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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to update the Commission's policies and procedures related to electromagnetic fields emanating from regulated utility facilities

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PUBLIC UTILITIES COMMISSION
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RULEMAKING 04-07-

ORDER INSTITUTING RULEMAKING

I. Summary

We open this rulemaking to determine if there are improvements that should be made to the Commission's existing rules and regulations concerning electromagnetic fields (EMFs) associated with electric transmission lines or other utility electric facilities. In a number of electric transmission and substation projects recently approved by the Commission there is consistently strong public interest in EMF issues. To address the public concern regarding exposure to EMFs, the Commission has required that the electric utilities develop an EMF Management Plan for each project that implements the Commission's adopted 1993 EMF policy. Generally, the Commission sanctions a "Prudent Avoidance" or "low-cost/no-cost" policy towards mitigating EMF impacts resulting from approved electric facilities. Given the public interest that has been sparked by the research findings recently submitted to the Commission by the California Department of Health Services (DHS) and that the Commission's interim EMF policy has not been updated in over ten years, it is now appropriate to determine if the Commission should improve its existing policy and/or improve implementation of the policy.

II. Background

In 1991 the Commission opened an investigation (I.91-01-012) in response to concerns raised by members of the public about the possible health effects of EMFs emanating from existing and planned utility facilities. The concerns were prompted by inconclusive research results, some of which suggested a link of probable risk between EMF exposure and various illnesses, and others of which failed to establish such a link.

In 1993, in Decision (D.) 93-11-013, the Commission found that while the evidence of direct harm from EMFs was not conclusive, there was enough public concern to warrant further review (D.93-11-013, p.3.). Accordingly, the Commission adopted several EMF policies and programs to address the public concern, despite the scientific uncertainty. The Commission required the utilities to undertake no-cost EMF mitigation measures and implement low-cost mitigation measures to the extent approved as part of a project's certification process. "Low-cost" was defined to be within the range of 4% of the total project cost but the Commission specified that this 4% benchmark is not an absolute cap. (D.93-11-013, p.13.)

The Commission found that for a mitigation measure to be implemented, it should achieve some noticeable reduction in EMF exposure, but declined to adopt a specific goal for EMF reduction, pending further scientific evidence. (D.93-11-013, p.15.) Workshops were held and utilities developed EMF design guidelines for new transmission facilities. The Commission also adopted several EMF measurement, education, and research programs and chose the California Department of Health Services (DHS) to manage the education and research programs. The Commission declined to establish a measurement of EMF exposure that would be harmful to public health until there was a firm scientific

basis for adopting any particular standard. (D.93-11-013, p.11.) To date, it has been determined that there is a potential EMF source mix resulting from potential exposures from living near power lines, from the internal wiring of homes, and from common household appliances¹ (2002 DHS Report, p. 11.)

III. Existing Scientific Research on EMF

While a direct link between exposure to EMFs and human health effects has yet to be proven, several studies undertaken since the Commission decision in 1993 have conclusions that have prompted additional public concern. For example, the National Institutes of Environmental Health Services Working Group (NIEHS), British National Radiological Protection Board (NRPB), and the International Agency for Research on Cancer (IARC)² all suggest that there is a possibly a weak link between exposure to EMFs and childhood leukemia. The IARC and the NIEHS panels determined that there is not conclusive proof to demonstrate a relationship between exposure to EMFs and childhood brain cancer, as well as breast cancer (both female and male). In general, these panels are inclined to embrace biophysical studies that tend to be more skeptical of a possible link between exposure to a magnetic field and potential biological effects. These panels do accept numerous epidemiological studies which support the general conclusion that EMFs are a possible carcinogen.

¹ For example, a person could be exposed to EMFs from appliances such as electric blankets, washing machines, microwaves, televisions and hair dryers.

² The World Health Organization's IARC, has a four-point classification of a substance's degree of carcinogenicity: not carcinogenic, indeterminable, possible carcinogenic, and probably carcinogenic. The IARC rates EMFs as "possible carcinogenic" but also includes gasoline exhaust, styrofoam and coffee in that same classification of risk.

IV. DHS Report

In 2002, pursuant to I.91-01-012, DHS released its final report reviewing scientific studies on the health effects of EMF exposure. The findings have caused controversy, and there is no consensus among the three scientists regarding their conclusions. By reviewing numerous epidemiological studies as well as by using a “Qualitative Bayesian Approach”³ the panel of DHS scientists found that EMF exposure can, to some degree, correlate with some increased risk of childhood leukemia, adult brain cancer, Lou Gehrig’s Disease, and miscarriage (see Appendix A and Appendix B.) The three DHS scientists also differed in their opinions concerning the connection of EMFs with other diseases. For example, one scientist was “prone to believe” and two were “close to the dividing line between believing and not believing” that EMFs could cause some degree of increased risk for adult leukemia. All three were undecided about the role of EMFs in the risk of suicide. The three scientists were inclined to believe that EMF exposure does not cause an increased risk of breast cancer, heart disease, Alzheimer’s disease, or depression. They strongly believed that EMFs do not increase the risk of birth defects or lower birth weight, and that EMFs are not a universal carcinogen (see Appendix C).

