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COMMENTS ON THE PROPOSED ALTERNATIVES
FOR THE
SUNRISE POWERLINK TRANSMISSION LINE PROJECT
OF
SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)

BY

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SUBMITTED TO:

THE CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC)
AND
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Heidi L. Kuhn
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My name is Heidi L. Kuhn, and I am the 100 percent owner of KF Dairy, which I recently inherited from my late husband James E. "Jim" Kuhn, an Imperial Valley farmer and Founder of the annual Salton Sea International Bird Festival in Imperial County, as well as the California Watchable Wildlife site located at Fig Lagoon in Imperial County.

KF Dairy is located at 1870-B Jeffrey Road in El Centro, California. I am also a significant owner of Imperial Valley Cheese of California, located at 1870-A Jeffrey Road in El Centro, California. Both would be significantly impacted by the major new electric transmission line proposed by San Diego Gas and Electric Company, part of which is proposed to run right along Jeffrey Road, immediately in front of the Dairy and Cheese Plant.

I am writing today regarding my grave concerns about significant negative impacts of this part of the proposed project on: 1) operations of KF Dairy; 2) dependability and quality of milk supply to IV Cheese; 3) health impact to employees of KF Dairy and IV Cheese and related employer liability; 4) reduction in resale value of Dairy and Cheese Plant; 5) negative impacts to competitiveness of KF Dairy relative to other Imperial Valley dairies; 6) economic impacts to Imperial County due to impacts to significant employers; 7) economic impacts to Imperial County in relation to its ongoing Dairy Attraction Committee efforts; 8) environmental impact concerns including environmental justice impacts; 9) negative impacts of dust and noise from construction and maintenance activity.

The negative impacts of the proposed project are more significant than those cited in the project's Environmental Impact Report, and the proposed mitigation measures do not adequately address the negative impacts of the project, and insufficient weight has been given to the literature that demonstrates measurable negative impacts to dairy cows from electrical transmission lines' electrical fields and stray voltage.

For this reason I am asking the CPUC and BLM to oppose the transmission line routes that involve Imperial County's "Dairy Corridor" in the agricultural lands along the Valley's west side, and especially the portion of SDG&E's proposed route for major electric transmission lines along the north-south portion of Jeffrey Road between Evan Hewes Highway and Interstate 8.

I understand the need to better address the energy needs of San Diego and the need to meet California's renewable energy mandate, but there are other proposed alternatives that do not concentrate disproportionate negative impacts upon my businesses, the future of Imperial County's expanding dairy industry, and the agricultural livelihood of the Imperial Valley.

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Two
** *REVISED* **

THE ASPEN ANALYSIS

The Aspen analysis inappropriately dismisses and discounts the importance of research reported in agricultural and other literature that documents measurable negative impacts to dairy cows and milk production due to the electrical fields from close proximity of electrical transmission lines and from stray voltage. It also fails to take into consideration the limitations in applicability of some of the research to the evaluation of their proposal, as well as the weaknesses in the protocols and scientific method used in some of the research cited.

The Aspen analysis cites research about electrical fields from electricity transmission lines, but the research cited addresses lines of 345kV, when the proposed project in question is 500 kV. The sheer magnitude and electrical power of the proposed project make much of the accessible research on lower-voltage lines inapplicable in analyzing the potential impacts of SDG&E's proposal. Moreover, much of the research cited based on cow "sensitivity" studies have been short-term experiments, with limited exposure to electrical treatments that do not adequately measure long-term negative reproductive effects and the impact of accumulated stress on cows' adrenal glands over time from electrically-induced stress (and the concomitant increase of the stress hormone cortisol in the milk supply.)

In addition, much of the agricultural research relies upon studies produced ten years ago or more, which calls into serious question their validity as they relate to today's dairy farms. As today's dairies have become increasingly electrified and automated, they utilize numerous computers and microprocessors in their milking technology, office equipment, cooling equipment, etc. The resulting increased loads on transmission lines in turn increase the importance of evaluating power quality and regularity in analyzing tolerable neutral-to-earth voltage.

