APPENDIX A

Comment Letters

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maziar Movassaghi, Acting Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

May 8, 2009

Mr. Michael Rosauer
California Public Utilities Commission
Director, Energy Division
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102
cchen@hdrinc.com

DRAFT MITIGATED NEGATIVE DECLARATION (ND) FOR KIMBALL SUBSTATION PROJECT (SCH# 2009041042)

Dear Mr. Rosauer:

The Department of Toxic Substances Control (DTSC) has received your submitted document for the above-mentioned project. As stated in your document: "The proposed project consists of two components: an upgrade of the existing seven mile 66 kilovolt (kV) subtransmission line and the construction of a new 66/12kV substation. The subtransmission line is to be upgraded along the following segments: Chino substation to Magnolia at Kimball Avenue (10,500 feet); Magnolia Avenue at Kimball Avenue to Euclid Avenue (6,500 feet); Brickmore Avenue to Rincon Meadows (6,400 feet); Rincon Meadows to Walker Street (4,300 feet); Walker Street to Hellman Avenue (2,450 feet); Hellman Avenue to Hereford Drive (6,100 feet); and Hereford Drive to Chino Corona Road (1.0 mile).

A-1

The second component of the project is a proposed substation, which has three alternative sites. Substation Alternative A is located approximately 325 feet north of Kimball Avenue and immediately east of Walker Avenue. Substation Alternative B is located approximately 515 feet north of Kimball Avenue and immediately west of Hellman Avenue. Substation Alternative C is located approximately 200 feet east of Hellman Avenue and at the eastern terminus of Kimball Avenue. Land uses surrounding the proposed Kimball Substation site are currently agricultural (primarily dairy), but planned to be light industrial, commercial, and residential uses".

Based on the review of the submitted document DTSC has the following comments:

1) The ND should identify and determine whether current or historic uses at the project area may have resulted in any release of hazardous wastes/substances.

A-1 Cont.

2) The document states that the ND would identify any known or potentially contaminated sites within the proposed project area. For all identified sites, the ND should evaluate whether conditions at the site may pose a threat to human health or the environment. Following are the databases of some of the regulatory agencies:

- National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
- EnviroStor, a database primarily used by the California Department of Toxic Substances Control, at www. Envirostor.dtsc.ca.gov.
- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.
- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
- Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards.
- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

A-2

3) The ND should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If hazardous materials or

A-3

wastes were stored at the site, an environmental assessment should be conducted to determine if a release has occurred. If so, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. It may be necessary to determine if an expedited response action is required to reduce existing or potential threats to public health or the environment. If no immediate threat exists, the final remedy should be implemented in compliance with state laws, regulations and policies.

A-3 Cont.

4) The project construction may require soil excavation and soil filling in certain areas. Appropriate sampling is required prior to disposal of the excavated soil. If the soil is contaminated, properly dispose of it rather than placing it in another location. Land Disposal Restrictions (LDRs) may be applicable to these soils. Also, if the project proposes to import soil to backfill the areas excavated, proper sampling should be conducted to make sure that the imported soil is free of contamination.

A-4

5) Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. A study of the site overseen by the appropriate government agency might have to be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.

A-5

6) If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the ND should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight.

A-6

7) If weed abatement occurred, onsite soils may contain herbicide residue. If so, proper investigation and remedial actions, if necessary, should be conducted at the site prior to construction of the project. If the project area was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency in the project area prior to construction of the project.

A-7

8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that

A-8

hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

A-8 Cont.

9) DTSC can provide guidance for cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies that are not responsible parties, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see www.dtsc.ca.gov/SiteCleanup/Brownfields, or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

A-9

If you have any questions regarding this letter, please contact me at (714) 484-5472 or at "ashami@DTSC.ca.gov".

Sincerely,

Al Shami
Project Manager
Brownfields and Environmental Restoration Program - Cypress

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

CEQA #2545

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY 711

Flex your power!
Be energy efficient!

Mr. Michael Rosauer
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

May 1, 2009

Dear Mr. Rosauer:

California Pubic Utilities Commission's Mitigated Negative Declaration for the Southern California Edison's Kimball Substation Project: SCH# 2009041042

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety, noise and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports.

The proposal is for the construction of the 66/12 kilovolt (kV) Kimball Substation on a two-acre site at the northeast corner of Kimball Avenue and Flight Avenue. The proposal includes the modification of approximately 6.7 miles of the existing Chino-Corona-Pedley subtransmission line; addition of a second circuit to the 0.9 mile segment of the existing Archibald-Chino-Corona subtransmission line and the construction of a new 0.4 mile segment; construction of six 12 kV underground circuits from the proposed substation to the nearest street; and the installation of new fiber-optic cable and communication equipment to connect the proposed Kimball Substation to Southern California Edison's existing telecommunication system.

The Kimball Substation site is located approximately 1,900 feet southeast of the easterly end of Runway 8R-26L at Chino Airport. Chino is an active airport with approximately 530 based aircraft and over 165,000 annual operations. The substation will be subject to aircraft overflights. The proposal should be submitted to Chino Airport to ensure that the proposal will be compatible with future as well as existing airport operations. The proposal should also be submitted to the City of Chino Airport Land Use Commission (ALUC) for a consistency determination. B-1

State Public Utilities Code Section 21659 and the Federal Aviation Administration's (FAA) Federal Aviation Regulation (FAR) Part 77 "Objects Affecting Navigable Airspace" prohibits structural hazards near airports. Included in the Draft Environmental Impact Report are the following mitigation measures: B-2

- MM Haz3: Coordination with the FAA would be required during construction to ensure compliance with FAA obstruction standards (FAR 77.11 guidelines).

- MM Haz4: FAA notification would be required for the LWS pole installation along the portion of the alignment of the subtransmission modifications within the airport's southwest-to northeast-oriented take-off zone, approximately 2,650 feet from the end of the runway to ensure compliance with FAA obstruction standards (FAR 77.11 guidelines).

"Caltrans improves mobility across California"

In accordance FAR Part 77, a Notice of Proposed Construction or Alteration (Form 7460-1) may be required. Form 7460-1 is available on-line at https://oeaaa.faa.gov/oeaaa/external/portal.jsp and should be submitted electronically to the FAA. B-2 Cont.

The proposal must not result in hazards to flight from visual hazards associated with distracting lights, glare, and sources of smoke, or from electronic hazards that may interfere with aircraft instruments or radio communication B-3

The location and type of landscaping trees should be selected carefully so they do not become a hazard to aircraft around the airport. B-4

We recommend that construction activities be coordinated with the airport manager to ensure that appropriate action, such as, Notice to Airmen (NOTAM), are publicized sufficiently in advance. B-5

The protection of airports from incompatible land use encroachment is vital to California's economic future. Chino Airport is an economic asset that should be protected through effective airport land use compatibility planning and awareness. Although the need for compatible and safe land uses near airports is both a local and State issue, airport staff, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors. B-6

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise, safety, and regional land use planning issues. We advise you to contact our District 8 office concerning surface transportation issues. B-7

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-5314.

Sincerely,

Sandy Hesnard

SANDY HESNARD
Aviation Environmental Specialist

c: State Clearinghouse, City of Chino, Chino Airport

"Caltrans improves mobility across California"

From: Gordon Mize [mailto:gmize@aqmd.gov]
Sent: Wednesday, April 22, 2009 3:08 PM
To: Chen, Connie
Subject: Draft MND for thr proposed SCE's Kimball Substation

Hi Connie,

I am looking at the air quality portions of this draft CEQA document now. On page 55 of the IS under Air Quality, the lead agency cites "coefficients published by the SCAQMD and the results of an URBEMIS Air Quality Model." I have looked at the air quality appendix but need to see what coefficients (emission factors most likely) and what (Our CEQA AQ Analysis Handbook from our website?) are being cited. I also need to see the URBEMIS output sheets. Could those be e-mailed to me please? C-1

Thank you.

Gordon

Gordon E. Mize
Air Quality Specialist
South Coast Air Quality Management District
CEQA Section
(909) 396-3302 phone
(909) 396-3324 fax

From: Gordon Mize [gmize@aqmd.gov]
Sent: Thursday, April 23, 2009 1:25 PM
To: Chen, Connie
Subject: RE: Draft MND for thr proposed SCE's Kimball Substation

Hi Connie,

Thank you for getting back with me so quickly. Could I get another questions answered if possible, please?

What would be a ballpark estimate for the amount of daily soil disturbance (the estimated total acreage per day) for all projects including the substation; 6.7 miles of subtransmission line (if soil disturbance occurs); 0.9 mile segment and a new 0.4 mile segment for the Archibald-Chino-Corona line and Chino-Corona-Pedley line (if soil disturbance occurs); construction of the 12 kV underground circuits; and any other soil-disturbance that would occur. I know the substation area is small, 2-acres. C-2

Thank you. If you have any questions, please contact me.

Gordon

Gordon E. Mize
Air Quality Specialist
South Coast Air Quality Management District
CEQA Section
(909) 396-3302 phone
(909) 396-3324 fax

RIVERSIDE COUNTY
FIRE DEPARTMENT
In cooperation with the
California Department of Forestry and Fire Protection

210 West San Jacinto Avenue • Perris, California 92570 • (909) 940-6900 • Fax (909) 940-6910

John R. Hawkins
Fire Chief

Proudly serving the unincorporated areas of Riverside County and the Cities of:

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Board of Supervisors

Bob Buster, District 1

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Jeff Stone, District 3

Roy Wilson, District 4

Marion Ashley, District 5

May 8, 2009

Kimball Substation Project
Connie Chen, Associate Environmental Planner
801 S. Grand Ave. Suite 500
Los Angeles, CA 90017

Re: Notice of Intent to Adopt a Mitigated Negative Declaration- Southern California Edison's Kimball Substation Project (A.06-12-032)

Thank you for allowing the Riverside County Fire Department the opportunity to review the Kimball Substation Project.

With respect to the referenced project, the Riverside County Fire Department has the following comments.

The following comments reflect the construction phase of the project.

The proposed project(s) will add to the cumulative adverse affect on the Fire Department's ability to maintain the current level of service. These impacts include fire and medical emergencies as well as public service calls, all due to the increased presence of maintenance vehicles and potential traffic congestion. D-1

Mitigation measures should be considered in order to help reduce these impacts to a level below significance. Examples of mitigation measures might include:

Costs necessary to maintain the increased level of service may be at least partially offset by taxes acquired by the new construction; however additional funding sources may have to be identified to cover any shortfalls. D-2

This project shall participate in any program required regarding impact fees to fund increased emergency service needs.

In the interest of Public Safety, the project shall provide an Alternate or Secondary D-3

Access(s) as stated in the Transportation Department Conditions. Said Alternate or Secondary Access(s) shall have concurrence and approval of both the Transportation and Fire Departments, and shall be maintained through out any phasing.

This development shall maintain two (2) points of access, via all-weather surface roads, as approved by the Fire Prevention Bureau throughout the construction phase of the project.

Provide access to all fire hydrants along all access routes and provide and maintain fire department vehicle access roads along project site. Vehicle access roads shall be an all weather surface.

D-3 Cont.

As with any additional construction within a response area, a "cumulative" increase in requests for service will add to the Fire Department's ability to provide adequate service.

In addition, provide Fire Department vehicle access roads; unobstructed width of not less than twenty-four (24) feet and an unobstructed vertical clearance of not less than thirteen (13) feet six (6) inches. (CFC 902.2.2.1)

> *Construction activities could result in traffic delays that could affect the ability of fire and emergency service units to meet response time goals within the project area.*
>
> *Temporary road closures, lane closures, or detour routes may impair response times by the fire department and other emergency service providers.*
>
> *Non fire related medical emergencies could temporary increase within the presence of construction workers and heavy machinery during construction of the project.*
>
> *Mitigation measures should be considered in order to help reduce these impacts to a level below significance.*

The California Fire Code outlines fire protection standards for the safety, health, and welfare of the public. These standards will be enforced by the Fire Chief.

D-4

Sincerely,

Jason Neuman

Fire Captain

Strategic Planning

Riverside County Fire Department

(951) 940-6349

CITY of CHINO

May 6, 2009

Kimball Substation Project c/o HDR Engineering
Connie Chen
801 South Grand Avenue, Suite 500
Los Angeles, CA 90017

RE: 2009 Draft MND for the Kimball Substation

Dear Ms. Chen:

Thank you for providing the City of Chino an opportunity to review and comment on the Draft Mitigated Negative Declaration (MND) for the Southern California Edison's (SCE) Kimball Substation. Based upon staff's review of the project, the City of Chino has the following comments:

1. The study indicates that the "subtransmission line modification alignment" (Segment 10) south of Pine Avenue will result in a second circuit being placed within an existing right-of-way within The Preserve Specific Plan. This right-of way is within the future Community Core (Downtown), near a proposed school site, and residential land use designations. The Community Core is planned to be a highly urbanized area of commercial and residential land uses (refer to attached Figure 16 of The Preserve Specific Plan).

   The California Environmental Quality Act requires the CPUC to examine potential conflicts with any applicable land use plan, policy, or regulation with jurisdiction over the area, including, but not limited to the general plan, specific plan, or zoning ordinance that was adopted for the purpose of avoiding or mitigating an environmental effect. The addition of the second circuit raises concerns about the potential impact to the adopted specific plan land uses noted above.

E-1

13220 Central Avenue, Chino, California 91710
Mailing Address: P.O. Box 667, Chino, California 91708-0667
(909) 627-7577 • (909) 591-6829 Fax
Web Site: www.cityofchino.org

The poles and conductor on Segment 10 do not align with future planned roadways, which suggest the proposed lines may be placed in close proximity to future commercial and residential land uses resulting in the easement sharing a lot line with a residential property/lot. E-1 Cont.

