Bruce A. Campbell, P.E. 14104 Hancock Drive Anchorage, AK 99515

March 7, 2007

Mr. James Nordlund Director, Chugach Electric Association P.O. Box 196300 Anchorage, AK 99519

Dear Jim:

I am resigning as chairman of the Chugach Renewable Energy Committee, which was created by the Board of Directors in November 2006.

Three factors contributed to my decision to leave the committee:

- 1. Committee size
- 2. Restriction to only consider renewable energy instead of all alternative energies
- 3. Lack of a future base generation plan

## Committee Size

The appointment of 25 persons to the committee has made progress slow and difficult. Over three months have elapsed and progress is conspicuous by its absence. Members have equal rights to express opinions on every issue. Extended expressions and questions have consumed a sizeable portion of the meeting times. In addition, it is not possible to schedule meeting times convenient for all 25 members. As a result, different members attended different meetings and the consistency of awareness from meeting to meeting suffered. The scheduling of meeting times became an issue of major debate.

## Restriction of Scope

My original letter to the Board in April 2006 cited my concern for the fast-approaching exhaustion of gas from the Cook Inlet fields and the need to find an alternative generation system. Based on the consumption of approximately 208 billion cubic feet of gas each year and an estimated reserve of 1.7 trillion cubic feet, supply could be exhausted in 2014.

My concern for Chugach's future incorporates all alternative energies and not just those deemed to be renewable. Certainly it would be great if the future base generation source could be a renewable one. However, review of the possible renewable sources results only in the conclusion that no renewable source is available either timely or economically for future base generation:

# 1. Hydro<sup>2</sup>

Possible source: Chakachanna Forecasted max output: 330 MW Estimated cost: \$1 billion in 1980

Time needed to bring on line: 10 years minimum

### 2. Geothermal

Possible source: Mt. Spurr area Forecasted max output: ?

Estimated cost: ?

Time needed to study feasibility: 3 years minimum

Time needed to bring on line if feasible: 5 years minimum

Risk of volcanic activity could be fatal

#### 3. Nuclear

No information has been assembled. Public concern may well make this alternative impossible.

## 4. Wind, Tide & Wave

These renewables are by there very nature intermittent and hence not suitable for base generation. Tide turbines were initially suggested if both Turnagain Arm and Passage Canal could be utilized to avoid slack tides but further study makes this possibility remote at best.

## Lack of future base generation plan

Julie Jessen, a renewable committee member, quoted Wayne Gretzky, "good hockey players play where the puck is; great hockey players play where the puck is going to be. To fit in the great category Chugach needs to assess where the "puck" will be in 2014, not where it is now.

It appears that the only base generators available to Chugach in the future are gas and coal. Gas generation depends on three possible sources:

- 1. Future successful oil exploration in the Cook Inlet area that produces a gas byproduct
- 2. Gas from the North Slope
- 3. Liquefied Natural Gas (LNG)

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As for Cook Inlet, the possibility of a new major oil find is speculative at best. Oil companies are profit-making ventures and to believe that they would spend hundreds of millions of dollars to find only gas for the very limited Anchorage market is, I believe, wishful thinking. Oil is the target; gas is a by-product. In any event, if more oil and gas are found it will be much more expensive than it is now and probably will only stave off the basic problem for a few more years, at great expense to the users.

Depending on gas from the North Slope is certainly not a viable option. At best it is many, many years away even if Governor Palin can put a deal together. Remember, the Trans Alaska Pipeline was built between 1974 and 1978 as the result of Congress passing an enabling act that allowed the line to be constructed on federal lands. No such act will occur for a gasline given the present makeup of Congress. Environmental lawsuits alone will consume at least ten years.

If Chugach follows its present course and no more gas is found in the Cook Inlet area, it will be forced to utilize LNG. This scenario will include even higher prices and more lawsuits if an LNG terminal is proposed in the Anchorage area.

The only real alternative for future dependable, low cost base generation is coal from Healy. Both Homer Electric and MEA have already reached this conclusion. Homer Electric has contracted for the Healy Clean Coal plant and MEA is on track to build a 100 MW circulating fluid bed coal plant. Both have advised Chugach that purchase contracts will not be extended past 2014.

Attached are three documents prepared by the MEA consultant that compare emissions and costs of gas versus coal<sup>3</sup>. Note that new coal technologies are rapidly achieving lower emissions and the next generation of coal plants may equal or surpass gas turbines with regard to emissions. Costs using coal generation are forecast to be about half the costs of gas generation in 2014. The differential is even greater beyond 2014.

It is my belief that before attempting to recommend any supplemental renewable generation it only makes sense to have a firm base generation plan in place for 2014 and beyond since the two sources must compliment each other. The fact that Chugach will have excess gas generation capacity when MEA and Homer cease buying power in 2014 makes the addition of any new renewable power source a poor economic decision at this point in time as the added construction cost can only be passed on to the members of the cooperative. The Fire Island wind plan, which will feed small amounts of power into the system, has all the earmarks of an economic disaster from the members' viewpoint. Without sales to MEA and Homer Electric, the customer base for proration of new capital costs will be greatly diminished.

I hope that Chugach has not lost sight of the fact that its primary responsibility is to provide cheap, dependable power to its member-owners. My review of existing studies and conversations with others involved in future energy planning leads only to the

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conclusion that the party is over with regard to cheap gas and it is time, actually past time, for Chugach to switch base generation to coal.

It might also be a good time to consider sale of Chugach to a private venture, as profit motive is a great motivator.

The worst decision is indecision. We need hands on the steering wheel now. Application of Erma Bombeck's famous excuse, "I have only two hands and I'm busy wringing them" is neither prudent nor acceptable.

For these reasons I cannot continue as a member of the renewable energy committee.

Sincerely,

Brike A. Campbell, P.E

1. Summary of the 2006 Southcentral Energy Forum

2. Hydropower prospects for South Central Alaska, Eric Yould

3. Coal Emission Trends

**Typical Emission & Power Costs** 

**Busbar Power Costs** 

cc: Jeff Liscomb

Alan Christopherson

Uwe Kalenka

Bruce Davison

Elizabeth Vasquez

Dave Cottrell