It should be noted that the three DHS scientists’ conclusions regarding the potential link between EMF exposure and associated health effects conflict with other scientific panels such as the NIEHS, IARC, and the NRPB to varying degrees (2002 Final DHS Report). One explanation for this disagreement

³ The Qualitative Bayesian Approach was used by the three DHS scientists to explain their judgments regarding each purported health impact from human exposure to EMFs. It acknowledges that each reviewer may have had a pre-existing viewpoint about the certainty of each potential health effect from exposure to EMFs which may be later revised based on the reviewer’s subsequent review of a scientific study.

regarding human health effects from EMF exposure is that the three DHS scientists gave credence to evidence that links adult brain cancer and miscarriage, whereas the other scientific panels considered this evidence inappropriate. Essentially, the DHS reviewers have more confidence in epidemiological data than animal or mechanistic studies, which they considered to have methodological flaws. As noted earlier, these types of studies tend to suggest a weak correlation at best between EMF exposure and health effects (2002 DHS Report, p. 9.) Regardless of which study or methodological process used, the consensus of the scientific community suggests that there is a great deal of uncertainty regarding determining either an association or a direct causation of human health effects due to EMF exposure (1999 DHS Short Fact Sheet on EMF.)

The 2002 DHS EMF report suggests that generally it may not be possible for the majority of the population to avoid some form of EMF exposure. The report also acknowledges that given the same set of data it is possible that other scientists may weigh and interpret the scientific data differently. The panel also agreed that there is not a well-documented mechanism that explains how exposure to the various sources of EMFs would cause a biological response that in turn leads to human health effects. There are numerous factors that have to be evaluated in determining a conclusive link between exposure to an agent that may possibly create carcinogenic effects or other human health impacts. For example, a scientist may account for the likelihood of a potential health effect from exposure, flaws in a study's methodology, the likelihood of other contributing factors, as well as other possibilities that may skew a result (2002 DHS Report, p. 56-57).

An independent review of the DHS study suggests that other reviewers might have reached different conclusions. In a letter to Dr. Diana Bonta, Director of DHS, Dr. Warren Winkelstein, Chairman of the Scientific Advisory Board Panel (SAP), (that reviewed the 2002 DHS Report on EMF) suggests that some members of the SAP believed that if they had reviewed the same evidence using the same assessment techniques that they might have had less confidence that there are human health effects from exposure to EMF. The lack of biological effects from exposure to EMFs demonstrated in animal models, lack of consistent dose-responses, and the possibility of other plausible contributing factors were some of the reasons that explained the different views by some of the SAP's members.

V. Commission EMF Jurisdiction

The courts have acknowledged the Commission's jurisdiction in reviewing EMF-related matters. For example, the California Supreme Court issued a decision in SDG&E v. Covalt, 13 Cal 4th 893, (1996), ruling that by issuing D.93-11-013 and establishing interim EMF policies, the Commission has claimed exclusive jurisdiction over issues related to EMF exposure while its investigation into the health effects of EMFs continued. The Supreme Court held that, "the Commission has broad authority to determine whether the service or equipment of any public utility poses any danger to the health or safety of the public, and if so, to prescribe corrective measures and order them into effect." (13 Cal 4th 893, 923 (1996)). Additionally, the Court has interpreted the Commission's authority to require every public utility to construct, maintain and operate its facilities and equipment in a manner that safeguards the health and safety of its employees, customers, and the public, including the Commission's duty to regulate EMFs. (13 Cal 4th 893, 923 (1996)). The Court also points to the Legislative directive

(Stats. 1988, ch. 1551, §2 subd. (d)) for the Commission and DHS to investigate the health risks associated with EMFs and report the results. (13 Cal 4th 893, 926 [1996]).