2. The existing poles on the north side of Kimball Avenue between Hellman and Rincon Meadows are in the future right-of-way. Please confirm our understanding that these poles will be relocated north of their current location in order to accommodate ultimate right-of-way for Kimball Avenue. E-2

3. Figures 2.1-1 and 2.1-2 which are intended to illustrate the aesthetic impacts do not show the electrical circuits/equipment proposed within the substation and therefore, do not provide adequate detail on the equipment's visibility and visual impacts to the surrounding properties. E-3

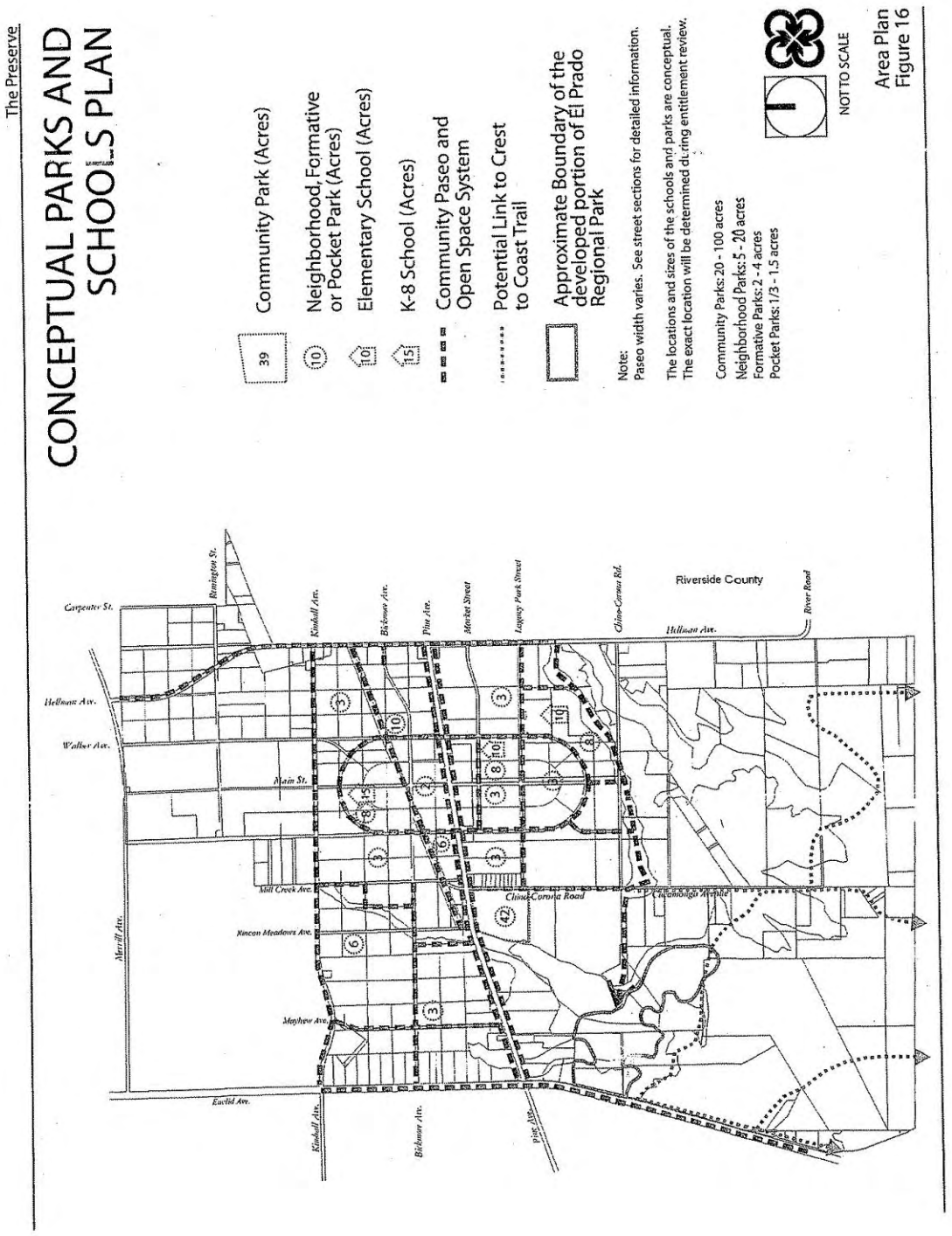
Thank you again for providing the City of Chino the opportunity to review the subject documents. We look forward to reviewing the revised MND to address these important issues. Should you have any questions, please feel free to contact me at (909) 464-0754.

Sincerely,

Maria Staar

Maria Staar
Associate Planner

cc: Charles E. Coe, AICP, Director of Community Development
Brent Arnold, City Planner
Joe Indrawan, Civil Engineering Manger
Community Development Department File


The Preserve
CONCEPTUAL PARKS AND SCHOOLS PLAN
Community Park (Acres)
39
Neighborhood, Formative or Pocket Park (Acres)
10
Elementary School (Acres)
10
K-8 School (Acres)
15
Community Paseo and Open Space System
Potential Link to Crest to Coast Trail
Approximate Boundary of the developed portion of El Prado Regional Park
Note:
Paseo width varies. See street sections for detailed information.
The locations and sizes of the schools and parks are conceptual. The exact location will be determined during entitlement review.
Community Parks: 20 - 100 acres
Neighborhood Parks: 5 - 20 acres
Formative Parks: 2 - 4 acres
Pocket Parks: 1/3 - 1.5 acres
NOT TO SCALE
Area Plan
Figure 16
Carpenter St.
Remington St.
Kimball Ave.
Bickmore Ave.
Pine Ave.
Market Street
Legacy Park Street
Cline-Cavitt Rd.
Hellman Ave.
River Road
Riverside County
Walker Ave.
Main St.
Mill Creek Ave.
Rincon Meadows Ave.
Mayhew Ave.
Merrill Ave.
Euclid Ave.
Chino-Corona Road
Cucamonga Avenue

SOUTHERN CALIFORNIA
EDISON
An *EDISON INTERNATIONAL* Company

Albert J. Garcia
Attorney
albert.garcia@sce.com

May 6, 2009

Mike Rosauer,
CPUC CEQA Project Manager
Energy Division
505 Van Ness Avenue
San Francisco, CA 94102-3298

Re: Comments to Draft Mitigated Negative Declaration/Southern California Edison Company's (SCE) Kimball Substation Project (A.06-12-032)

Dear Mr. Rosauer:

SCE's comments to the Kimball Substation Project Draft Mitigated Negative Declaration are set forth on the enclosed table. Please note that SCE is also submitting a copy of a technical memorandum prepared by SCE for the South Coast Air Quality Management District. This technical memorandum updates the fugitive dust calculations for the Project, but still concludes that fugitive dust emissions from pole installations will be below SCAQMD thresholds of significance.

Very truly yours,

Albert J. Garcia

AJG:ajg:

Enclosure

P.O. Box 800 2244 Walnut Grove Ave. Rosemead, California 91770 (626) 302-6992 Fax (626) 302-1926

Southern California Edison
Comments to Kimball MND
May 5, 2009

Number	Page	Text reference	Comment	
1	17	2nd paragraph …long distribution lines between "Edison and Archibald" Substations.	In the Electrical Needs Area, there are long distribution lines originating from "Chino, Soquel, Archibald, and Mira Loma" Substations.	F-1
2	17	3rd paragraph … the length of the distribution lines between Edison and Archibald substations…	In the Electrical Needs Area, there are long distribution lines originating from "Chino, Soquel, Archibald, and Mira Loma" Substations.	F-2
3	17	5th paragraph …long distribution lines between Edison and Archibald Substations.	In the Electrical Needs Area, there are long distribution lines originating from "Chino, Soquel, Archibald, and Mira Loma" Substations.	F-3
4	17	5th paragraph Therefore, SCE is proposing a project to be operational on December 31, 2009.	SCE has changed the planned operating date due to receiving an estimated approval from the CPUC of September 2009. Therefore, the planned operating date for Kimball Substation is June 1, 2010.	F-4
5	18	2nd bullet …a new substation between the existing "Edison and Archibald" substations.	Kimball Substation would be located between the existing "Chino Substation" and Archibald Substation.	F-5
7	23	7th paragraph Equipment lay down areas for substation construction would be within the substation footprint.	To clarify, SCE intends that material staging area will be within the area fenced for construction of Kimball Substation (which would include the substation footprint, buffer, and access road).	F-6

Southern California Edison
Comments to Kimball MND
May 5, 2009

Number	Page	Text reference	Comment	
6	38	2nd paragraph Construction is scheduled to begin in May 2009, with a projected completion date for the substation and subtransmission line of April 2010. Approximately two months would be required to energize and test subtransmission line components once construction has been completed. The projected operating date for the proposed project is June 2010.	Construction is scheduled to begin in September 2009, with a projected completion date for the substation and subtransmission line of April 2010. Approximately two months would be required to energize and test subtransmission line components once construction has been completed. The projected operating date for the proposed project is June 2010.	F-7
7	49	Figure 2.1-4, Simulation of Subtransmission Line Along Edison Avenue	The subtransmission line depicted in the photo would not be modified as part of the project.	F-8
8	54	6th CEQA Checklist item	This item is not part of Appendix G of the CEQA Guidelines. The proposed CEQA Guideline amendments for greenhouse gas emissions developed by the Governor's Office of Planning and Research indicate that this issue is more appropriately discussed in the Cumulative Impacts of the project.	F-9
9	101	4th checklist item	The project would not place housing within a 100-year flood hazard area.	F-10
10	154	3rd paragraph …SCE's application for a Certificate of Public Convenience and Necessity.	SCE has applied for a Permit to Construct.	F-11

APPENDIX B

Air Quality

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

TECHNICAL MEMO

May 6, 2009

To: Milissa Marona, SCE Regulatory Policy and Affairs
From: A.L. Wilson, SCE Corporate Environment, Health and Safety - Air Quality
cc: Erika Wilder, SCE CEH&S - Power Delivery Projects

Re: Fugitive Dust Emissions Estimations for Kimball Substation Project

Southern California Edison Company's Proponent's Environmental Assessment for the Kimball Substation Project underestimated fugitive dust emissions for construction of the project. The attached spreadsheet tables contain a more complete estimation of fugitive dust emissions.

The estimated fugitive dust emissions in the attached spreadsheet tables are based on the number of hours per day of grading and the material handling. Using this method, the fugitive dust emissions are calculated to be approximately 14 pounds per day (lbs/day) PM_{10}. Fugitive dust emissions from vehicles on paved streets (re-entrained dust) and from very limited unpaved road usage will add approximately 2 lbs/day to the estimate. The use of water trucks during construction is assumed to provide a minimum control efficiency of 50 percent. Therefore, the estimated on-site total fugitive dust emissions during the grading phase is 7 lbs/day PM_{10} (2 lbs/day $PM_{2.5}$) and about 1 lb/day PM_{10} (and less than 1 lb/day $PM_{2.5}$) off-site emissions from vehicles.

Substation grading is expected to generate the most fugitive dust emissions for the project. Approximately 160 subtransmission poles would also be installed as part of the project, at a rate estimated to be two to three poles per day. Fugitive dust emissions from the pole installations are expected to be negligible.

Kimball Substation-Grading Phase (Off-Road Construction Equipment Fugitive Dust Emissions)

Using Graders
Emission Factors
from AP42 Table 11.9-1

E=k*0.051*(S^2) for PM10

E=k*0.040*(S^2.5) for PM2.5
k=.6 PM10
k=.031 PM2.5
S=mean speed
E=lbs/VMT

Assume	3 mph grader speed
E(PM10)	0.2754 lbs/VMT
E(PM2.5)	0.0193 lbs/VMT
E(PM10)	0.826 lbs/hr
E(PM2.5)	0.058 lbs/hr
Assume	8 hours per day grading
E(PM10)	6.61 lbs/day/grader
E(PM2.5)	0.46 lbs/day/grader
Assume	1 Grader
E(PM10)	6.6 lbs/day
E(PM2.5)	0.5 lbs/day
Assume	40 days of grading
E(PM10)	264 lbs total activity
E(PM2.5)	19 lbs total activity

Material Loading/Handling (AP42, p. 13.2.4-3)
Used to determine emissions from the cut and fill operation
Estimates emissions from using the loader

E=lbs/ton of material handled

E= k*0.0032*((U/5)^1.3)/((M/2)^1.4)
k=.35 for PM10 and .053 for PM2.5
U=average wind speed during construction
M=moisture content

Assumed parameters

U(average day)	7 mph
U(max day)	29 mph
M	8 %
E(PM10) avg	0.000249 lbs/ton of material
E(PM2.5) avg	0.000038 lbs/ton of material
E(PM10) max	0.001580 lbs/ton of material
E(PM2.5) max	0.000239 lbs/ton of material

7500 cubic yards of material to be removed and/or hauled in

Assumed Handled once

7500 cubic yards of material handled

Assumed 1.7 tons/cy

12750 tons of material handled

20 days needed for handling

638 tons of material handled per day

0.2 PM10	lbs/day	Average wind speed day
0.0 PM2.5	lbs/day	Average wind speed day
1 PM10	lbs/day	Max wind speed day
0 PM2.5	lbs/day	Max wind speed day
20 PM10	lbs total activity	
3 PM2.5	lbs total activity	

Drilling Rig Operations
AP42 11.9-4

E(TSP)= 1.3 lb/hole

Assume
0 holes per day
0.6 factor for PM10 (like grader)
0.03 factor for PM2.5 (like grader)

