPUC Public Advisor	California Public Utilities Commission	505 Van Ness Avenue, Room 2103	San Francisco	CA	94102
Governmental Agencies-Nevada							
Kenneth	Mayer	Director	Nevada Department of Wildlife	1100 Valley Road	Reno	NV	89512
Leo	Drozdoff	Administrator	Nevada Division of Environmental Protection	901 South Stewart Street, Suite 4001	Carson City	NV	89701–5249
Jo Ann P.	Kelly	Chairman	Public Utilities Commission of Nevada	1150 E. William Street	Carson City	NV	89701
Susan	Martinovich	Director	Nevada Department of Transportation	1263 South Stewart Street	Carson City	NV	89712
Allen	Biaggi	Director	Nevada Department of Natural Resources & Conservation	901 S. Stewart St., Ste. 5001	Carson City	NV	89701
Anne-Marie	Cuneo	Manager, Resource and Market Analysis Division	Public Utilities Commission of Nevada	1150 E. William Street	Carson City	NV	89701
Randall	Walker	Director of Aviation	Clark County Department of Aviation	P.O. Box 11005	Las Vegas	NV	89111-1005
Tracy	Taylor	State Engineer	Nevada Division of Water Resources	901 South Stewart St., Suite 2002	Carson City	NV	89701
Governmental Agencies-Federal							
Tom	Hurshman	Project Manager	Bureau of Land Management	2465 South Townsend Ave.	Montrose	CO	81401
David B.	Kessler	Project Manager, Southern Nevada Supplemental Airport EIS	Federal Aviation Administration-Western Region	P.O. Box 92007	Los Angeles	CA	90009-2007
Jeffrey	Steinmetz	Lead Planning and Environmental Coordinator	Bureau of Land Management-Southern Nevada District Office	4701 North Torrey Pines Drive	Las Vegas	NV	89130
Jurisdictions-Boulder City							
Roger	Tobler	Mayor	Boulder City	401 California Ave.	Boulder City	NV	89005
Brok	Armantrout	Community Development Director	Boulder City	401 California Ave.	Boulder City	NV	89005
Vicki	Mayes	City Manager	Boulder City	401 California Ave.	Boulder City	NV	89005
Jim	Giannosa	Chair	Boulder City Planning Commission	401 California Ave.	Boulder City	NV	89005
Jurisdictions-Clark County							
Barbara	Ginoulias	Director, Comprehensive Planning	Clark County	P. O. Box 551744	Las Vegas	NV	89155-1744
Virginia	Valentine	County Manager	Clark County	500 S. Grand Central Pkwy.	Las Vegas	NV	89155
Rory	Reid	Chairman	Clark County Commission	500 S. Grand Central Pkwy.	Las Vegas	NV	89155
Ron	Newell	Chair	Clark County Planning Commission	P. O. Box 551744	Las Vegas	NV	89155-1744
Jurisdictions-San Bernardino County							
Gary	Ovitt	Chairman, Board of Supervisors	San Bernardino County	385 N. Arrowhead Ave., 5th Fl.	San Bernardino	CA	92415-0110
Julie	Rynerson Rock	Director, Land Use Services Dept	San Bernardino County	385 N. Arrowhead Avenue - 1st Floor	San Bernardino	CA	92415-0182
Mark	Uffer	County Administrative Officer	San Bernardino County	385 N. Arrowhead Avenue	San Bernardino	CA	92415
Bill	Collazo	Chair	San Bernardino County Planning Commission	385 N. Arrowhead Avenue - 1st Floor	San Bernardino	CA	92415-0182