VI. Next Steps

The DHS, along with the Commission, has spent almost nine years and almost \$10 million on reviewing existing scientific data, developing policy research and promoting public education regarding EMF exposure risk. Nonetheless, the DHS report does not conclusively associate or find direct causation of disease or cancer as a result of exposure to EMFs. The Commission has made a good faith effort to gather and process the available scientific knowledge regarding exposure to EMFs and their anthropogenic effects. Some nine years later we are not in a position develop a specific numerical standard or threshold based on the existing science regarding human health impacts from exposure to EMFs. Given the continued scientific uncertainty associated EMFs we think it is appropriate to continue with the Commission's existing EMF mitigation policy of Prudent Avoidance. This line of reasoning appears to be supported by the 2002 DHS report that declines to make recommendations regarding the policy implications from its study of EMF exposure. The DHS report included known national and international studies and recent epidemiological studies. The Commission will consider new scientific data in this proceeding as it becomes available, but currently will focus its attention on improving the existing EMF mitigation policy. We believe that the Commission's existing policy can be updated where technically feasible and cost-effective. Further, we believe that implementation of the Commission's existing EMF mitigation policies could be further improved.

Public concern about EMFs and the activities utilities should undertake in response to those concerns continues unabated. In numerous transmission siting proceedings, such as the recent matter involving the Jefferson-Martin project (A.02-09-043) and the Mission-Miguel project (A.02-07-022) some parties expressed great concern regarding potential health effects from EMF exposure. Participants expressed special concerns about exposures to schools, day care centers, and residences. Intervenors also often object to the way that the utility applies the 4% rule in establishing its EMF exposure mitigation strategy. It appears that the Commission could review its existing framework of EMF guidelines to determine if there are additional mitigation measures that are cost-effective and technically feasible which could be used to reduce public exposure to EMF impacts from electric transmission projects. While the Commission is considering whether additional mitigation measures are necessary, it also should consider better methods to require the utilities to implement the existing “low-cost/no-cost” EMF mitigation policy to ensure that public exposure is minimized where possible and reasonable.

VII. Preliminary Scoping Memo

In this Preliminary Scoping Memo, we describe the issues to be considered in this proceeding and the timetable for resolving them. Principally, this rulemaking is the forum for review of existing EMF policy and the adoption of new rules, if appropriate. We open this rulemaking to analyze these issues on a statewide basis.

The issues that we will explore in this docket include the following:

1. The results of the Commission's current "low-cost/no-cost" mitigation policy and the need for modifications.
2. Explore improvement in the implementation of the existing "low-cost/no-cost" mitigation policy.
3. As new EMF related scientific data becomes available, new or revised Commission EMF mitigation policies.

VIII. Category of Proceeding

The Commission's Rules of Practice and Procedure require that an order instituting rulemaking preliminarily determine the category of the proceeding and the need for hearing.⁴ As a preliminary matter, we determine that this proceeding is quasi-legislative.

As provided in Rule 6(c)(2), any person who objects to the preliminary categorization of this rulemaking as "quasi-legislative" or to the preliminary hearing determination, shall state its objections in its responsive comments to this OIR. After the prehearing conference (PHC) in this matter, the Assigned Commissioner will issue a scoping ruling making a final category determination; this final determination is subject to appeal as specified in Rule 6.4.

IX. Schedule

The preliminary schedule shall be determined by a ruling of the assigned commissioner. This schedule will be discussed at, and further refined following the first PHC as scheduled by the Assigned Commissioner and Administrative Law Judge.

X. Parties and Service List

The Executive Director shall serve this order on all parties to I.91-01-012, A.02-07-022 (Mission-Miguel), A.02-09-043 (Jefferson Martin), A.03-03-043

⁴ Rule 6(c)(2).

(Mission-Viejo), A.01-03-036 (Valley Rainbow) and A.99-11-025 (Tri-Valley). At the first PHC, the Administrative Law Judge will identify parties to the proceeding, and will thereafter issue a new service list. Pacific Gas and Electric Company, Southern California Edison Company, and SDG&E are respondents. Other regulated electric companies with service in California are encouraged to participate as well. Any person or representative of an entity interested in monitoring or participating in this rulemaking should send a request to the Commission's Process Office, 505 Van Ness Avenue, San Francisco, California 94102 (or ALJ Process@cpuc.ca.gov) asking that his or her name be placed on the service list. The service list shall be posted on the Commission's web site, www.cpuc.ca.gov, as soon as it is practical. Since our order names PG&E, SCE, and SDG&E as Respondents to this rulemaking, by virtue of that fact, they will appear on the official service list.

Any party interested in participating in this investigation who is unfamiliar with the Commission's procedures should contact the Commission's Public Advisor's Office in San Francisco at (415) 703-2074 or in Los Angeles at (213) 649-4782, (866) 836-7875 (TTY-toll free) or (415) 703-5282 (TTY), or send an email to public.advisor@cpuc.ca.gov.

In this proceeding, we intend to utilize the electronic service protocols given Appendix A. Any party requiring paper service of documents in this case should so note that requirement in its request to be added to the service list.

