

*Handwritten notes:*  
Laminated  
Log 2

CERTIFIED MAIL

December 10, 1982

Mr. Jess E. Huffman  
Star Route, Box 6025  
Captain Cook, HI 96704

Dear Mr. Huffman:

Variance Application (V82-46)  
Variance from Maximum Allowable Height Limits  
Tax Map Key 9-2-127:16

After reviewing your application and the information submitted in behalf of it, the Planning Director by this letter hereby certifies the approval of your variance request to allow the construction of a windmill tower with a height of one hundred (100) feet in lieu of the maximum fifty-five (55) feet allowed for windmills in the Agricultural zoned district.

The approval is based on the following:

1. That there are special or unusual circumstances applying to the subject property which exist to a degree that interfere with the best use or manner of development of the property. The circumstances consist of the topographical, atmospherical, and locational conditions of the specific area with respect to its intended use as a site to erect a windplant system. These systems are primarily dependent on the wind velocity at the site. The wind pattern itself is affected by terrain, slopes, contours, size and composition of the vegetation, temperatures and climatic conditions. Furthermore, today's energy conscious society and world focuses on alternate energy systems such as windplants as viable energy options. This is evidenced by the fact that there are ongoing national and worldwide efforts in

DEC 13 1982

Mr. Jess E. Huffman  
Page 2  
December 10, 1982

becoming less dependent on oil and diversifying the dependence of energy to other resources. The concerted efforts being directed into fields of solar energy, biomass, wind energy, geothermal and ocean thermal systems, etc. are strong evidence as to the viability and need for these systems.

Act 24, SLH 1980 dealing with windfarms allows commercial and private wind farms in the State Land Use "Agricultural" district . . . provided that facilities/ structures are compatible with agricultural uses and cause minimal adverse impacts on agricultural lands.

In "A Siting Handbook for Small Wind Energy Conversion Systems by H. L. Wegley, J. V. Ramsdell, U. S. Department of Energy, March 1980," it is stated that the "surface over which the wind flows affects the wind speed near that surface. The greater the friction the more the wind speed is reduced near the surface. Choosing a site in a hilly or mountainous area is more complicated than choosing a site in flat terrain. A triangular shaped ridge causes the greatest acceleration and that the rounded ridge is a close second. The data used in ranking these shapes were collected in laboratory experiments using wind tunnels to simulate real ridges. Though few wind experiments have been conducted over actual ridges, the results are similar to wind tunnel simulations. Both indicate that certain slopes, primarily in the nearest few hundred yards to the summit increase the wind more effectively than others. Generally, wind speed decreases significantly at the foot of the ridge, then accelerates to a maximum at the ridge crest. Another consideration in choosing a site on a ridge is the turbulent zone that form in the lee of ridges. The steeper the ridge slope and the stronger the wind flow, the more turbulence will form in the lee of the ridge. Thus it is safest to site at the summit of the ridge, both to maximize power and to avoid lee turbulence."

All of the above information provides evidence that there are off-site influencing factors in the siting of a windplant system.

In this particular application, while there are no special or unusual circumstances which relate to the subject property, the uniqueness of the wind resource in this particular case, is the off-site influencing factor relevant to the request for the additional height. Because of the high ridge approximately 900 feet mauka and windward

Mr. Jess E. Huffman  
Page 3  
December 10, 1982

of the subject property, the windplant system must be erected above the lee turbulence zone to maximize its efficiency and utility.

Based on these foregoing conditions, the special circumstances relating to the wind patterns in conjunction with the maximum allowable height permitted does interfere with the best use or manner of development of the subject property in that the available wind power above the site cannot otherwise be more fully utilized.

2. That there are no other reasonable alternatives in resolving this difficulty. The alternative of denying the variance is not a reasonable one in that the efficiency of the windplant would be further diminished and its utility would be voided. As such, because the requested additional height is needed to ensure or increase the efficiency of the windplant to serve the existing single family dwelling, we have determined that the most reasonable alternative is in granting the variance.

Any other solutions would cause excessive or undue hardships on the petitioner, when a more reasonable solution is available.

3. The approval of the request would be consistent with the County General Plan's "Energy" element and with State and national goals which encourage the development and use of alternate energy sources. The proposed windplant will be utilized in providing electrical power to the petitioner for his single family dwelling use.

In assessing the requests of height variances for windplants, three basic elements that are primarily evaluated are the visual impact, the physical impact, and the need for the additional height. The proposed location of the windplant will be approximately 248 feet from Plumeria Lane, 68 and 60 feet from the side property lines. The subject property is located approximately 3.1 miles from the Hawaii Belt Highway. The distances of the windplant from these visual corridors will minimize the visual and physical impact in this area.

Based on the foregoing, we have determined that the granting of the variance shall be consistent with the general purpose of the zoning district, the intent and purposes of the Zoning Code, and the General Plan. The analysis of the above issues also has concurred that the

Mr. Jess E. Huffman  
Page 4  
December 10, 1982

granting of the variance will not be materially detrimental to the public's welfare nor cause any substantial or adverse impact to the area's character or to adjoining properties.

The variance request is approved, subject to the following conditions:

1. That the petitioner or authorized representative shall be responsible for complying with all stated conditions of approval.
2. That plans and construction of the total structure must be approved by a structural engineer or architect registered in the State of Hawaii.
3. That the petitioner or authorized representative shall comply with Part 77 of the Federal Aviation Regulations, (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958 as amended prior to obtaining a building permit.
4. That plans for the proposed consolidation/resubdivision of the property shall be submitted within one (1) year from the effective date of the variance permit. Final subdivision plans shall be submitted within one (1) year from the effective date of tentative subdivision approval.
5. That plans for the windplant shall be submitted to the Planning Department for "Plan Approval" within one (1) year from the effective date of final subdivision approval.
6. That the petitioner or their authorized representative shall be responsible for providing the appropriate safeguards on their system to prevent TV and/or radio interference to the adjoining property owners notified through this variance application.
7. That all other applicable Federal, State and County rules, regulations and requirements shall be complied with.

Should the petitioner or their authorized representative fail to comply with the above conditions, the variance shall automatically be deemed void.

Finally, since the Planning Department did receive a letter of objection to the variance, we have the legal responsibility to inform the "interested party" that they do have a right to appeal the Planning Director's decision.

Mr. Jess E. Huffman  
Page 5  
December 10, 1982

Chapter 8 (Zoning Code), Article 1, Section 7.05 allows any "interested party" to request that the Planning Commission review the Director's action. Such request must be made within ten (10) working days after notice of the Director's decision and shall be in writing containing a statement of its grounds.

Therefore, the variance will not be effective until after the ten (10) day "appeal period" has passed and if no request is made by the "interested party." Should the "interested party" make a request, we shall inform you of the procedures that must be complied with.

If you have any questions on this matter, please feel free to contact us.

Sincerely,



SIDNEY M. FUKÉ  
Planning Director

RHY:ds

cc: Carl Kato  
Planning Commission  
Peter Shackelford