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Transmission Line Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
0573-101-03-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-04-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-151-01-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-161-06-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-161-07-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-161-08-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-161-16-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-161-17-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-181-03-0000	PRIMM SOUTH CORP	5420 KIETZKE LN 108	RENO	NV	89511
0573-181-04-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-181-06-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
206-00-002-016	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-003	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-004	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-006	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-008	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-009	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-010	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-015	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-016	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-001-021	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
214-00-002-001	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY	NV	89006-1350
215-00-002-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-003	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-004	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-005	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-006	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
215-00-002-012	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
216-25-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
216-26-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Transmission Line Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
216-33-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
216-34-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
216-35-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-12-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-13-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-14-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-23-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-24-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-26-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-27-000-003	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-34-000-001	INTERMOUNTAIN POWER AGENCY	P O BOX 51111 RM 1031	LOS ANGELES	CA	90051-5700
223-34-000-004	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
223-35-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-003	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-004	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-005	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-006	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-007	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
224-00-001-008	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
237-03-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
237-04-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
237-08-601-006	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-08-699-003	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
237-08-699-004	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
237-08-699-005	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
237-08-701-001	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-08-701-002	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-08-799-003	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
237-08-801-001	PRIMM 650 L P	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-08-801-002	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-09-101-001	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Transmission Line Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
237-09-201-001	PRIMM SOUTH REAL ESTATE COMPANY	5420 KIETZKE LN #108	RENO	NV	89511-2063
237-09-299-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
237-09-301-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
237-17-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Telecommunication Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
214-00-001-006	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-001-011	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-001-012	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-001-018	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-001-019	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-001-021	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-002-004	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-002-005	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-002-010	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-002-015	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
214-00-002-016	CITY OF BOULDER CITY	P O BOX 61350	BOULDER CITY NV	N/AVAIL	89006-1350
226-00-001-003	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-001-004	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-001-008	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-001-009	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-001-014	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-001-015	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-002-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-002-007	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-002-008	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-002-013	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
226-00-002-014	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-001-005	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-001-006	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-001-007	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-001-018	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-002-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
234-00-002-012	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
235-00-002-007	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
235-00-002-017	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
235-00-002-018	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Telecommunication Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
241-01-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-02-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-03-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-10-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-11-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-15-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-16-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-19-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-20-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-20-000-002	YEAGER JANE E	P O BOX 61	SEARCHLIGHT NV	N/AVAIL	89046-0061
241-20-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
241-21-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-29-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-29-000-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-29-000-003	YEAGER JANE E	P O BOX 61	SEARCHLIGHT NV	N/AVAIL	89046-0061
241-29-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
241-30-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-30-000-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-30-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-051-01-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-061-03-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-00-7100	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-11-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-12-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-15-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NEVADA	89074
0573-071-18-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NEVADA	89074
0573-071-19-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NEVADA	89074
240-25-000-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
240-25-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
240-26-000-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
240-26-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL

Eldorado Ivanpah Transmission Project
Ownership Mailing List for Notice of Application for CPCN
Proposed Telecommunication Route

APN	OWNER NAME	MAILING ADDRESS	MAILING CITY	MAILING STATE	MAILING ZIP
241-30-000-001	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-30-000-002	USA	N/AVAIL	N/AVAIL	N/AVAIL	20260-0000
241-30-099-001	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-061-05-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-01-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-03-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-04-0000	UNION PACIFIC RAILWAY CO	1400 DOUGLAS STREET	OMAHA	NE	68179
0573-071-05-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-11-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-071-15-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NV	89074
0573-071-17-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NV	89074
0573-071-18-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NV	89074
0573-071-19-0000	FREEMAN,GERALD W	176 BUENA CT	HENDERSON	NV	89074
0573-081-04-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-081-05-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-081-06-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-081-07-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-03-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-04-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-05-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-08-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-101-09-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-111-10-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-111-12-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-111-13-0000	MARTIN,RAYMOND D JR	42925 15TH ST W 6	LANCASTER	CA	93534
0573-111-14-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL
0573-111-22-0000	GOVERNMENT LAND	N/AVAIL	N/AVAIL	N/AVAIL	N/AVAIL

LIST OF NEWSPAPERS
PUBLISHING THE NOTICE FOR A
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

San Bernardino County Sun
4030 N. Georgia Blvd.
San Bernardino, CA 92407

Victorville Daily Press
13891 Park Avenue
Victorville, CA 92392

Barstow Desert Dispatch
130 Coolwater Lane
Barstow, CA 92311

Las Vegas Review-Journal
1111 W. Bonanza Road
P.O. Box 70
Las Vegas, NV 89125

Las Vegas Sun
2275 Corporate Circle, Suite 300
Henderson, NV 89074

Boulder City News
2290 Corp Cir. Ste. 250
Henderson, NV 89074

APPENDIX D

Articles of Incorporation

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 13, 2009, was sent to the Director of the Energy Division on March 17, 2009, in compliance with Ordering Paragraph No. 1 of Decision No. 88-01-063, Condition No. 5d.