In addition, the dairy farm of today is considerably different from those of decades past, with more precision-bred, "high genetics" animals. Such specialized livestock on dairies may be more sensitive to even low levels of electrical voltage and fields. The additional financial investment in such precision-bred animals also increases exponentially the economic impact of any negative health impacts to dairy cows.

KF Dairy's herd consists entirely of Jersey cows, a much smaller and more sensitive animal than the traditional Holstein dairy cow cited in most of the dairy research. Their smaller stature and shorter body length would make Jerseys much more sensitive to electrical currents as less body mass would be available to dissipate electrical fields encountered. Unfortunately little of the agricultural literature has evaluated the effect of excess electricity upon Jersey cows. In one

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Three
** REVISED **

1969 study by L. B. Crain entitled "Effects of Distribution System Ground Voltages Appearing on Domestic Water Lines" (Paper No. 69-814, ASAE, St. Joseph, MI), Jersey cows were determined to suffer decreased milk production when exposed to low-level electrical impulses simulating those from grounded electrical transmission lines.

Numerous research efforts have utilized too few cows with too large of variations between groups to find statistically-significant differences in milk production if such differences did exist (Behr, Michael. 1997. Stray Voltage Research Fraud. Proprietary. Northfield, MN). Much of the research also focuses on cattle feedlots raising animals for beef. Beef cattle are extremely different from milk cows -- picture a huge offensive lineman versus a petite pregnant woman and you can see why this research is particularly non-applicable. Measurable and demonstrable differences in milk production can be seen as a result of a windy day, a change in corral location, an increase in humidity, etc. Ask any nursing mother about her milk volume's sensitivity to the slightest stressors and you will understand why a dairyman is so concerned about the slightest stressors to his or her cows.

Lastly, today's electrical testing technology is much more sensitive than those of a decade or more ago, and so should be utilized in the evaluation of animals' sensitivity to even low levels of electrical fields. The common use of resistors in voltmeter circuits has been shown to obscure the higher-frequency, lower voltages that are harmful to cows.

In addition to scientific research, the Aspen analysis should include the legal literature, which includes several examples of court decisions corroborating dairy farmers' claims of harm to dairy cows from electrical companies' transmission lines. For example, In *Zum Berge v. Northern States Power Company* (481 NW2d 1103; Minnesota Court of Appeals, 1992), a dairy farmer brought action against the power company for damage caused through stray voltage. The cattle were reluctant to eat, failed to conceive, appeared nervous, developed limb and hoof problems, and had a high prevalence of mastitis which is very damaging to milk production.

The plaintiff's barn was found to have a high reading of stray voltage. The power company position was that there was faulty on-farm wiring or grounding. It was determined, however, that the power company's line was the source of the excess voltage. The power company installed an isolator. However, this was not properly done, and it was determined that the proximity of the transmission line continued to cause peripheral voltage effects. The plaintiff sued the power company alleging strict liability, among other causes of action. Following a jury trial, the plaintiff received an award in excess of \$1M. The power company defendant appealed, but the court affirmed the award. This is an example of a court of law affirming the negative effects of excess electricity on dairy cows.

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Four
** REVISED **

I. OPERATIONS OF KF DAIRY

As you heard in the testimony of Richard Van Leeuwen of Bullfrog Farms, most dairymen consider a conservative distance from a major power line to a dairy to be one mile, and a greater distance for young animals. KF Dairy has hundreds of young heifers at its Jeffrey Road site, and has plans to move its extensive calf ranch operations to adjacent land fronting Jeffrey Road within the year.

Based on studies (Lefcourt, Alan M. and R. M. Akers. 1982. Endocrine response of cows to controlled voltage during milking. Journal of Dairy Science. 65:2128) and real-life experience of neighboring dairymen with stray voltage issues, KF Dairy estimates that milk production would be negatively impacted by approximately 10 percent, or five pounds per cow per day, due to the effects of the close electrical lines and reduced water consumption from cows' reluctance to touch metal watering troughs (a very critical issue in an extreme desert climate). At such a rate, our 3,000-milk cow herd would lose 15,000 pounds of milk per day. At \$17 milk, that equates to a loss of \$2,550 per day, or \$930,750 in gross revenue per year.