E(PM10)	0.0 lbs/day
E(PM2.5)	0.0 lbs/day

Assume
0 days drilling

E(PM10)	0 lbs total activity
E(PM2.5)	0 lbs total activity

Compactor Operation
Used dozer equation in
AP 42 Tables 11.9-1 and 11.9-2

E(PM10)= k*(s^1.5)/(M^1.4)
E(PM2.5)= k*5.7*(^1.2)/(M^1.3)

k= .75 for PM10
k=0.105 for PM2.5
s=silt content %
M= moisture content %

Assume

s=	8.5 %
M=	8 %
E(PM10)=	1.011 lb/hr
E(PM2.5)=	0.523 lb/hr

Assume
6 hrs/day compacting
1 compactor

E(PM10)	6.1 lbs/day
E(PM2.5)	3.1 lbs/day

Assume
20 days compacting

E(PM10)	121 lbs total activity
E(PM2.5)	63 lbs total activity

Uncontrolled Fugitive Dust Emission Summary

PM10 (lbs/day)	PM10 Total Activity (lbs)	PM2.5 (lbs/day)	PM2.5 Total Activity (lbs)	Activity
7	264	0	19	Using Graders
1	20	0	3	Material Loading/Handling
0	0	0	0	Drilling Rig Operations
6	121	3	63	Compactor Operation
14	406	4	84	Total Uncontrolled

Assume 50% control factor for using watering trucks

PM10 (lbs/day)	PM10 Total Activity (lbs)	PM2.5 (lbs/day)	PM2.5 Total Activity (lbs)	Activity
7	203	2	42	Total Controlled

For Comparison ONLY, was not used in calcs

Alternative emission factor from SCAQMD
Table A9-9-F Dirt Pushing or Bulldozing

E=((0.45*((G^1.5))/(H^1.4))*t*J

G=silt content (%) Table A9-9-F-1
H=moisture content (%) Table A9-9-F-1
t=2.2046
J=hours pushing

Assume

G=	7.5 overburden
H=	15 MOIST, watering for control
t=	2.2046
J=	6
E(PM10)=	2.8 controlled lbs/day per grader
E(PM10)=	2.8 controlled lbs/day
AP42 (PM10)	3.3 controlled lbs/day

Kimball Substation-Grading Phase (Mobile Source Emissions)

Exhaust, Tire and Brake Emissions
From SCAQMD file "onroadEF07_26.xls" as of May 21, 2007
Used 2008 Table

Assumed 1 passenger vehicle per crew member
Assumed 50 vmt per day per passenger vehicle
6 crew member
300 Total passenger VMT per work day
40 Work days

Passenger Vehicles <8500 lbs (pounds/mile)		Emissions (lbs/day)	Total Activity Emissions (lbs)
CO	0.01055	3.2	127
NOx	0.00110	0.3	13
ROG	0.00108	0.3	13
SOx	0.00001	0.0	0
PM10	0.00009	0.0	1
PM2.5	0.00005	0.0	1

Assumed 0 vehicles to transport crew to work site
Assumed 50 vmt per day per vehicle
6 crew member
0 Total VMT per work day
40 Work days

Passenger Vehicles <8500 lbs (pounds/mile)		Emissions (lbs/day)	Total Activity Emissions (lbs)
CO	0.01055	0.0	0
NOx	0.00110	0.0	0
ROG	0.00108	0.0	0
SOx	0.00001	0.0	0
PM10	0.00009	0.0	0
PM2.5	0.00005	0.0	0

All On-Road Vehicles for Activity	Emissions (lbs/day)	Total Activity Emissions (lbs)
CO	3	127
NOx	0	13
ROG	0	13
SOx	0	0
PM10	0	1
PM2.5	0	1

Paved Road Fugitive Dust Emissions
From SCAQMD CEQA AQ Handbook
Table A9-9-B
Passenger Vehicles on paved road fugitive dust

E=VxG (PM10 with street cleaning)

V= vehicle miles travelled
G=EF from table A9-9-9-B1

Road Type	G(PM10 lb/VMT)
Local Streets	0.018
Collector Streets	0.013
Major Streets/Highways	0.0064
Freeways	0.00065

Crew Personal vehicles
300 Total passenger VMT on paved roads per day
15 Local Streets (assumed 5%)
15 Collector Streets (assumed 5%)
30 Major Streets/Highways (10%)
240 Freeways (assumed 80%)
40 Work days

Road Type	PM10 (lbs/day)	Total Activity PM10 (lbs)
Local Streets	0.3	11
Collector Streets	0.2	8
Major Streets/Highways	0.2	8
Freeways	0.2	6
Crew Personal (PM10)	0.8	33

0.169 PM2.5 fraction of PM10 from SCAQMD Table A - Updated CEIDARS Table with PM2.5 Fractions

Crew Personal (PM2.5) 0.1 5

Transport to site from one location
0 Total crew transport VMT on paved roads per day
0 Local Streets (assumed 10%)
0 Collector Streets (assumed 10%)
0 Major Streets/Highways (80%)
0 Freeways (assumed 0%)
40 Work days

Road Type	PM10 (lbs/day)	Total Activity PM10 (lbs)
Local Streets	0.0	0
Collector Streets	0.0	0
Major Streets/Highways	0.0	0
Freeways	0.0	0
Transport (PM10)	0.0	0

0.169 PM2.5 fraction of PM10 from SCAQMD Table A - Updated CEIDARS Table with PM2.5 Fractions

Transport (PM2.5) 0.00 0

	PM10 (lbs/day)	Total Activity PM10 (lbs)	PM2.5 (lbs/day)	Total Activity PM2.5 (lbs)
Total Activity Paved Road Fugitive Dust	0.8	33	0.1	5

Unpaved Road Fugitive Dust Emissions
From SCAQMD CEQA AQ Handbook
Table A9-9-D

E=V*F
V= vehicle miles travelled on unpaved roads
F=2.1*(G/12)*(H/30)*((J/3)^.7)*((I/4)^.5)*((365-K)/365)
G= surface silt
H= mean vehicle speed
I= number of wheels

J=vehicle wt
K= days of precip per year at least 0.01 in

Assumed
0.1 Miles of unpaved road leading to substation
2 Trips per day per vehicle
6 vehicles to transport crew to site

1.2 VMT on unpaved roads per day

Assumed
G= 11
H= 15
I= 4 wheels

J= 3 tons
K= 18 precip days

0.9 F PM10 (lbs/VMT)

1 PM10 (lbs per day) Uncontrolled
44 Total Activity PM10 (lbs) Uncontrolled

PM2.5 fraction of PM10 from SCAQMD Table A - Updated CEIDARS Table with PM2.5 Fractions
0.212

0 PM2.5 (lbs per day) Uncontrolled
9 Total Activity PM2.5 (lbs) Uncontrolled

Assumed
50 Percent reduction in fug em due to using water trucks

1 PM10 (lbs per day) Controlled
22 Total Activity PM10 (lbs) Controlled

0 PM2.5 (lbs per day) Controlled
5 Total Activity PM2.5 (lbs) Controlled

All On-Road Vehicles for Activity	Emissions (lbs/day)	Total Activity Emissions (lbs)	Notes
CO	3	127	
NOx	0	13	
ROG	0	13	
SOx	0	0	
PM10 (includes fugitive dust)	2	77	Uncontrolled
PM2.5 (includes fugitive dust)	0	15	Uncontrolled

All On-Road Vehicles for Activity	Emissions (lbs/day)	Total Activity Emissions (lbs)	Notes
CO	3	127	
NOx	0	13	
ROG	0	13	
SOx	0	0	
PM10 (includes fugitive dust)	1	56	Controlled
PM2.5 (includes fugitive dust)	0	11	Controlled

APPENDIX C

EMF

FIELD MANAGEMENT PLAN for

Kimball Substation and 66 kV Subtransmission Lines

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

This document is Southern California Edison Company's (SCE) Field Management Plan (FMP) for the proposed Kimball Substation Project (hereinafter, Proposed Project). SCE proposes to construct, operate, and maintain a new Kimball 66/12 kilovolt (kV) Substation (hereinafter, Proposed Substation) with two 66 kV subtransmission source lines[1] (hereinafter, Proposed Subtransmission Lines) and six 12 kV distribution lines to serve forecasted demand in southwestern San Bernardino County and western Riverside County and to maintain safe and reliable service to customers in this area. The Proposed Substation would be located near the northeast corner of Kimball Avenue and Walker Avenue in the City of Chino, California.

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 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:

- The positions of major substation electrical components (such as transformers and switch-racks and buses) meet or exceed all applicable setback distances from the substation fence or property line;
- Using taller poles;

1 The existing Chino-Corona-Pedley 66 kV Subtransmission Line would be the source line for the proposed Kimball Substation.

- Using a "triangular" type pole-head configuration for single-circuit segments and a double-circuit pole-head configuration for double-circuit segment; and
- Phasing the Proposed Subtransmission Lines with respect to the adjacent existing transmission and subtransmission lines whenever practical.

SCE's plan for applying the above "no-cost" and "low-cost" magnetic field reduction measures uniformly and equitably for the entire Proposed Project area is consistent with CPUC 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, 26 July, 2006.

II. BACKGROUND REGARDING EMF AND PUBLIC HEALTH RESEARCH ON EMF

There are many sources of power frequency[3] 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.[4]

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[5], the National Radiation Protection Board (NRPB) 2001[6], the International Commission on Non-Ionizing Radiation Protection (ICNIRP) 2001, the

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

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

5 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.

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

California Department of Health Services (CDHS) 2002[7], and the International Agency for Research on Cancer (IARC) 2002[8].

The federal government conducted EMF research as a part of a $45-million research program managed by the NIEHS. This program, known as 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."[9]
- "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."[10]
- "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."[11]

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

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7 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.

8 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

9 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

10 *ibid.*, p. iii

11 *ibid.*, p. 37 - 38

"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."[12]

In 2002, three scientists for CDHS concluded:

"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."[13]

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

"ELF magnetic fields are possibly carcinogenic to humans"[14], 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

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

13 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

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

consistent relationship has been seen in studies of childhood brain tumors or cancers at other sites and residential ELF electric and magnetic fields."[15]

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 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,[16] and the policy direction that (1) use of numeric exposure limits was not appropriate in setting utility design guidelines to address EMF,[17] 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

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15 *ibid.*, p. 332 - 334

16 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.").

17 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.").

(PTC) proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the CPUC's low-cost/no-cost policies.[18]

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:

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. These, and other requirements (such as compliance with the California Environmental Quality Act), are in existing CPUC regulations and SCE's construction standards.

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18 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.").

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, would:
  - Cost in the range of 4% of the total project cost.
  - For low cost mitigation, the "EMF reductions will be 15% or greater at the utility ROW [right-of-way]..."[19]

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."[20]

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."[21] 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

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19 CPUC Decision 06-01-042, p. 10
20 CPUC Decision 93-11-013, § 3.3.2, p.10.
21 CPUC Decision 06-01-042, p. 10

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 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% 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."[22]

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22 *ibid.*, p. 11

IV. PROJECT DESCRIPTION

SCE proposes to construct an unmanned, automated, 56 MVA, 66/12 kV low-profile substation containing a 66 kV switchrack, two 28 MVA 66/12 kV transformers, two 4.8 MVAR 12 kV capacitor banks, and a 12 kV switchrack. The Proposed Substation would be located near the northeast corner of Kimball Avenue and Walker Avenue in the City of Chino, California (Figure 1). The Proposed Substation would be served from two 66 kV subtransmission source lines. Six 12 kV distribution circuits would be constructed underground from the substation to Kimball Avenue.

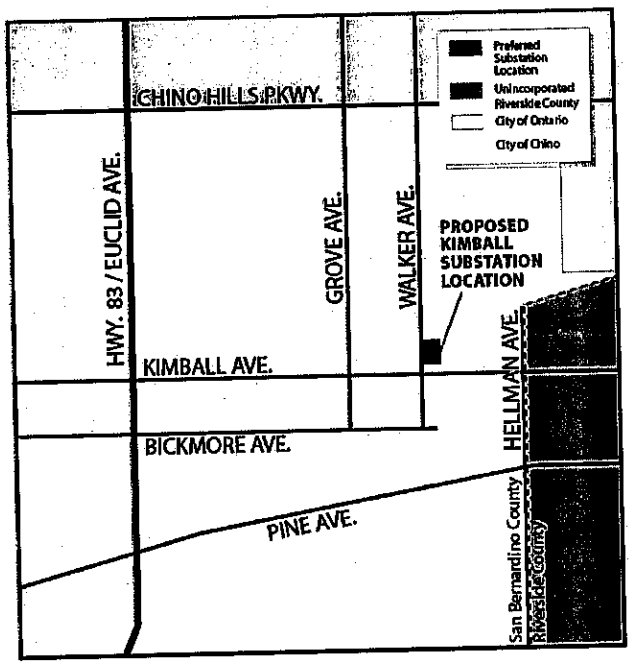

Figure 1. Proposed Substation Location

The existing Chino-Corona-Pedley 66 kV Subtransmission Line would be the source line for the Proposed Substation. This subtransmission line would be looped into the proposed Kimball Substation. To accomplish this loop-in, two new 66 kV line segments, approximately 340 feet each, would be constructed underground from the Chino-Corona-Pedley 66 kV Subtransmission Line at the intersection of Kimball Avenue

and Walker Avenue to the Proposed Substation. As a result of the loop-in, two new 66 kV subtransmission lines would be formed: the Chino-Kimball 66 kV Subtransmission Line and the Chino-Cimgen-Kimball 66 kV Subtransmission Line. To accomplish the loop-in, the following modifications to existing 66 kV subtransmission lines would be necessary:

- Modify approximately 7 miles of the Chino-Corona-Pedley 66 kV Subtransmission Line by replacing the existing wood poles with light weight steel (LWS) poles replacing the existing conductor with 954 kcmil stranded aluminum conductor (954 SAC). Modify an additional 1 mile of the line by replacing the conductor with 954 SAC.
- Construct two new 66 kV underground subtransmission line segments using 3000 kcmil copper cable to extend the existing Chino-Corona-Pedley 66 kV Subtransmission Line approximately 340 feet into the Proposed Kimball Substation.
- Construct a new, approximately 0.5 mile long 66 kV subtransmission line segment using LWS poles and 954 SAC.
- Add a second 66 kV subtransmission line approximately 1 mile long to existing structures using 954 SAC.