APPENDIX E

Financial Statement for Eldorado-Ivanpah Transmission Project

SOUTHERN CALIFORNIA EDISON COMPANY

BALANCE SHEET

MARCH 31, 2009

A S S E T S

(Unaudited)

(Millions of Dollars)

UTILITY PLANT:	
Utility plant, at original cost	$22,021
Less - Accumulated depreciation and decommissioning	(5,606)
	16,415
Construction work in progress	2,649
Nuclear fuel, at amortized cost	257
	19,321
OTHER PROPERTY AND INVESTMENTS:	
Nonutility property - less accumulated provision for depreciation of $782	937
Nuclear decommissioning trusts	2,399
Other Investments	74
	3,410
CURRENT ASSETS:	
Cash and equivalents	1,177
Short-term investments	4
Margin and collateral deposits	37
Receivables, including unbilled revenues, less reserves of $37 for uncollectible accounts	686
Accrued unbilled revenue	335
Inventory	322
Accumulated deferred income taxes - net	76
Derivative assets	129
Regulatory assets	571
Other current assets	240
	3,577
DEFERRED CHARGES:	
Regulatory assets	5,273
Derivative assets	439
Other long-term assets	375
	6,087
	$32,395

SOUTHERN CALIFORNIA EDISON COMPANY

BALANCE SHEET

MARCH 31, 2009

CAPITALIZATION AND LIABILITIES

(Unaudited)

(Millions of Dollars)

CAPITALIZATION:	
Common stock	$2,168
Additional paid-in capital	536
Accumulated other comprehensive loss	(14)
Retained Earnings	4,032
Common shareholder's equity	6,722
Preferred and preference stock not subject to redemption requirements	920
Long-term debt	6,489
	14,131
CURRENT LIABILITIES:	
Short-term debt	1,558
Long-term debt due within one year	250
Accounts payable	659
Accrued taxes	366
Accrued interest	120
Counterparty collateral	7
Customer deposits	233
Book overdrafts	185
Derivative liabilities	141
Regulatory liabilities	972
Other current liabilities	418
	4,909
DEFERRED CREDITS:	
Accumulated deferred income taxes - net	3,036
Accumulated deferred investment tax credits	99
Customer advances	130
Derivative liabilities	742
Accumulated provision for pensions and benefits	2,527
Asset retirement obligations	3,049
Regulatory liabilities	2,542
Other deferred credits and other long-term liabilities	863
	12,988
Noncontrolling Interest	367
	$32,395

SOUTHERN CALIFORNIA EDISON COMPANY

STATEMENT OF INCOME

THREE MONTHS ENDED MARCH 31, 2009

(Unaudited)

(Millions of Dollars)

OPERATING REVENUE	$2,189
OPERATING EXPENSES:	
Fuel	199
Purchased power	540
Other operation and maintenance expenses	658
Depreciation, decommissioning and amortization	285
Property and other taxes	66
Total operating expenses	1,748
OPERATING INCOME	441
Interest income	4
Other nonoperating income	26
Interest expense - net of amounts capitalized	(109)
Other nonoperating deductions	(8)
INCOME BEFORE INCOME TAX	354
INCOME TAX EXPENSE	121
NET INCOME	233
Less: Net income attributable to noncontrolling interest	12
Dividends on preferred and preference stock not subject to mandatory redemption	13
NET INCOME AVAILABLE FOR COMMON STOCK	$208

APPENDIX F

Competing Entities for Eldorado-Ivanpah Transmission Project

APPENDIX F

COMPETING ENTITIES FOR ELDORADO-IVANPAH TRANSMISSION PROJECT

The proposed construction in California 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.

The Project traverses approximately 30 miles of NV Energy service territory in order to connect to the Eldorado Substation, an existing SCE facility connecting to the CAISO grid. As such, the Project will not compete with any other utility, corporation or person.

APPENDIX G

Annual Revenue Requirement

APPENDIX G
ANNUAL REVENUE REQUIREMENT

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.

If FERC determines that there are facilities the costs of which are ineligible for recovery in FERC-jurisdictional rates, SCE will seek recovery under Public Utilities Code § 399.2.5(b)(4). The revenue requirement of such costs, if any, is not presently known.

Angela K. Minkin
Chief Administrative Law Judge
California Public Utilities Office
505 Van Ness Avenue
San Francisco, CA 94102
A.09-05-XXX EITP

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