XI. *Ex Parte* Communications

This quasi-legislative proceeding is subject to Pub. Util. Code § 1701.4. No restrictions on ex parte communications apply.

O R D E R

Therefore, **IT IS ORDERED** that:

1. A rulemaking is instituted to re-examine the Commission's policies and rules related to electromagnetic fields (EMFs) emanating from electric utility facilities and to evaluate what changes, if any, to the Commission's current policies and rules should be undertaken.
2. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company are respondents.
3. The Executive Director shall cause a copy of this order to be immediately served on all respondents and on the service lists in I.91-01-012, A.02-07-022, A.02-09-043, A.03-03-043, A.01-03-036, and A.99-11-025.
4. Individuals and organizations that have an electronic mail address shall provide that address to the Commission's Process Office at process_office@cpuc.ca.gov or (415) 703-2021, without delay. Provide the proceeding number, your name and organization, party status (i.e., appearance, state service or information only) and electronic mail address. Individuals and organizations that wish to be removed from the service list should also contact the Process Office with this request.
5. All parties shall abide by the Electronic Service Protocols attached to Appendix A to this order.
6. We preliminarily determine that this is a quasi-legislative proceeding and that evidentiary hearings will be required.
7. Parties shall file and serve comments or objections on the categorization of this proceeding and need for hearings within ten days of the effective date of this decision. These comments or objections shall be served on the service list in I.91-01-012.

This order is effective today.

Dated _____, at San Francisco, California.

APPENDIX A

ELECTRONIC SERVICE PROTOCOLS

Party Status in Commission Proceedings

These electronic service protocols are applicable to all “appearances.” In accordance with Commission practice, by entering an appearance at a prehearing conference or by other appropriate means, an interested party or protestant gains “party” status. A party to a Commission proceeding has certain rights that non-parties (those in “state service” and “information only” service categories) do not have. For example, a party has the right to participate in evidentiary hearings, file comments on a proposed decision, and appeal a final decision. A party also has the ability to consent to waive or reduce a comment period, and to challenge the assignment of an Administrative Law Judge (ALJ). Non-parties do not have these rights, even though they are included on the service list for the proceeding and receive copies of some or all documents.

Service of Documents by Electronic Mail

For the purposes of this proceeding, all appearances shall serve documents by electronic mail, and in turn, shall accept service by electronic mail.

Usual Commission practice requires appearances to serve documents not only on all other appearances but also on all non-parties in the state service category of the service list. For the purposes of this proceeding, appearances shall serve the information only category as well since electronic service minimizes the financial burden that broader service might otherwise entail.

Notice of Availability

If a document, including attachments, exceeds 75 pages, parties may serve a Notice of Availability in lieu of all or part of the document, in accordance with Rule 2.3(c) of the Commission’s Rules of Practice and Procedure.

Filing of Documents

These electronic service protocols govern service of documents only, and do not change the rules regarding the tendering of documents for filing. Documents for filing must be tendered in paper form, as described in Rule 2, *et seq.*, of the Commission’s Rules of Practice and Procedure. Moreover, all filings shall be served in hard copy (as well as e-mail) on the assigned ALJ.

Electronic Service Standards

As an aid to review of documents served electronically, appearances should follow these procedures:

Merge into a single electronic file the entire document to be served (*e.g.* title page, table of contents, text, attachments, service list).

Attach the document file to an electronic note.

In the subject line of the note, identify the proceeding number; the party sending the document; and the abbreviated title of the document.

Within the body of the note, identify the word processing program used to create the document. (Commission experience indicates that most recipients can open readily documents sent in Microsoft Word or PDF formats)

If the electronic mail is returned to the sender, or the recipient informs the sender of an inability to open the document, the sender shall immediately arrange for alternative service (paper mail shall be the default, unless another means is mutually agreed upon).

Obtaining Up-to-Date Electronic Mail Addresses

The current service lists for active proceedings are available on the Commission's web page, www.cpuc.ca.gov. To obtain an up-to-date service list of e-mail addresses:

- Choose "Proceedings" then "Service Lists."
- Scroll through the "Index of Service Lists" to the number for this proceeding.
- To view and copy the electronic addresses for a service list, download the comma-delimited file, and copy the column containing the electronic addresses.

The Commission's Process Office periodically updates service lists to correct errors or to make changes at the request of parties and non-parties on the list. Appearances should copy the current service list from the web page (or obtain paper copy from the Process Office) before serving a document.

Pagination Discrepancies in Documents Served Electronically

Differences among word-processing software can cause pagination differences between documents served electronically and print outs of the original. (If documents are served electronically in PDF format, these differences do not occur.) For the purposes of reference and/or citation in cross-examination and briefing, all parties should use the pagination found in the original document.

(END OF APPENDIX A)