The available agricultural literature also indicates that there would be economic losses due to reduced reproductive efficiency of cows, more difficult behaviors requiring more intensive cow management, increased medical costs due to reduced immunity to stress and disease, etc.

In addition, the literature indicates that we could anticipate abnormally high cow and calf mortality rates due to electricity-induced causes such as increased incidence of disease, higher production of somatic cells (which also affects the price received for the milk), adrenal stress, and imbalances in cerebrospinal fluid of electrolytes and proteins, among others. Approximately 100 cows could be expected to perish due to electricity-induced causes, doubling the normal death rate. Each cow has a value of \$2,000, for a total loss of \$200,000 per year.

When coupled with the approximately \$1M of lost milk production and other negative economic impacts, it represents a loss of the magnitude that cannot be survived by a 3,000-cow dairy. It would surely put us out of business and dissuade any other dairies considering relocation to the Imperial Valley.

Heidi L. Kuhn

KF Dairy / Imperial Valley Cheese

Page Five

**** REVISED ****

II. DEPENDABILITY / QUALITY OF MILK SUPPLY TO IV CHEESE

Imperial Valley Cheese of CA is one of two producers of Muenster in the state, and the only California commercial producer of Swiss cheese. Critical to the operation and planning of Imperial Valley Cheese in their production is a dependable supply of milk with the appropriate component percentages between butterfat, protein, and other solids. The more that these percentages vary in our milk supply, the more time, effort, and expense must go into producing the cheese. Several research studies have indicated reductions in butterfat and increased variability in milk components in milk from cows exposed to electrical fields.

Moreover, Imperial Valley Cheese chose the location of the west side of Imperial Valley in California because it was our understanding that Imperial County was intent on attracting dairies to the County, and the west side was the most advantageous place for such dairies to locate. Our plan was to have several dairies in the immediate vicinity, increasing the dependability of the milk supply and shortening milk hauls to the plant. Word that one dairyman has shelved his plans to build his new dairy on Imperial Valley's west side due solely to the possibility of SDG&E's preferred project being selected is devastating news indeed to the future expansion plans of Imperial Valley Cheese.

III. HEALTH IMPACT TO EMPLOYEES / EMPLOYER LIABILITY

In July, 2001, the California Department of Health released a report prepared for the CPUC concerning health risks from electrical and magnetic fields from power lines in the home or workplace. They concluded more than a 50 percent chance of a small increased risk of resultant childhood leukemia, adult brain cancers, and amyotrophic lateral sclerosis (ALS/Lou Gehrig's Disease). It was also determined that there was more than a 50 percent chance of a five- to ten percent increase in miscarriages, 10 to 50 percent increased risk of male breast cancer, childhood brain cancer, suicide, Alzheimer's disease, or sudden cardiac death.

Just the possibility of increased negative health effects of the proposed electrical transmission lines is of dire concern to KF Dairy as an employer of 50, Imperial Valley Cheese as an employer of 35, and myself as a landowner to another agricultural processing company along Jeffrey Road that employs 50. All of these businesses run virtually around the clock, year-round. It appears unreal that SDG&E would propose to run a huge transmission line right down the street in front of these intensive

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Six
** REVISED **

businesses, with the resulting liability for 135 employees and increased employer liability.

IV. MARKET VALUES OF LAND AND BUSINESSES

The market determines the relative value of a piece of farm ground, the value of land improvements, or the price of a business. In determining the value of KF Dairy, the “market” is made up of dairymen, who could be potential purchasers of a dairy operation in the Imperial Valley. Therefore, the impact of any proposed project upon the economic value of the Dairy cannot be determined by a scientific study evaluating the impacts of electrical fields upon dairy cows, but it must instead be the impact of the proposed project upon dairymen’s perceptions of the effects of electrical fields and the effect of those perceptions upon the price they would be willing to pay for such an investment.

