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March 7, 1989
RP:0103

James K. Ikeda, Acting Chief
Environmental Protection and
Health Services Division
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Ikeda:

Section 401 Water Quality Certification (WQC) for
Construction of Wailua River Hydroelectric Power Project
Wailua, Kauai, Hawaii - WQC 121

The Environmental Center previously reviewed a Draft Environmental Impact Statement (EIS) on the Wailua River Hydroelectric Project. Our comments, dated January 9, 1989, were directed towards Mr. William Paty, Director of the Department of Land and Natural Resources. We feel our comments on the Draft EIS are relevant to the concerns in WQC 121, so we are submitting a copy of our comments on the Wailua River Hydroelectric Project Draft EIS.

Thank you for the opportunity to comment on this Water Quality Certification.

Yours truly,

John Harrison
Environmental Coordinator

Attachment

cc: L. Stephen Lau
Randy Rush
Michael Graves
James Parrish
Amedeo Timbol
Yu-Si Fok



RP:0091

University of Hawaii at Manoa

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January 9, 1983

RE:0515

Mr. William Paty, Director
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Draft Environmental Impact Statement
Wailua Hydroelectric Project
Wailua, Kauai

This document proposes construction of a 1.26 MW hydroelectric power plant on the west bank of Maheo Stream, a tributary of the Wailua River. Water currently being diverted from the Hanalei River through the Hanalei Tunnel to Maheo stream will be diverted to a 6,400 foot long penstock of 48 and 32 inch pipe at an elevation of 1,210 feet above MSL. The penstock will run adjacent to Maheo Stream, and the powerplant will be located above the high water of both Maheo Stream and the North Fork Wailua River at an elevation of 760 feet above MSL. Once the water runs through the powerplant turbine, it will be discharged near the end of Maheo Stream. This review was conducted with the assistance of Michael Graves, Anthropology; James Parrish, Hawaii Cooperative Fisheries Research Unit; Amedeo Timbol, Kauai Community College; Yu-Si Fok, Water Resources Research Center; and Steven Armann, Environmental Center.

We find this document in violation of various rules regarding the content requirements of an EIS as outlined in section 11-200-17 of the EIS rules. The EIS process is intended to allow comprehensive public review and evaluation of potential impacts of a particular project. Thus, it is essential that all pertinent studies be conducted prior to publishing of the Draft EIS, and that, at a minimum, the Draft EIS discuss the findings of the studies. On page 113 there is a brief discussion of potential Endangered Species within the project area. The discussion states that the Hawaiian Duck may inhabit the area and that the project would have an adverse impact on the duck. Furthermore the EIS lists six other species which may inhabit the area and be affected during the project construction. However no wildlife study has been conducted, and none will be conducted until May or early June. Therefore, this EIS does not describe adequately the potential impacts and does not meet the requirements of section 11-200-17(e)(6) of the Environmental Impact Statement rules.

In addition, the EIS rules specifically state that the contents of a Draft EIS shall include a "summary of unresolved issues and either a discussion of how such issues will be resolved prior to commencement of the action, or what overriding reasons there are for proceeding without resolving the problems" [11-200-17(n)]. The section devoted to this requirement simply states "[t]his section will be completed after the consultation process." This is in direct violation of the EIS rule quoted above, and therefore, once again, this document does not fulfill the requirements of the EIS rules.

Unfortunately, the inadequacies of this document negate the possibility of an adequate public review. Even if present inadequacies were corrected in the Final EIS, the general public would not have the opportunity to constructively comment on the potential impacts. Therefore, we recommend that this Draft EIS be resubmitted at a later date when all pertinent studies have been completed and when all unresolved issues can be discussed.

Specific Comments

In regard to Endangered Species, page 129 states that "project operation will have no effect[s] beyond those incurred during construction relative to endangered species." However, the next sentence contradicts this statement by stating "[r]educed flows in Maheo Stream may make this stream less desirable to the Hawaiian Duck..." This uncertainty is evidence that a wildlife survey should have been conducted.