The location of the subtransmission line modifications is shown on Figure 2 below.

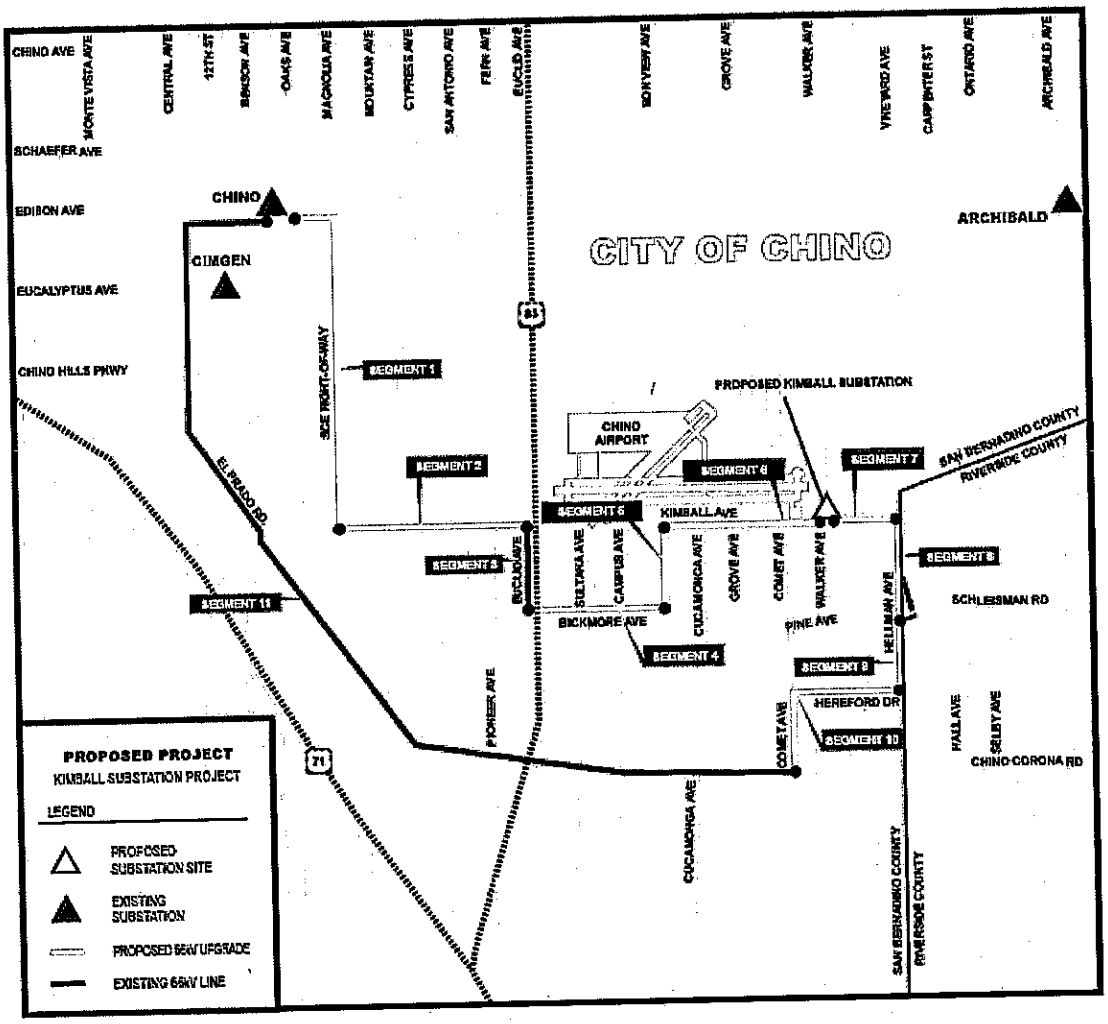

Figure 2. Proposed Subtransmission Line Modification in Ten Segments

The subtransmission line modifications are detailed below.

Segment 1. This segment is routed south from Chino Substation to the south side of Edison Avenue, east in existing utility right-of-way, and south to Kimball Avenue. Approximately 10,500 feet of conductor and 56 poles would be replaced along this segment.

Segment 2. This segment is routed east along the north side of Kimball Avenue to Euclid Avenue. Approximately 6,500 feet of conductor and 30 poles would be replaced along this segment.

Segment 3. This segment is routed south along the west side of Euclid Avenue to Bickmore Avenue. No modifications associated with the Proposed Project would be necessary on this segment.

Segment 4. This segment is routed east along the south side of Bickmore Avenue to Bon View Avenue (future Rincon Meadow Avenue). Approximately 6,400 feet of conductor and 10 poles would be replaced along this segment.

Segment 5. This segment is routed north on the west side of Bon View Avenue to Kimball Avenue. Approximately 2,600 feet of conductor and 10 poles would be replaced along this segment.

Segment 6. This segment is routed east on the north side of Kimball Avenue to Walker Avenue. Approximately 4,300 feet of conductor and 30 poles would be replaced along this segment. At the intersection of Walker Avenue and Kimball Avenue a tubular steel pole (TSP) riser would be installed to transition the overhead lines to underground cables. Two new 66kV underground lines would be extended approximately 600 feet from the TSP riser into Kimball Substation.

Segment 7. This segment is routed east along the north side of Kimball Avenue to Hellman Avenue. Approximately 2,200 feet of conductor and 15 poles would be replaced along this segment.

Segment 8. This segment is routed south along the west side of Hellman Avenue to Schleisman Avenue. Approximately 3,100 feet of conductor would be installed on poles that will be replaced prior to construction of the Proposed Project.

Segment 9. This is a new segment to be constructed along the west side of Hellman Avenue to Hereford Drive. Approximately 2,300 feet of new conductor and 9 new poles would be installed.

Segment 10. This segment is routed west along the north side of Hereford Drive to Comet Avenue then south to Chino-Corona Road. Approximately 4,800 feet of new conductor would be installed on existing structures.

In summary, the subtransmission modifications would result in a total of 160 new LWS poles and 8.5 miles of new 954 kcmil stranded aluminum conductor. One TSP riser would be installed at the intersection of Walker Avenue and Kimball Avenue to connect the overhead conductor to underground cables. The planned operating date for the proposed System is June 2009.

The total cost of the Proposed Project is approximately $13.3 million. Four percent of the Proposed Project cost is, therefore, about $ 532,000. SCE engineers added magnetic field reduction measures early in the design phase for this project. The total project cost, therefore, includes "low-cost" magnetic field reduction measures in the proposed designs.

This FMP includes only no-cost and low-cost magnetic field reduction measures for SCE's Proposed Substation Site and Subtransmission Line Routes. SCE's Proponent's Environmental Assessment (PEA) contains various substation site location alternatives. If any alternative substation site is chosen, a supplemental FMP will be prepared, along with an engineering design.

V. EVALUATION OF MAGNETIC FIELD REDUCTION MEASURES

Magnetic field management for this project is discussed in two parts. First, the Proposed Substation and associated field reduction measures are covered, and then the Proposed Subtransmission Lines are discussed.

A. Part One: Kimball 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 measures 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;
- Subtransmission lines and distribution lines entering and exiting the substation.

The Substation Checklist (Table 1) is used for evaluating the no-cost and low-cost measures considered for the Proposed Substation, the measures adopted, and reasons that certain measures were not adopted.

Table 1. Substation Checklist for Examining No-cost and Low-cost Magnetic Field Reduction Measures			
No.	**No-Cost and Low-Cost Magnetic Field Reduction Measures Evaluated for a Substation Project**	**Measures Adopted? (Yes/No)**	**Reason(s) if not Adopted**
1	Are transformers and air core reactors greater than 15 feet from the substation property line?	Yes	
2	Are switch racks, capacitor banks and busses greater than 8 feet from the substation property line?	Yes	
3	Are underground cable duct banks greater than 12 feet from the side of the property line?	Yes	
4	Are transfer and operating buses configured with the transfer bus facing the nearest property or fence line?.	Yes	

At this time, there are no schools within the California Department of Education's EMF setback distances[23] from the Proposed Substation. Undeveloped land in the vicinity of the Proposed Substation site is zoned as "Airport Development" because the site is immediately east of Chino Airport and near the glide path. Surrounding land is currently agricultural, with plans for new residential development in progress or in the near future.

The following phasing arrangements would be implemented for the Proposed Subtransmission Lines at the Proposed Substation underground entry:

- Chino – Kimball 66 kV and Chino – Cimgen – Kimball 66 kV Subtransmission Lines: A-B-C and C-B-A (or equivalent): top-to-bottom at the underground getaway.

B. Part Two: Subtransmission Lines Supplying Kimball Substation

The Proposed Substation would be supplied by the existing Chino-Corona-Pedley 66 kV Subtransmission Line. This subtransmission line would be looped into the

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[23] Power Line Setback Exemption Guidance - May 2006, California Department of Education.

Proposed Substation. To accomplish this loop-in, two new 66 kV line segments would be constructed underground from the Chino-Corona-Pedley 66 kV subtransmission line at the intersection of Kimball Avenue and Walker Avenue to the Proposed Substation. As a result of the loop-in, two new 66 kV subtransmission lines would be formed; the Chino-Kimball 66 kV Subtransmission Line and the Chino-Cimgen-Kimball 66 kV Subtransmission Line (Figure 2 on Page 16).

The following magnetic field reduction methods are applicable for an overhead subtransmission line designs such as for SCE's proposed line route:

1. Selecting taller poles;
2. Selecting pole-head configurations with less phase-to-phase distance or circuit-to-circuit distance;
3. Phasing proposed 66 kV circuit with respect to the adjacent transmission or subtransmission line(s) whenever practical.

After ten years of evaluating and implementing no-cost and low-cost magnetic field reduction measures for subtransmission line designs, SCE established "preferred" overhead 66 kV and 115 kV subtransmission line designs in 2004. These "preferred" designs incorporate the most effective "no-cost and low-cost" magnetic field reduction measures (such as pole-head configurations and taller poles). For overhead 66 kV subtransmission lines, SCE's "preferred" designs are as follows:

Table 2. Preferred Overhead 66 kV Subtransmission Line Design Criteria

	66 kV Overhead Construction	
	Single Circuit Design	Double Circuit Design

Table 2. Preferred Overhead 66 kV Subtransmission Line Design Criteria		
	66 kV Overhead Construction	
	Single Circuit Design	Double Circuit Design
Base Pole Height[24]	70 feet	75 feet
Base Pole-head Configuration	"Delta" or equivalent	"Double Circuit"
Minimum Clearance	35 feet	35 feet

The Proposed Subtransmission Lines supplying the Proposed Substation were divided in ten segments as shown on Figure 2 for the purpose of no-cost and low-cost analysis. The line segments and their respective 66 kV design characteristics are presented in Table 3. Line Segments 1 through 6 make up the route of the Proposed Chino-Kimball 66 kV Subtransmission Line, and Line Segments 7 through 10 make up a part of the route of the Proposed Chino-Cimgen-Kimball 66 kV Subtransmission Line.

For Line Segments 1 through 9, a 75-foot (9-10 feet in the ground) LWS pole with the triangle post insulator configuration would typically be used as shown on Figure 8. This design meets or exceeds SCE's preferred design as described in Table 2. This no-cost and low-cost design would be applied uniformly and equitably for Line Segments 1, 2, and 4 through 9. For a design comparison, the existing poles for Chino-Corona-Pedley 66 kV Subtransmission Line are typically 65 feet tall (about 9 feet in the ground). Thus, the proposed design is about 10 feet taller than existing poles. A two-dimensional magnetic field model of the proposed single-circuit portions of the Proposed Subtransmission Line is shown on Figure 3 (it is applicable to Line Segments 1 through 6).

For Line Segment 10, existing 75-foot LWS poles would be modified with back-to-back post insulators as shown on Figure 9. This design also meets or exceeds SCE's

[24] The base pole height includes the buried portion of the pole (typically 9 to 10 feet below the ground). Exceptions to the "preferred design" may be recommended by SCE's designer (i.e. transmission engineers, substation engineers, or planners) based on engineering & safety requirements. For example, if the proposed line needs to cross underneath existing power lines, the pole height and pole-head configuration may be changed from the "preferred design."

preferred design as described in Table 2. This no-cost and low-cost design would be applied uniformly and equitably for the Line Segment 10. The substation entry would be a double-circuit underground construction as shown on Figure 10.

In addition to the proposed designs described above, magnetic field reduction phasing would be implemented on Line Segments 1, 10, and at the substation entry as shown on Figure 4 through Figure 6 below (see Magnetic Models 3 through 7 in Appendix C for more information).

Table 3 below and Table 4 on Page 29 summarize the proposed changes with no-cost and low-cost magnetic field reduction measures added in to the proposed designs.

