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To: Dan Breedon

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Subj: Composting law, UHV transmission line issues, packaging waste, biodiesel particulates and HUD future policies

Ref A: J. Cote, Toughest composting law in U.S., SF Chronicle Wed, June 10, 2009. A1 & A10

Ref B: R. Speer, High-Wire Act, TANC power-line proposal runs, CN&R, June 4, 2009, p 12-15

Ref C: A. Imhoff, Paper or plastic?, Solutions for an over packaged world, American Media Books, Sierra Book club 2008

Ref D: W. Kemp, Biodiesel and beyond, Aztech 2006

Ref E: Ron Sims, Health Innovations, UCTV Mar 6/8/09, 7 PM

Comments:

1. Per Ref A, the San Francisco BOS has approved a composting law that takes effect in fall of 09 that provides a green coded container for paper, food and plants that is expected to increase the current recycling rate from about 75% to 90%. A moratorium on fines will extend to July 2011. The nature of the mix suggests that the compost would only be of value for biogas generation rather than for soil treatment but this is not discussed.
2. Per Ref B, a new entrant into the UHV transmission scene is a proposed 3 GW DC 1000 mile intertie between Selkirk BC down the Central Valley to Suisan Bay. The voltage is not mentioned but the typical new DC interties are at +800 Kv. This brings big hydro from BC to satisfy the legislature's goal of a 33% renewable resources into Northern California. This can be contrasted to the present California 40 Gw installed source capacity and the PG&E commitment to create .75 GW of solar energy primarily from Nevada. Construction is expected to begin in 2012 and last until 2015 for a cost of \$3-8 billion. The two wire DC transmission system is less obtrusive than the equivalent 3 wire AC three phase systems that dominates the current UHV AC transmission systems. The DC system minimizes the need for safety margins and better utilization of the conductors in contrast to AC systems. The proposed 785 Kv system proposed by DOE, the "higher efficiency" 500 KV TANC systems and an existing 500 Kv AC systems and/or distributed sources/smart grids proposed by many stakeholders in Northern California are of interest. Health issues raised in Ref A include effects on pacemakers, fatigue, miscarriage, childhood leukemia, amyotrophic lateral sclerosis and suicide. Other than thermal effects, there is no statistically defensible support for low frequency or DC electromagnetic fields on mortality/disability of animals or plants. It is possible to observe sub-lethal level motion artifacts on microscopic animals like paramecium but long term or DNA effects have not been demonstrated. The only new elements that are highlighted in the recent technical literature are

the potential for increased presence of O3/ozone from coronal streamers. The EM fields from transmission lines are typically smaller than the fields from ubiquitous household wiring, heating pads, diathermy, nuclear magnetic imaging or equivalent that have not presented problems over long periods of time. Exhaustive tests of microwave radiation using rabbit eye incipient cataract formation have been used to establish safety margins. Research based on thermal temperature control of unhealthy individuals in a marginally high thermal environment have been used as models for microwave heating oven door integrity. Early models of pacemakers have had problems with fast rise time motor controllers in elevators. The following professional organizations are potentially involved in UHV transmission line health issues and need to be reviewed.

- a. IEEE Electromagnetic Compatibility Society (EMC)
 - b. IEEE Engineering in Medicine and Biology Society (EMB)
 - c. IEEE Instrumentation and Measurement Society (IM)
 - d. IEEE Power Engineering Society (PE)
 - e. IEEE Systems, Man and cybernetics Society (SMC)
 - f. National Institute of health
3. Ref C examines the issue of packaging contamination of the environment and mitigation techniques. At the county level it may be possible to control packaging through the procurement process. Industrial or manufacturing activities within the county may be subject to direct or indirect control based on land fills and salvage prescriptions. High and low density polyethylene (HDPE & LDPE) head the list of most preferred plastics and PVC falls in the potentially prohibited list.
 4. Ref D examines the issue of ASTM 6751 biodiesel that I had previously reviewed. Discussions with the local VW representative indicate that their company's primary concern is with contamination of their injectors associated with particulates. They recommend the use of a 10 micron filter for biodiesel filtering. This may suggest that local suppliers of biodiesel may want to provide a special grade of biodiesel to satisfy this requirement if and when the cost of petrodiesel becomes prohibitive. Butte County as a potential prime producer of biodiesel needs to be sensitive to any issue that would cast a shadow on this form of fluid fuel for mobile vehicles that is key to economic development, wildland fire management and water conservation.
 5. Ref E provides a view of the new head of HUD with regard to innovation in health care that could affect wellness in our county using cost effective approaches. The association of retired persons magazine documents 90 minute sessions with a GP for a group of patients with long term common chronic disorders that has been shown to be effective. Good nutrition with availability of nearby food products needs to be examined. On-line medical guidance and nearby availability of elementary care services are good areas for creation of health innovations. Healthy home building practices need to be examined in terms of moisture, toxic materials, fungus and parasite control.