As has been stated previously, dairymen across the country believe that large electrical lines in close proximity to a dairy will have deleterious effects upon cows and milk production. Therefore, I propose that the CPUC pay to conduct an opinion poll of dairymen in California and elsewhere that attempts to determine what price they would be willing to pay for KF Dairy. Then the survey would educate the participating dairymen about any studies that have purported to find negligible negative impacts of electrical fields from transmission lines upon dairy cows. Finally, the survey will ask the dairymen to put a theoretical price on KF Dairy after they have been told that a major transmission line will be built 1/3 of a mile from the Dairy, and see what price they estimate. The difference between their initial evaluation and the value they subsequently place on the Dairy will then be additional economic impact to the value of KF Dairy, positive or negative, as the asset increases or decreases in value in the marketplace.

V. COMPETITIVENESS

Prior versions of SDG&E’s proposed route included a location in close proximity to another Imperial Valley dairy, BullFrog Farms. As a result of evaluation of operational impacts, however, that route was discarded due to the negative effects on an established dairy operation. It appears, however, that SDG&E is involving itself in picking winners and losers in the dairy industry, by choosing to site another part of its transmission lines immediately in front of KF Dairy. This would negatively

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Seven
**** REVISED ****

impact the competitiveness of KF Dairy relative to others in its immediate industry and community.

VI. IMPACTS TO EMPLOYMENT

KF Dairy and Imperial Valley Cheese together employ directly approximately 90 employees. These are significant employers in a county with one of the highest unemployment figures in the state of California, year-in and year-out. As plans to expand operations or continue operations are affected by the proposed route of SDG&E's project, there will be a direct impact upon employment figures. This is true for any agricultural operation with intensive labor needs. Therefore the routes adopted by SDG&E should avoid all agricultural resources in an attempt to limit negative impacts to employment.

VII. COUNTY DAIRY ATTRACTION EFFORTS

The County of Imperial, Coalition of Labor and Business, Imperial Irrigation District, Imperial County Farm Bureau, economic development agencies, and numerous private businesses have long funded a Dairy Attraction Committee to encourage dairies from inside and outside of California to locate in Imperial County, thereby increasing the economic base of the county and the value of its huge agricultural economy.

These efforts have most often focused upon the west side of the Imperial Valley as the most advantageous place to locate dairies, due to proximity to feed, water in the Westside Main canal, proximity to transportation corridors to San Diego and Los Angeles, and the relative lack of humidity on the Western side of the Valley (the predominating west winds go over the desert and are dry when they reach the west side, as opposed to gathering humidity while crossing intensive farming operations. Low humidity is infinitely more advantageous to cow comfort and milk production.) The "Dairy Corridor" envisioned, planned for, and invested in would be devastated by the presence of a huge electrical line.

VIII. ENVIRONMENTAL JUSTICE

Determination of environmental impacts is required to also include considerations of environmental justice. Environmental justice impacts of the proposed project result from the concentration of potential environmental, economic, and health

Heidi L. Kuhn
KF Dairy / Imperial Valley Cheese
Page Eight
**** REVISED ****

impacts upon a population that is predominantly Latino, poor, and limited-English proficient. If the community of the Imperial Valley were more enfranchised or influential, it appears that more weight would be given to the concerns expressed by its irrigation district, professional associations, and others. As such, the concerns expressed by Imperial Valley residents appear to be undervalued by EIR consultants and SDG&E representatives in their preparation of proposed routes and their mitigation measures. This will certainly result in costly lawsuits and mobilization of constituent groups.

IX. CONSTRUCTION IMPACTS

The construction impacts of noise and dust were not addressed at all in the evaluation of impacts on agricultural resources. In the case of dairy cows, these impacts are significant deleterious factors in milk production and quality. Moreover, construction impacts are only considered temporary, whereas the negative effects on milk cows can continue over time, with the aforementioned effects on reproduction, immunity, feeding, body condition, etc.