Table 3. Subtransmission Line Segments Assessed for Magnetic Field Reduction

Line Seg.	Locations	Existing Design	Proposed Design	Applicable Figures (Existing/Proposed)	Applicable Models (Existing/Proposed)
1	From Chino Substation to 230 kV ROW & Kimball Ave	65' Vert. Susp	75' Tri Post	11 / 8	None[25] / 1 6 / 4
2	From Line Segment 1 to Euclid Ave. & Kimball Ave,	65' Vert. Susp	75' Tri Post	11 / 8	None / 1
3	From Line Segment 2 to Euclid Ave. & Bickmore Ave.	*No modification associated with the Proposed Project would be necessary on this segment.*			
4	From Line Segment 3 to Bon View Ave. & Brickmore Ave.	60' Tri. Susp.	75' Tri Post	12 / 8	None / 1
5	From Line Segment 4 to Bon View Ave. & Kimball Ave	60' Tri. Susp	75' Tri Post	12 / 8	None / 1
6	From Line Segment 5 to Kimball Ave. & Walker Avenue	65' Vert. Susp	75' Tri Post	11 / 8	None / 1
Sub. Entry	From Line Segment 6 to the Proposed Substation	None		None / 8	N/A / 3
7	From the Proposed Substation to Kimball Ave. & Hellman Ave.	60' Tri. Susp	75' Tri Post	12 / 8	None / 2
8	From Line Segment 7 to Hellman Ave. & Schleisman Ave.	60' Tri. Susp	75' Tri Post	12 / 8	None / 2
9	From Line Segment 8 to Hellman Ave. & Hereford Drive	None	75' Tri Post	None / 8	None / 2

[25] "None" notation in this column reflects the existing idle 66 kV subtransmission line(s). The strength of magnetic field from this subtransmission line is, therefore, zero which reflects the existing condition.

Table 3. Subtransmission Line Segments Assessed for Magnetic Field Reduction					
Line Seg.	**Locations**	**Existing Design**	**Proposed Design**	**Applicable Figures** (Existing/Proposed)	**Applicable Models** (Existing/Proposed)
10	From Line Segment 9 to Hereford Drive & Comet Ave. and then to Chino Corona Rd. & Comet Ave.	75' Vert. Post – Single	75' B-B Post – Phased	13 / 9	7 / 5

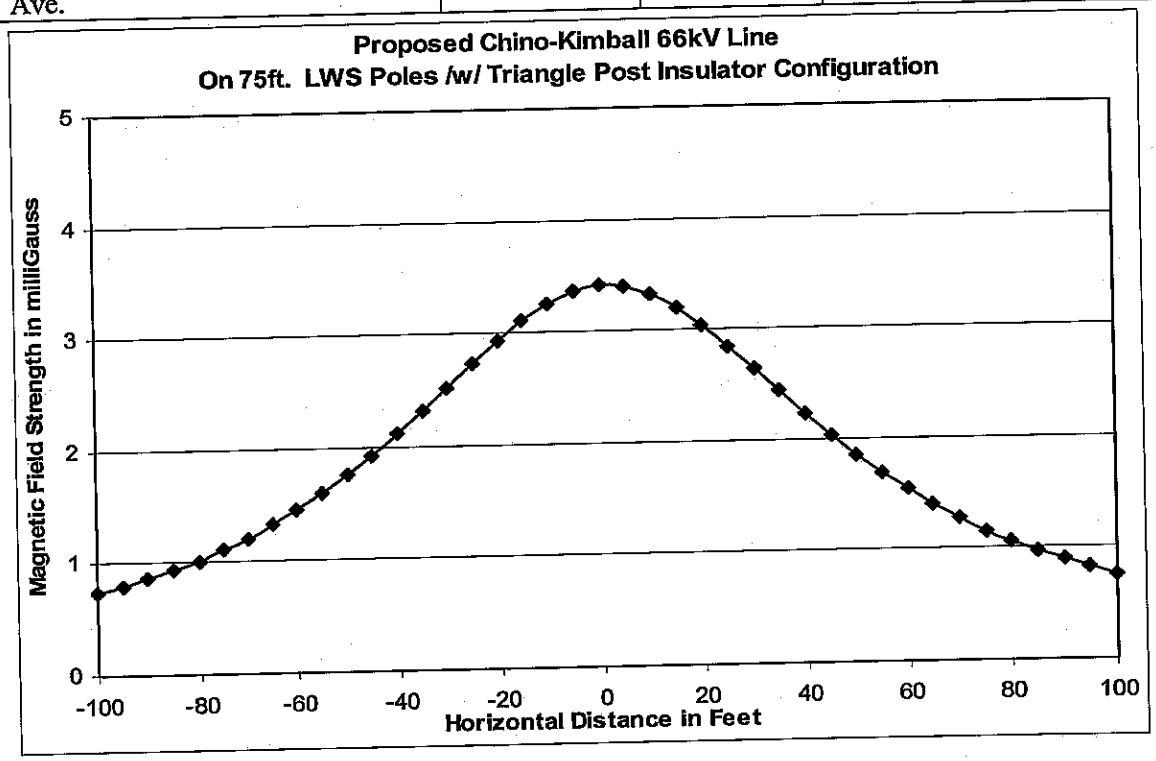


Figure 3. Proposed 75 foot. LWS Poles with Triangle Post insulator Configuration for Line Segments 1 through 6

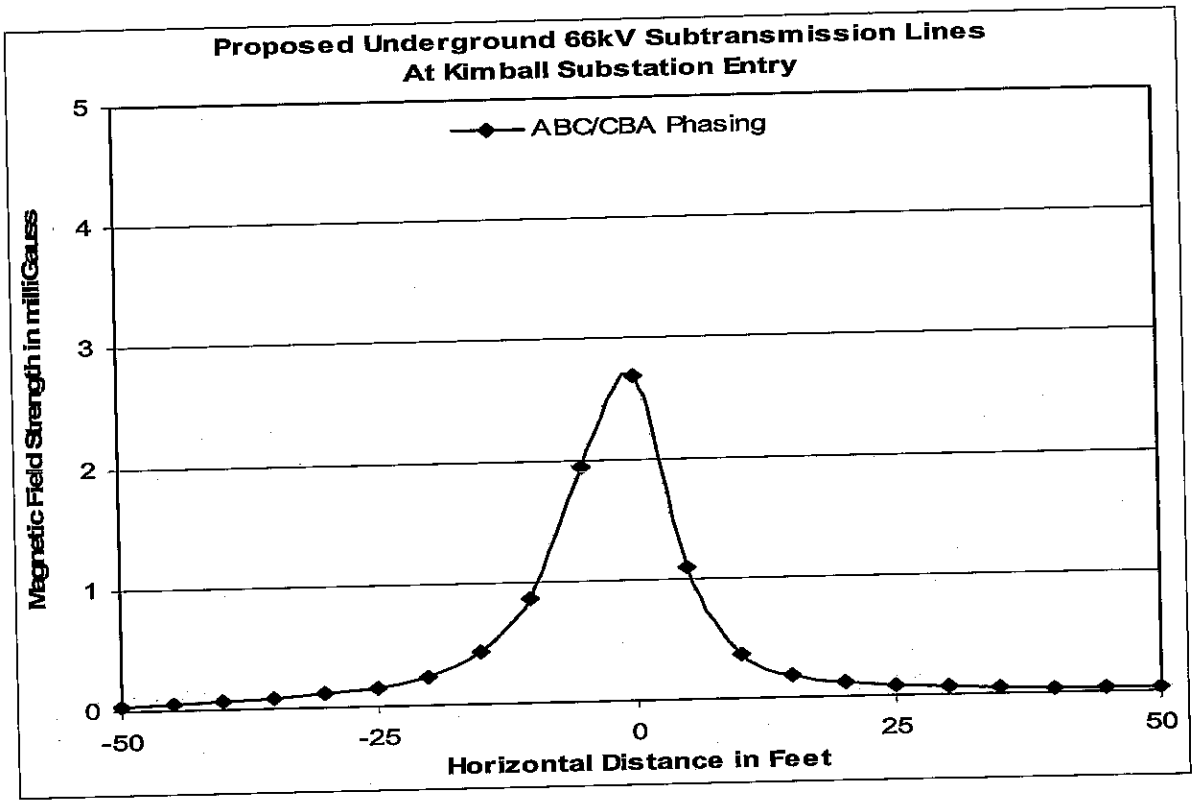


Figure 4. Proposed Substation Entry 66 kV Underground Subtransmission Lines

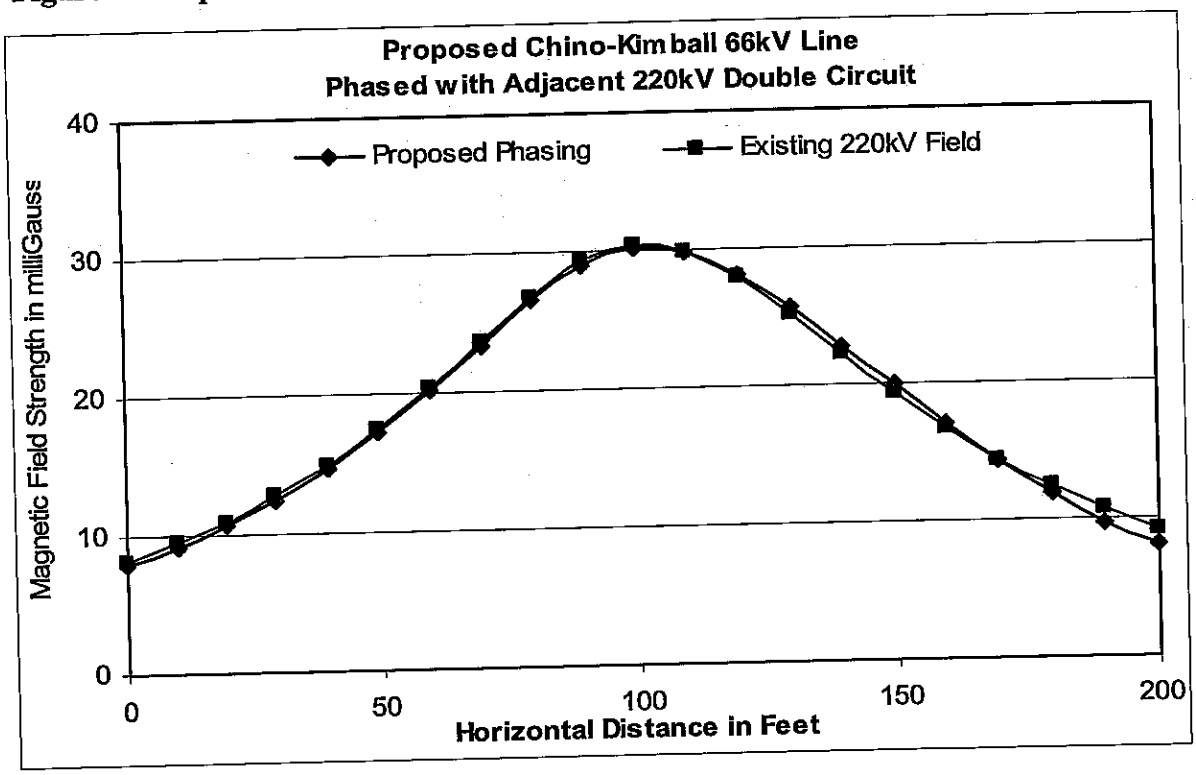


Figure 5. The Effect of Phasing at Line Segment 1 – East of California Institution for Men

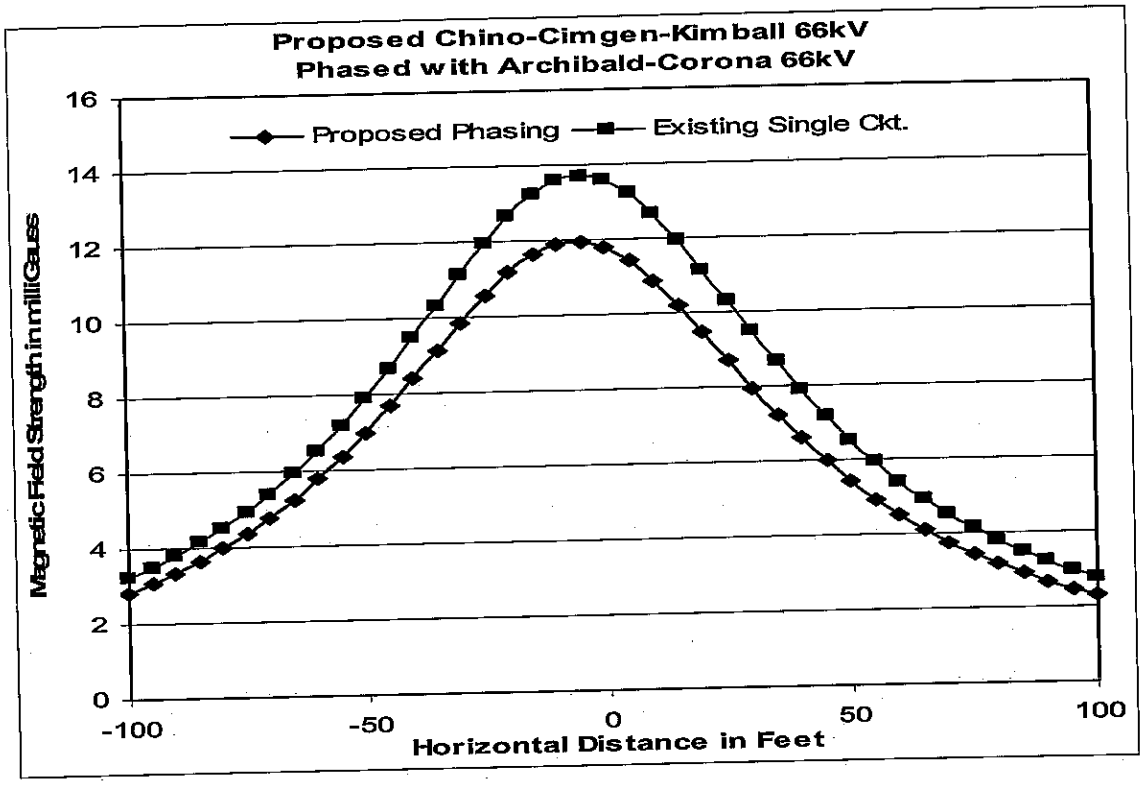


Figure 6. The Effect of Phasing at Line Segment 10 – Hellman Ave. and Hereford Dr.