Although the Hanalei diversion structure was built many years ago, it would be helpful to know the specifications of the diversion weir in evaluating the cumulative effects and mitigating measures of this project. Often projects which cause disturbances in one area will mitigate the disturbance by creating benefits for another environment, a sort of give and take situation. Since it is generally agreed that the Hanalei River is a much better habitat for native species, especially the goby, than is the Wailua River, it may be better and cheaper to redesign the Hanalei diversion weir and forgo some of the costly mitigating measures along Maheo Stream.

Similarly, we agree with the statement on page 64 that at least some of the gobies in upper Wailua may have moved through the tunnel from the Hanalei River. For this reason, the fish screen planned for the Hanalei tunnel should be sited at the diversion weir to insure that the Hanalei gobies remain in Hanalei where the chances for survival are higher than at Wailua.

Page 56 states that the project site was sampled at 10 locations but it does not mention the method(s) (electroshocking, snorkeling, etc.) used. Without this information, we are not able to compare data in Table 2.2-4 on page 62 with other published and unpublished data. Furthermore,

table 2.2-4 mentions the quantity (rare, uncommon, common, abundant) of animals observed per site. The numerical equivalence for rare is 1 to 3 per site, uncommon is 4 to 10 per site, common 10 to 100 per site and abundance is > 100 per site. But the length of site 1 is 300 meters, while site 2 is 100 meters long. The table indicates that there are between 1 and 3 smallmouth bass per 300 meters in site 1 and between 4 and 10 in 100 meters in site 2. For a reasonable comparison, abundances at site 2 should be multiplied by 3. If we do such a multiplication, then the estimated abundances in this table need to be reevaluated. In addition, page 64 states that "[t]he two gobies remain uncommon and are present in approximately the same abundance as below the confluence (Payne 1988). However, the O'opu nopili is not reported above the confluence in Tables 2.2-2 or 2.2-4.

Page 64 states that there are other species not observed in the upper Wailua, but which occur in the Hanalei drainage. The sampling done at the upper Wailua drainage was confined only to the upper Wailua and not the whole drainage system. Native aquatic animals are diadromous, and they need and use the whole drainage system from the mouth of the river to the upper reaches. Since the whole Wailua drainage system was not sampled, it seems premature to conclude that there are other aquatic macrofaunal residents in Hanalei that are not found in Wailua. Data for the Hanalei River are taken from the whole drainage system. We suggest that a more comprehensive sampling be done for the Wailua drainage system from the mouth up to the upper reaches in recognition of the diadromy of native animals.

Page 105 states that the water quality will be unaffected during the construction phase. This cannot be correct, considering that an estimated 166 tons of sediment will be deposited into the stream. Similarly, page 106 states that the penstock will be covered by soil for 50 percent of its length. Has the route of the penstock been surveyed to determine the availability of soil to cover the penstock? If soil is not available, the EIS should discuss the means of obtaining soil. Furthermore, it appears that important information is missing from the sentence running from the end of page 105 to page 106.

Page 143 discusses drainage mitigations, including sedimentation basins. However, we cannot determine the effectiveness of the sedimentation basins without specifications of the basins and the topography of the adjacent areas.

Page 127 and page B-5 state that "larvae of opae should not be affected by passing through the turbines due to their planktonic size of 1 to 2 millimeters (Couret, 1976)." Couret's work gives the size of opae larvae. It does not mention that such larvae will not be affected by such unnatural occurrence as "passing through turbine blades." If a study has been made to merit such conclusion, please state so and include data in the EIS. Another impact not discussed in the Draft EIS and possibly more important is Gas Bubble disease caused by the pressure head inside the

penstock and the immediate pressure release upon discharge. Various studies have been conducted on mainland organisms in the southwestern United States on this effect; however, we do not know of any studies conducted on the opae.