Applicable magnetic field models can be found in Appendix C of this FMP. The existing Chino-Corona-Pedley 66 kV Subtransmission Line is an idle subtransmission line and would be remain as idle until the Proposed Project becomes operational. Thus, the magnetic field levels from this line, until the Proposed Subtransmission Lines become energized, are zero. The magnetic field models, therefore, mainly reflect the proposed designs when the Proposed Project becomes operational.

There are no existing or planned public schools, licensed daycare, or hospitals adjacent to the Proposed 66 kV Subtransmission Line.

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.

Proposed Kimball Substation:

- The 66 kV major substation components (such as transformers and switch-racks & buses) would meet or exceed the recommended setback distances from the substation fence or property line (see Figure 7), and the Proposed Subtransmission Lines supplying the substation would be phased for magnetic field reduction.

Rebuilt, Upgraded or New Subtransmission Lines:

- Upgrades to 75-foot LWS poles for the Proposed Chino-Kimball 66 kV Subtransmission Line route (Line Segments 1, 2, and 4 through 6) and for the proposed new 66 kV overhead section of the Chino-Cimgen-Kimball 66 kV (Line Segments 7 through 9).
- Phasing for magnetic field reduction on the Proposed Chino-Kimball 66 kV Subtransmission Line at Line Segment 1 with respect to the existing transmission lines at east of the California Institution for Men. Recommended phasing: A-B-C top to bottom.
- Phasing for magnetic field reduction of the Proposed Chino-Cimgen-Kimball 66 kV Subtransmission Line in double-circuit with the existing Archibald-Chino-Corona 66 kV Subtransmission Line on Line Segment 10. Recommendation: A-B-C / A-B-C, top to bottom.
- Phasing for magnetic field reduction on both Proposed 66 kV Underground Subtransmission Lines at the substation entry point. Recommendation: A-B-C / C-B-A, top to bottom (or equivalent reverse-phasing relationship).

Other measures were not selected because:

- The measure does not reduce the magnetic fields by at least 15%
- The measure does not meet SCE's engineering and safety requirements
- The substation is an unmanned facility
- The measure is not a "no- and low-cost" option

SCE's plan for applying the above no-cost and low-cost magnetic field reduction measures uniformly and equitably for the entire 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, and with applicable national and state safety standards for new electric facilities.

Table 4. No-Cost and Low-Cost Magnetic Field Reduction Measures Summary

Line Segment	Location	Land Use [26]	MF Reduction Measures Considered	Estimated Cost to Adopt	Measure(s) Adopted? (Yes/No)	Reason(s) if not adopted
1	From Chino Substation to 230 kV ROW & Kimball Ave	C, I, P, G, A	• Taller poles • Pole-head configuration • Phase Circuit w/ 230 kV	• Low-Cost • No-Cost • No-Cost	• Yes • Yes • Yes	
2	From Line Segment 1 to Euclid Ave. & Kimball Ave,	A, C, I	• Taller poles • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
3	From Line Segment 2 to Euclid Ave. & Bickmore Ave.	A, R	No modification associated with the Proposed Project would be necessary on this segment.			
4	From Line Segment 3 to Bon View Ave. & Brickmore Ave.	A, R	• Taller poles • Pole-head configuration	• No-Cost • No-Cost	• Yes • Yes	
5	From Line Segment 4 to Bon View Ave. & Kimball Ave	A, R	• Taller poles • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
6	From Line Segment 5 to Kimball Ave. & Walker Avenue	A, C, R	• Taller poles • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
Substation Entry	From Line Segment 6 to The Proposed Substation	C, A, R	• Phase U/G Circuits	• No-Cost	• Yes	
7	From the Proposed Substation to Kimball Ave. & Hellman Ave.	A, R	• Taller poles • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
8	From Line Segment 7 to Hellman Ave. & Schleisman Ave.	A, R	• Taller poles, • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
9	From Line Segment 8 to Hellman Ave. & Hereford Drive	A, R	• Taller poles, • Pole-head configuration	• Low-Cost • No-Cost	• Yes • Yes	
10	From Line Segment 9 to Hereford Drive & Comet Ave. and then to Chino Corona Rd. & Comet Ave.	A, R	• Pole-head configuration • Phase Circuit	• No-Cost • No-Cost	• Yes • Yes	

[26] Land usage codes are as follows: S= public schools, D= licensed day-care, H= hospitals, R= residential, C= commercial, I= industrial, P= park/recreational, A= agricultural, G= government, and U=undeveloped land

Note for Table 4:

- The proposed single-circuit LWS with triangle post insulator configuration design applies to Line Segments 1 through 9.
- The proposed double-circuit underground design applies to the Proposed Substation entry.
- The proposed double-circuit LWS with back-to-back post insulator configuration design applies to the Line segment 10.

VII. APPENDIX A: FIGURES FOR SUBSTATION AND SUBTRANSMISSION DESIGNS

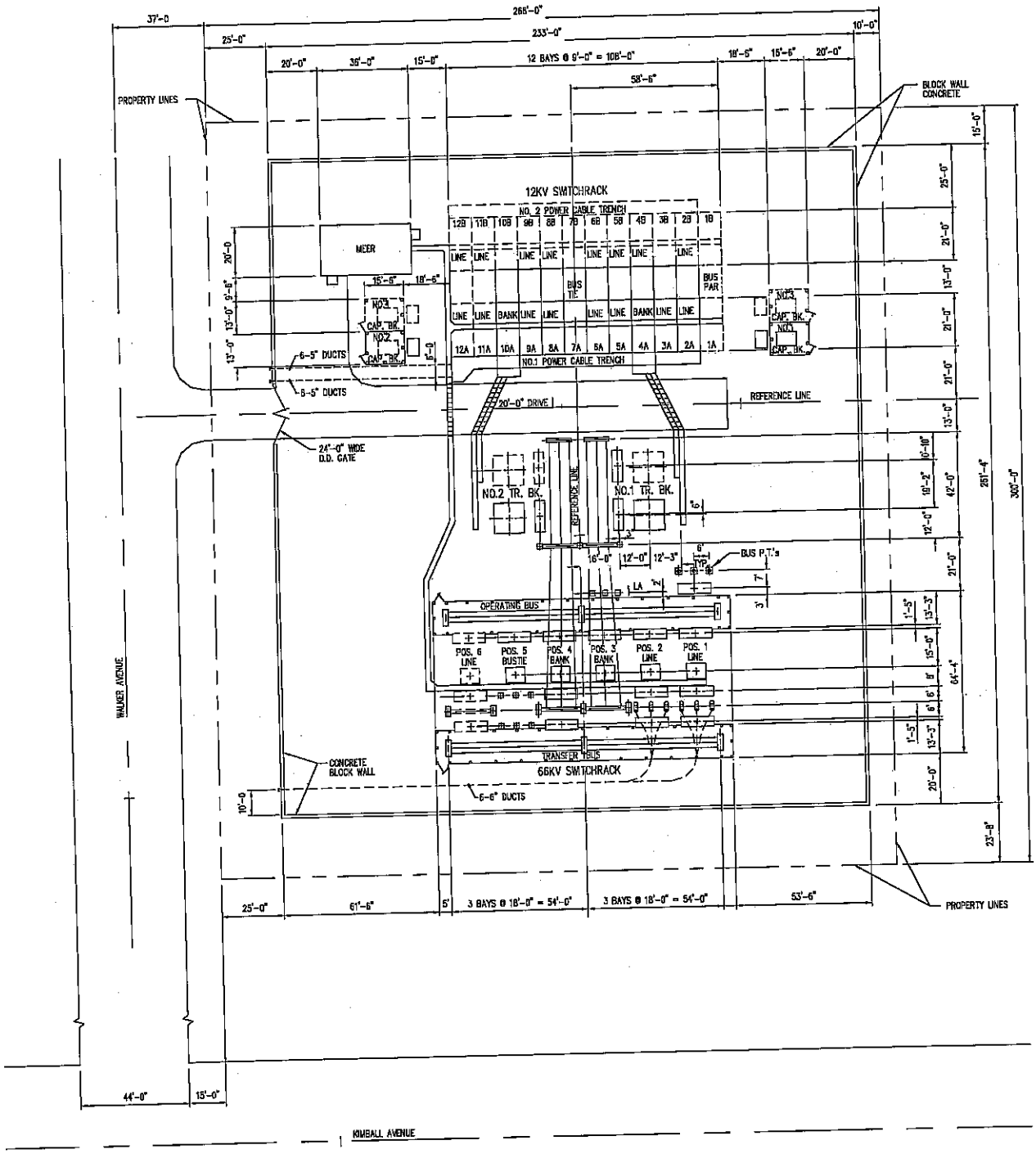


Figure 7. Proposed Kimball Substation Plot Plan

A. Proposed Subtransmission Line Designs

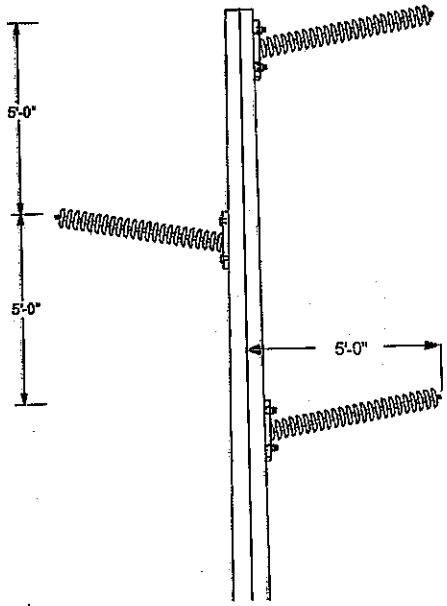


Figure 8. Typical LWS 66 kV Tri-Post

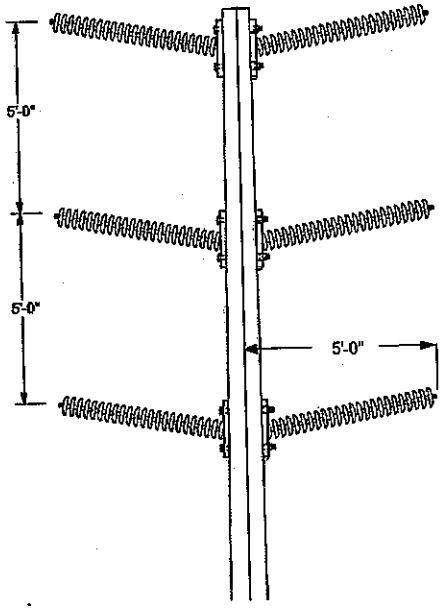


Figure 9. TO352 LWS Back-to-Back Post

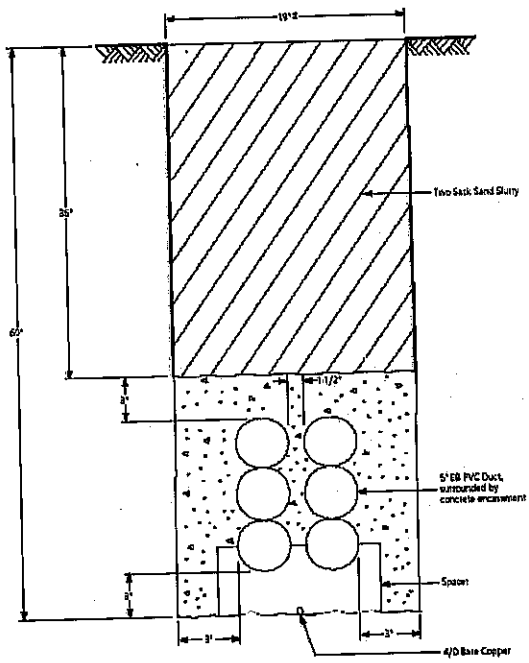


Figure 10. Typical 66 kV Underground Duct Bank

B. Existing Subtransmission Line Designs

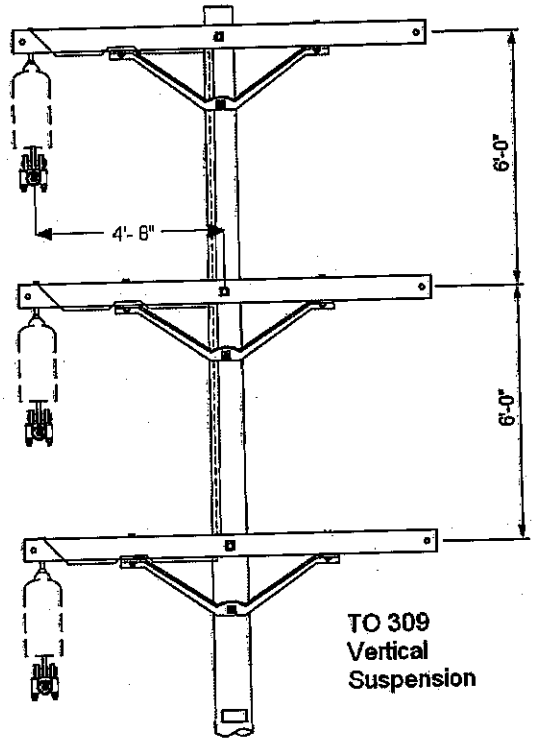


Figure 11. Typical TO309 Single Vertical Suspension

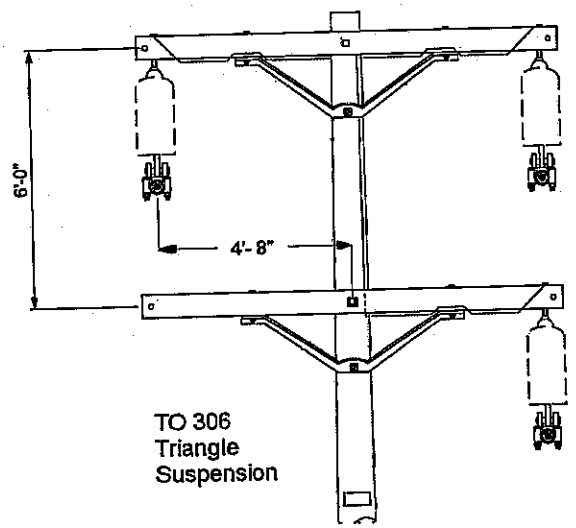


Figure 12. Typical TO306 Single Triangle Suspension

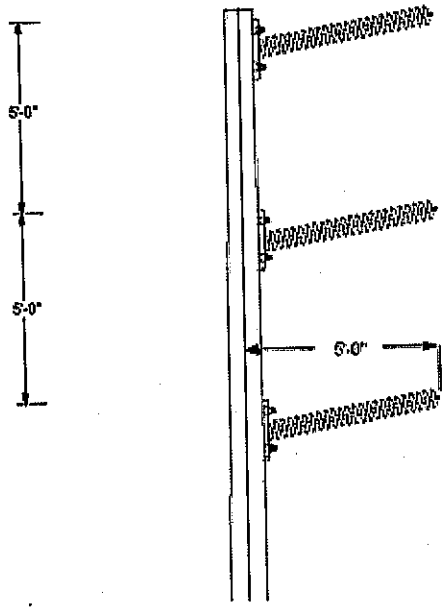


Figure 13. LWS Single Vertical Post

VIII. APPENDIX B: TWO-DIMENSIONAL MAGNETIC FIELD MODEL ASSUMPTIONS AND LOADING CONDITIONS

SCE's "Fields"[27] is used to model the magnetic field characteristics of the various subtransmission line designs and magnetic field reduction measures considered. Two-dimensional magnetic field modeling assumptions include:

- All subtransmission lines will be considered operating at forecasted loads and all conductors are straight and infinitely long;
- 4.5 feet of sagging for all 66 kV overhead subtransmission line designs;
- All structures or poles are located next to each other;
- Magnetic field strength is calculated at a height of three feet above ground (assuming flat terrain);
- Resultant magnetic fields are being used;
- All line loadings are balanced (i.e. neutral or ground currents are not considered);
- Terrain is flat;
- Dominant power flow directions are being used; and
- Forecasted peak loading data is based upon scenarios representing load forecasts for the year 2009. The forecasting data is subject to change depending upon availability of generations, load increase, changes in load demand and by many other factors. All transmission and subtransmission lines will be considered operating at year 2009 forecasted loads (see Table 5 below)

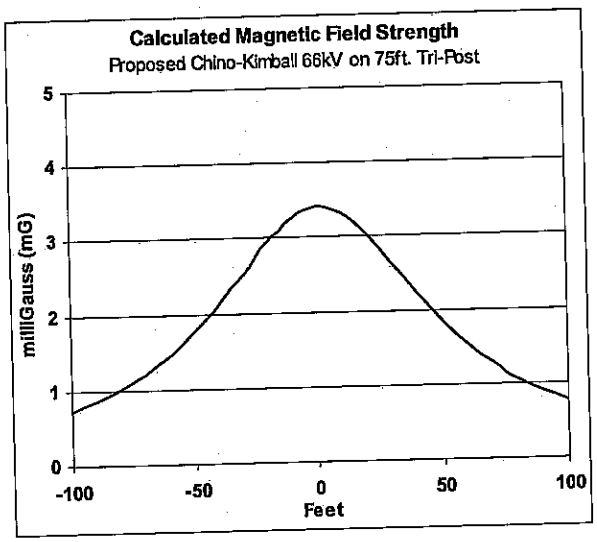
27 Kim, C., Fields for XP Version 3.5, 2003.

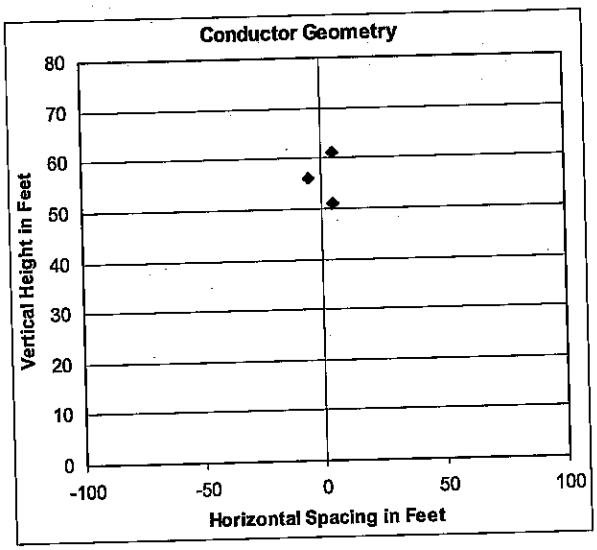
Table 5. Forecasted Peak Loading Conditions and Power Flow Directions		
Line Name	**Current (unit: Amp)**	**Power Flow Direction**
Proposed Subtransmission Lines		
Chino – Kimball 66 kV	110	Chino to Kimball
Chino – Cimgen – Kimball 66 kV	95	Chino to Kimball
Existing Transmission and Subtransmission Lines		
Chino – Viejo 230 kV	500	Chino to Viejo
Chino – Serrano 230 kV	150	Chino to Serrano
Archibald – Chino – Corona 66 kV	670	Archibald to Corona
Existing Idle Subtransmission Lines		
Chino – Corona – Pedley 66 kV	0	N/A
Archibald-Chino-Corona 66 kV (Cimgen Leg)	0	N/A

IX. APPENDIX C: MAGNETIC FIELD MODELS

A. Model 1: Proposed Chino-Kimball 66 kV Subtransmission Line on 75 foot LWS Poles with Triangle Post Insulators

Main title: Proposed Chino-Kimball 66 kV Line
Location: Line Segments 1, 2, 4, 5, and 6
Description: 75 foot. LWS Poles with Triangle Polymer Post
Conditions: Normal Weather 2009 Load Forecast Estimate





Phase Conductor Data: Number of Phases: 3

Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 CHOKBL[28]	5	61	110	30
2 CHOKBL	-5	56	110	150
3 CHOKBL	5	51	110	270

Resultant (Bp) Magnetic Field Values

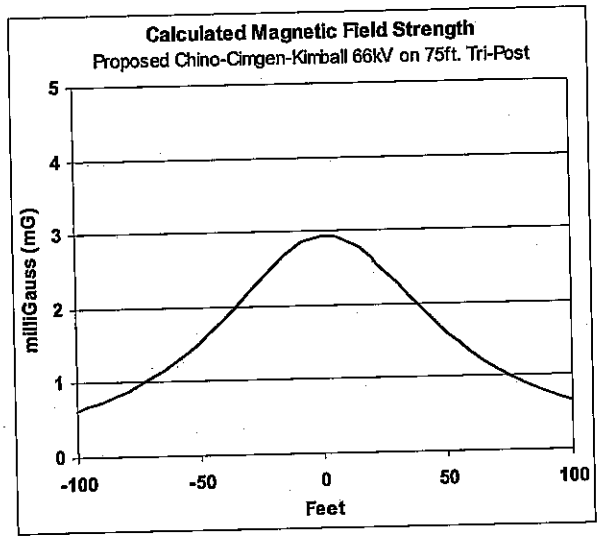
Distance (ft)	Bp (mG)
-100	0.73
-95	0.79
-90	0.86
-85	0.93
-80	1.01
-75	1.11
-70	1.21
-65	1.33
-60	1.45
-55	1.6
-50	1.76
-45	1.93
-40	2.12
-35	2.32
-30	2.52
-25	2.73
-20	2.93
-15	3.11
-10	3.26
-5	3.36
0	3.41
5	3.4
10	3.33
15	3.21
20	3.04
25	2.85
30	2.65
35	2.44
40	2.23
45	2.04
50	1.86
55	1.69
60	1.54
65	1.4
70	1.28
75	1.16
80	1.07
85	0.98
90	0.9
95	0.83
100	0.76

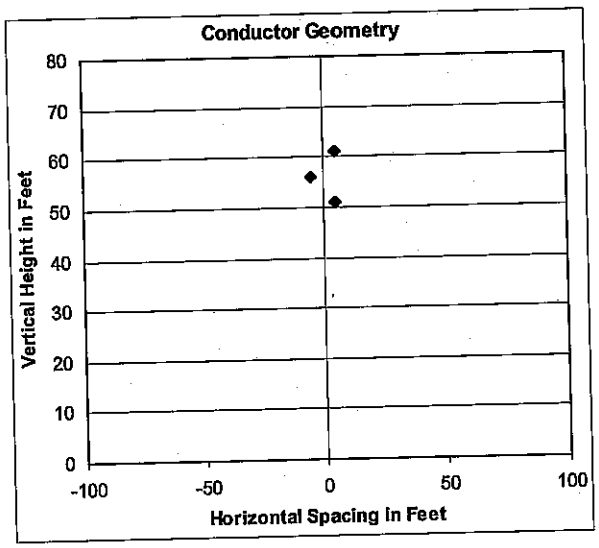
[28] CHOKBL = Proposed Chino-Kimball 66 kV Line

B. Model 2: Proposed Chino-Cimgen-Kimball 66 kV Subtransmission Line on 75 foot LWS Poles with Triangle Post Insulators

Main title:	Proposed Chino-Cimgen-Kimball 66 kV Line
Location:	Line Segments 7, 8, and 9
Description:	75 foot. LWS Poles with Triangle Polymer Post
Conditions:	Normal Weather 2009 Load Forecast
Estimate	

Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 CHCMKB[29]	5	61	95	30
2 CHCMKB	-5	56	95	150
3 CHCMKB	5	51	95	270





Resultant (Bp) Magnetic Field Values

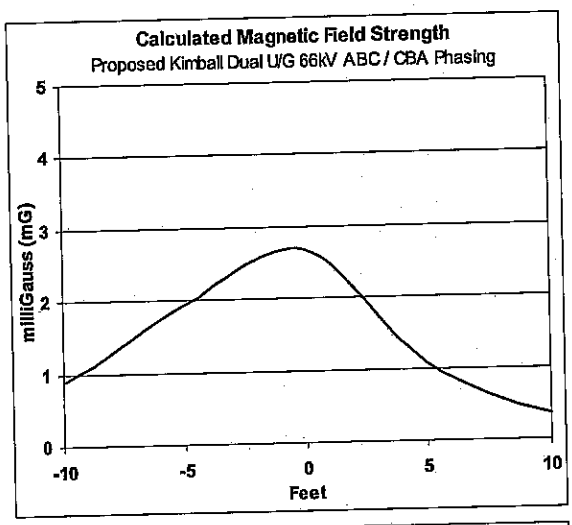
Distance (ft)	Bp (mG)
-100	0.63
-95	0.68
-90	0.74
-85	0.8
-80	0.88
-75	0.96
-70	1.05
-65	1.14
-60	1.26
-55	1.38
-50	1.52
-45	1.67
-40	1.83
-35	2
-30	2.18
-25	2.36
-20	2.53
-15	2.69
-10	2.81
-5	2.9
0	2.94
5	2.93
10	2.87
15	2.77
20	2.63
25	2.46
30	2.29
35	2.11
40	1.93
45	1.76
50	1.6
55	1.46
60	1.33
65	1.21
70	1.1
75	1.01
80	0.92
85	0.84
90	0.78
95	0.71
100	0.66

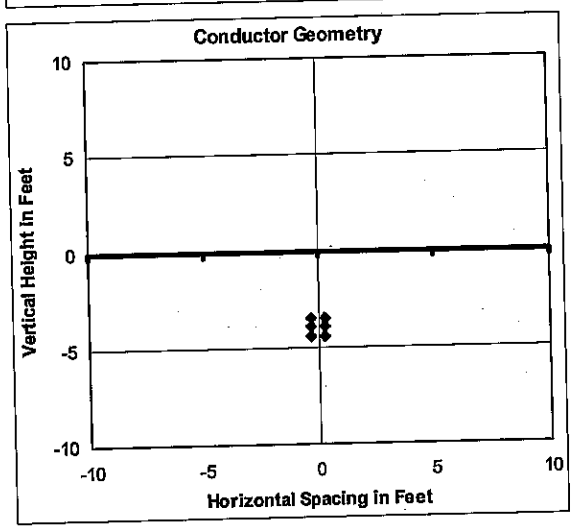
Phase Conductor Data: Number of Phases: 3

[29] CHCMKB = Proposed Chino-Cimgen-Kimball 66 kV Line

C. Model 3: Proposed Chino-Kimball and Chino-Cimgen-Kimball 66 kV Subtransmission Lines in Underground 66 kV Duct – At Substation Entry

Main title: Proposed Kimball Sub. Underground 66 kV
Location: N/O Kimball & W/O Walker- Substation
Entry Description: U/G Dual 66 kV Duct





Phase Conductor Data — Number of Phases: 6

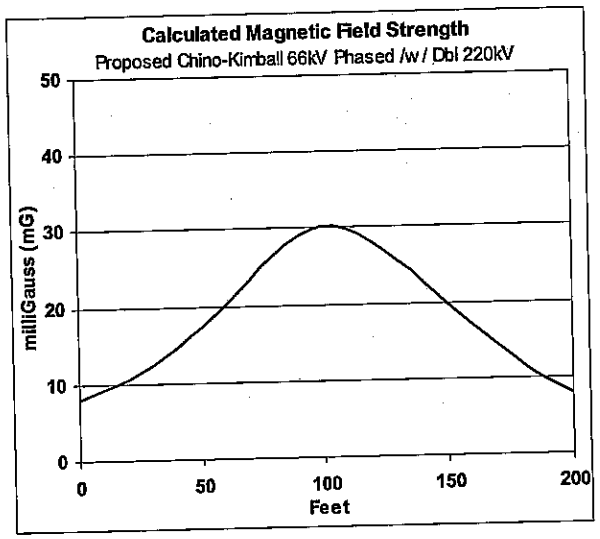
Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 CHOKBL	-0.29	-3.48	110	30
2 CHOKBL	-0.29	-3.95	110	150
3 CHOKBL	-0.29	-4.41	110	270
4 CHCMKB	0.29	-3.48	95	270
5 CHCMKB	0.29	-3.95	95	150
6 CHCMKB	0.29	-4.41	95	30

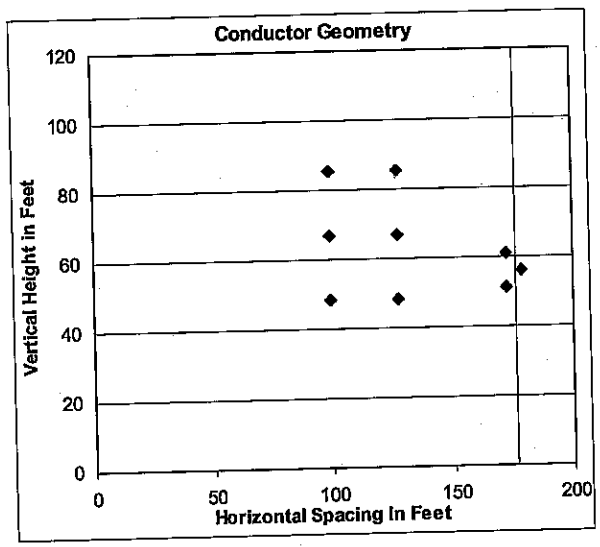
Resultant (Bp) Magnetic Field Values

Distance (ft)	Bp (mG)
-50	0.04
-45	0.05
-40	0.06
-35	0.08
-30	0.11
-25	0.15
-20	0.24
-15	0.43
-10	0.87
-5	1.94
0	2.69
5	1.09
10	0.37
15	0.19
20	0.12
25	0.09
30	0.06
35	0.05
40	0.04
45	0.03
50	0.03

D. Model 4: Proposed Chino-Kimball 66 kV Subtransmission Line on 75 foot LWS Poles with Triangle Poly Post Insulators in 230 kV ROW E/O CA Institution for Men – Proposed Phasing

Main title: Proposed Chino-Kimball 66 kV Line -Sec A2
Location: Line Segment 1
Description: 75 foot. LWS Poles with Triangle Polymer Post -
Phased with adjacent 230 kV Lines





Phase Conductor Data — Number of Phases: 9

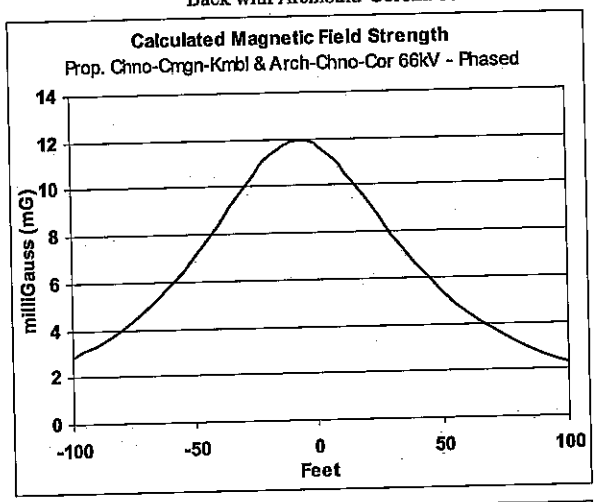
Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 VIEJO	100	85.5	500	240
2 VIEJO	100	67	500	0
3 VIEJO	100	48.5	500	120
4 SERRANO	128	85.5	150	240
5 SERRANO	128	67	150	120
6 SERRANO	128	48.5	150	0
7 CHOKBL	171	61	110	30
8 CHOKBL	181	56	110	150
9 CHOKBL	171	51	110	270

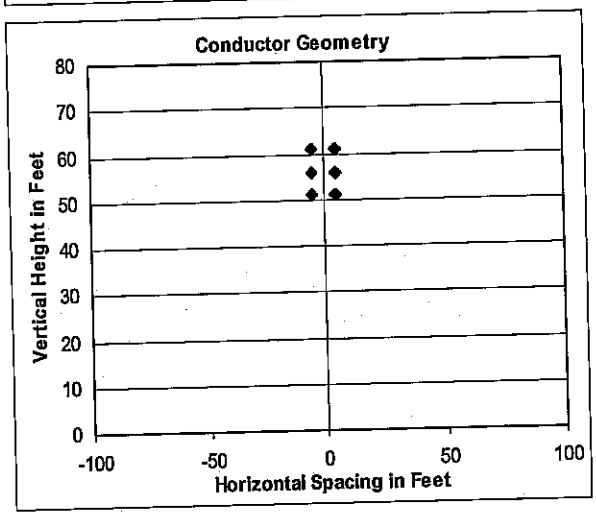
Resultant (Bp) Magnetic Field Values

Distance (ft)	Bp (mG)
0	7.97
10	9.19
20	10.67
30	12.46
40	14.61
50	17.17
60	20.11
70	23.32
80	26.48
90	29
100	30.24
110	29.87
120	28.16
130	25.66
140	22.84
150	19.96
160	17.12
170	14.37
180	11.83
190	9.68
200	8.02

E. Model 5: Proposed Chino-Cimgen-Kimball 66 kV Subtransmission Line on 75 foot LWS Poles in Double-Circuit with Archibald-Corona 66 kV Subtransmission Line

Main title: Proposed Chino-Cimgen-Kimball 66 kV
Location: Line Segment 10 - Hereford at Hellman and Chino-Corona Road.
Description: 75 foot. Double Circuit TO352 66 kV Back-to-
Back with Archibald-Corona 66





Phase Conductor Data — Number of Phases: 6

Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 ARCCOR[30]	-5	61	-670	30
2 ARCCOR	-5	56	-670	150
3 ARCCOR	-5	51	-670	270
4 CHCMKB	5	61	95	30
5 CHCMKB	5	56	95	150
6 CHCMKB	5	51	95	270

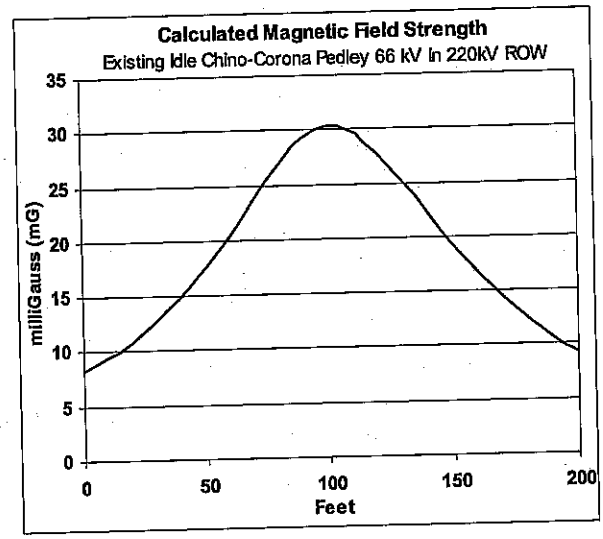
Resultant (Bp) Magnetic Field Values

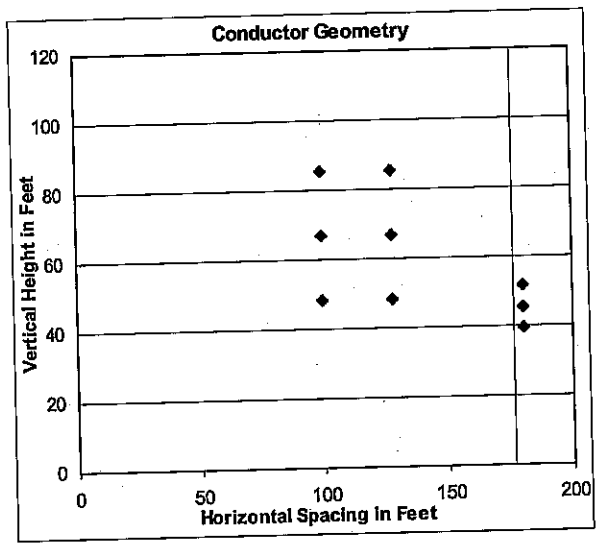
Distance (ft)	Bp (mG)
-100	2.83
-95	3.07
-90	3.34
-85	3.64
-80	3.98
-75	4.36
-70	4.78
-65	5.25
-60	5.77
-55	6.35
-50	6.98
-45	7.67
-40	8.39
-35	9.13
-30	9.87
-25	10.57
-20	11.17
-15	11.64
-10	11.91
-5	11.97
0	11.81
5	11.43
10	10.88
15	10.21
20	9.47
25	8.71
30	7.97
35	7.25
40	6.59
45	5.99
50	5.44
55	4.94
60	4.5
65	4.11
70	3.75
75	3.44
80	3.16
85	2.91
90	2.68
95	2.48
100	2.3

[30] ARCCOR = Proposed Archibald-Corona 66 kV Line

F. Model 6: Existing Idle Chino-Corona-Pedley 66 kV Subtransmission Line in 230 kV ROW East of CA Institution for Men

Main title: Existing Idle Chino-Corona-Pedley 66 kV
Location: Line Segment 1 - East Of CA Institution for Men & S/O Edison Ave.
Description: Idle Chino-Corona-Pedley 66 kV Line adjacent to 220 kV double circuit





Phase Conductor Data: Number of Phases: 9

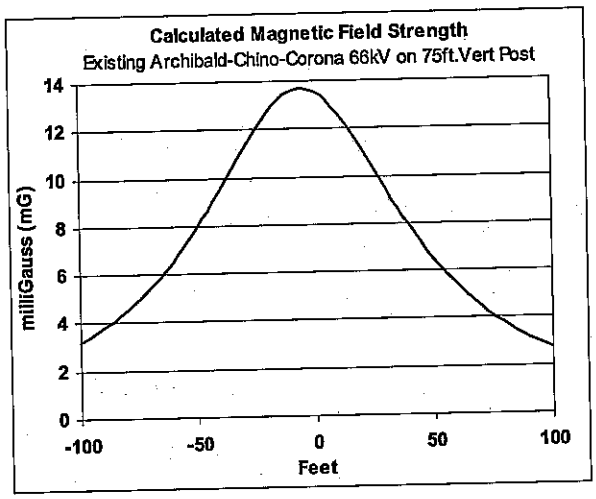
Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 VIEJO	100	85.5	500	240
2 VIEJO	100	67	500	0
3 VIEJO	100	48.5	500	120
4 SERRANO	128	85.5	150	240
5 SERRANO	128	67	150	120
6 SERRANO	128	48.5	150	0

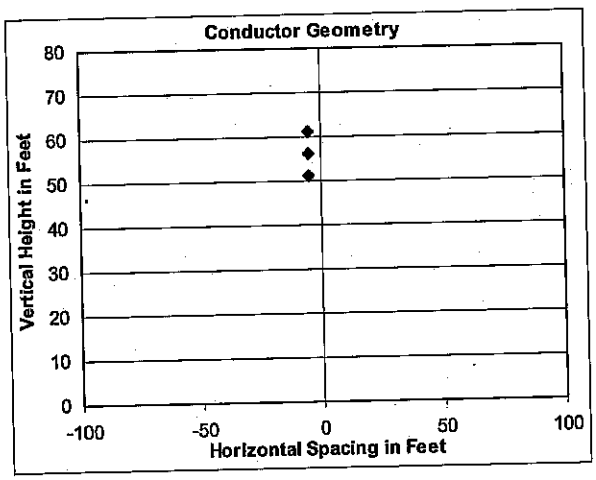
Resultant (Bp) Magnetic Field Values

Distance (ft)	Bp (mG)
0	8.16
10	9.41
20	10.91
30	12.72
40	14.9
50	17.47
60	20.43
70	23.66
80	26.8
90	29.27
100	30.4
110	29.86
120	27.94
130	25.22
140	22.24
150	19.33
160	16.67
170	14.33
180	12.33
190	10.64
200	9.22

G. Model 7: Existing Archibald-Chino-Corona 66 kV Subtransmission Line on 75 foot Single TO352 Vertical Post Insulators

Main title: Existing Achibald-Chino-Corona 66 kV
Location: Line Segment 10 - Hereford at Hellman-N/O Chino-Corona Road.
Description: 75 foot. Single Circuit Modified TO352 66 kV Vertical Post





Phase Conductor Data — Number of Phases : 3

Conductor /Bundle	X Axis (feet)	Y Axis (feet)	Amps	Phase Angle
1 ARCHCO[31]	-5	61	-670	30
2 ARCHCO	-5	56	-670	150
3 ARCHCO	-5	51	-670	270

Resultant (Bp) Magnetic Field Values

Distance (ft)	Bp (mG)
-100	3.21
-95	3.49
-90	3.79
-85	4.13
-80	4.51
-75	4.94
-70	5.41
-65	5.94
-60	6.53
-55	7.18
-50	7.89
-45	8.66
-40	9.47
-35	10.31
-30	11.15
-25	11.95
-20	12.65
-15	13.21
-10	13.57
-5	13.7
0	13.57
5	13.21
10	12.65
15	11.95
20	11.15
25	10.31
30	9.47
35	8.66
40	7.89
45	7.18
50	6.53
55	5.94
60	5.41
65	4.94
70	4.51
75	4.13
80	3.79
85	3.49
90	3.21
95	2.97
100	2.75

[31] ARCHCO = Existing Archibald-Chino-Corona 66 kV Line