Page 128 indicates that an energy dissipation structure will be devised to reduce the discharge velocity to less than one foot per second. The tailrace energy dissipation structure should be shown in the Draft EIS and studies of similar designs should be discussed and referenced. In addition, the velocities of the stream channel at low flow should be graphically displayed since there may be times, especially during low flows, when the energy dissipator will not decrease the velocity below that of the stream.

Page 41 states that the flows in the tunnel remain relatively constant at between 30 and 40 cfs. However, according to figure 2.2-13, it appears that the actual flow is between 20 and 30 cfs. Furthermore, the following sentence regarding wet years makes a generalization using a one year period of 1981-1982. Is this statement generally true for all wet years? How many years of each type have been compared? What criteria are being used to determine wet and dry? In addition, the last sentence in the paragraph makes mention of a regression analysis; however, there is no discussion of the results in the EIS.

Page 43 is a map of USGS Stream Gages which corresponds to table 2.1-3 on the following page. It is very difficult to determine that gage 1000 on the map is gage 161000000 in the table. The EIS should either discuss this relationship or change the map or table to be consistent. In general we found the maps to be very difficult to read. In many cases, it is the quality of reproduction was such that it was difficult to read contour lines and labelling of the tributaries. It may be helpful to highlight the Maheo, Wailua and Hanalei Rivers on some maps.

The two plots of Maheo Stream flow under different limiting circumstances (Figures 4.2-1 and 4.2-4) appear to be exactly the same plot. We would imagine that during the plant operation, the plot would not be exactly the same as it would be without the water from the Hanalei tunnel unless all the water from the Hanalei tunnel was being used for the project.

We have noted numerous spelling mistakes in regard to Hawaiian and Scientific names of various species. In particular page 65 misspelled Electris sandwichensis and three of the five common names have mistakes. In addition the crustacean Atya bisulcata has been changed to the genus, Atyoides.

Water temperature was not given much attention in the Draft EIS. For the following reasons we suggest that more discussion be devoted to the water temperature change. First, the penstock will be covered for 50 percent of its length, which means it will be open to direct environmental

factors, including the sun, for approximately 50 percent of its length. This will be especially important during the initial operation since vegetative cover will not have been replaced. We expect the water inside of the penstock will reach a higher than normal temperature. Also, heat will be generated by the turbine, and finally, the simple fact that there will be less water in the stream will cause the temperature to rise. Considering these factors, we believe that more discussion is needed in this area.

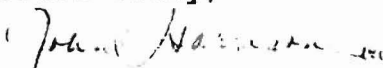
The archaeological survey was conducted over heavily vegetated terrain, and the archaeologist who surveyed the area is uncertain that there are no archaeological sites obscured by vegetation. The archaeologist recommends monitoring during the construction phase of the project in case sites are encountered.

We take issue with this type of arrangement. As the H-3 Freeway and Kapalua Hotel projects demonstrate, when we put off necessary survey and testing work until projects begin (or are about to begin) all sorts of problems can arise. Sites may be found which are highly significant and which may delay the project. Thus, we recommend that adequate surveys be conducted now for the project so that we can be relatively certain that there are no significant archaeological sites within the project's boundary.

Page 5 indicates that reserve capacity is presently 29.2 MW which reduces to 12.2 MW when the 12 MW bagasse plant shuts down. By our calculations, withdrawing 12 MW (bagasse) from 29.2 MW (total) leaves 17.2 MW of reserve power, not 12.2 MW as indicated in the text. Furthermore, if the gas turbine produces 22.2 MW, this combined with the 12 MW bagasse plant gives 34.2 MW of reserve power. It appears that the gas generator produces an adequate amount of reserve power for the needs of Kauai Electric Division. With this being the case, it is difficult to see the need for a minor 1.26 MW plant. This small amount of additional power does not appear to be significant considering the costs, both environmental and economic, of capturing the electricity.

Thank you for the opportunity to comment on this Draft EIS. We look forward to your response.

Yours truly,


John T. Harrison
Environmental Coordinator

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