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DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION

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REF: HP-JLE

MAR 14 1991

Dr. Paul Cleghorn, Leader
Applied Research Group
Bernice P. Bishop Museum
P.O. Box 19000-A
Honolulu, Hawaii 96817-0916

Dear Dr. Cleghorn:

SUBJECT: CDUA HA-2258 -- Historic Preservation Review of
Archaeological Survey and Monitoring Plans for
Geothermal Transmission Line No. 1.
Pohoiki through Keaau, Puna, Hawaii
TMK: 1-3 through 4-various sections

Thank you for submitting on February 12, 1991, the revised report for the inventory survey conducted along the proposed Geothermal Transmission Line in Puna (Davidson, Pantaleo & Sinoto 1991). This submittal also includes a discussion of mitigation measures to deal with known or suspected lava tubes that cross the alignment and a plan to monitor vegetation clearing and the augering pole placements.

My staff has reviewed the report and find that the inventory survey will be acceptable after some minor revisions (Attachment 1). If you disagree with these comments, please schedule a consultation meeting so the disagreements can be resolved. Otherwise, the report should be resubmitted with the revisions made.

We have a serious concern with the mitigation proposal. We disagree with some elements of the mitigation plan. My staff thought that these issues had been resolved in their prior meeting with you, with specific mitigation approaches chosen. This submittal alters those approaches. Specifically, we do not agree with the recommended mitigation measures for dealing with known lava tubes. We also disagree with one part of the monitoring plan along the highway. These disagreements are discussed below. They require rapid resolution in order for construction to begin in the vicinity of caves which are known, significant historic sites.

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- 1) Mitigation Measures for Known Lava Tubes -- We do not agree with the recommended mitigation measure (pp. 11-12) of using a borehole to identify known tube locations. This approach would have an "adverse effect" on these significant sites, and we made this point clear in our prior review and meetings. It was our understanding from the prior meeting that the agreed upon mitigation approach was to specifically locate the known tubes prior to construction in their vicinity and then avoid the tubes completely in pole placement and any other construction activities. We were extremely disturbed by the statement on the cover sheet to this report which stated that the area near Site 50-Ha-A4-69 had been "augured today and the tube was successfully avoided." -- a step clearly in conflict with the agreed upon mitigation plan and a step which could have adversely effected the site.

We feel that the task of prior location of the caves and then avoidance is feasible and does not incur an unreasonable cost. Contrary to the statement that tube entrances are a "considerable distance" from the corridor, three of the four known lava tubes have entrances lying within 500 feet of the corridor. Although geomagnetic influences can skew compass bearings, tape and compass maps of lava tubes can be quite accurate if bearings are checked through back shots or triangulation. In this circumstance, it seems that any margin of error could be accommodated by flexibility in pole placements and distance between pole intervals.

Your new proposal deviates from the prior agreement on mitigation. We find that this proposal is not acceptable and would likely have an "adverse effect". Construction may not approach these caves until an appropriate mitigation approach is agreed upon by our department. Your proposal, because it involves potential adverse effects to the known significant sites with burials, will have to be brought before the Hawaii Island Burial Council for their comments, as we stated in our letter of January 7, 1991. Their next meeting is on March 21, 1991, and your proposal could be scheduled for the agenda. However, we would strongly advise keeping to the original mitigation agreement of plotting these caves' specific location and avoidance (without augering) as a much easier and quicker approach and as an approach which will better protect the sites.

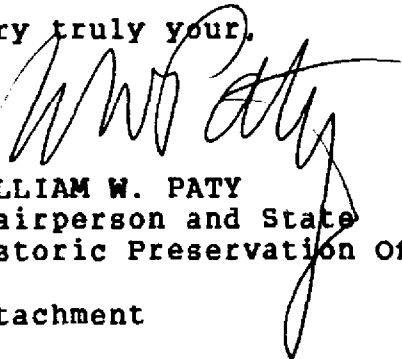
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Please contact us on this matter as soon as possible. We are also sending your client a copy of this letter, so they are aware of the problem and its importance in relation to their construction plans.

- 2) Monitoring Plan for Augering Along Roadway. For augering along the roadway, it is recommended (page 12) that "monitoring will be performed only when there is a change in the general terrain." In concept this approach is acceptable. However, as stated in our letter of January 7, 1991, we ask that the plan include a strategy for which areas would and would not be monitored. Such a strategy must include specifics. This plan should include a rough description of how many terrain changes are crossed by the corridor and how this monitoring will sample these variations. Also, attempts to define areas where unidentified tubes are more likely should be built into this plan and the sampling approach. The authors of the survey report have now seen the entire alignment and should be able to easily categorize these terrain changes. Thus, this plan should be easy to prepare, and it need not be lengthy.

Please contact Holly McEldowney regarding the mitigation measures or the monitoring plan. We stress that no augering for pole placements should occur near known lava tubes until we have resolved the appropriate mitigation approach.

Very truly yours,



WILLIAM W. PATY
Chairperson and State
Historic Preservation Officer

Attachment

cc: Mr. Fernandez, Hawaiian Electric Co.
Manabu Tagomori

Attachment 1

Revisions Needed for

Davidson, Pantaleo & Sinoto 1990
Pohoiki Transmission Line Inventory Survey Report

1. Site 50-Ha-A4-68 (Refuge Cave) = State No. 50-10-45-14,900. We have determined that this tube is eligible for inclusion on the Hawaii and National Register under criteria "a", "b", "c", "d" and "e". This should be included.
2. Site 14,900. The description of the fortified entrance should be described in some more detail. The entire collapsed entrance to the tube has been sealed by an artificial ediface which allows only three narrow passage ways to the tube. The stone workmanship is very impressive. The statement that the sink appears to have undergone extensive modification is not clear. Does this mean prehistoric or modern modification? This sink or entry collapse leads into a single lava tube which leads up and down slope from the entrance. Any side passages near this entrance either rejoin the main chamber or deadend. The tube does split into two main passages some distance makai of this entrance so that two passages of this single lava tube cross beneath the road corridor. This is stated correctly on page 8 but not on page 10.
3. Site 14,900. The lava tube described by Martha Yent (1983) is the upper extension of this tube and thus has the same site number. This must be revised.
4. Site 50-Ha-A4-69 (Burial Cave) = State No. 50-10-55-14,901. We determined this site to be significant under criteria "e" (importance or value to the Hawaiian people) and "d" (information it could yeild). This is a single lava tube and not "a set of lava tubes" which crosses the Pahoia Waste Transfer Station Road in two places. On page 9, it should be stated that the tube crosses the road twice.
5. On page 8, Tube System 2 (near Ainaloa Blvd) has been recorded archaeologically and was given State Site No. 50-10-45-10,001. In its entirety, the historic remains found in this tube would probably be eligible for inclusion in the Hawaii and National Register. Accordingly, this should be reflected in paragraph 3 of the Abstract (Three of these tubes have been previously identified...).

6. In the Abstract, the authors state that the tubes have an "...overburden thickness (15 ft or more)..." What is this estimate based on? On page 6, it is again stated, without justification, that the "estimated depth of overburden overlying the known lava tubes indicates that augering will not penetrate tube ceilings". These statements should be removed unless they can be supported. Again we warn that roof thickness can vary greatly even within a single tube and we do not know of any figures that estimate an average thickness.

7. In the Abstract, the itemized distances do not add up to the total given for the alignment in paragraph 1. Is there a reason they shouldn't? Also the areal extent of Phase B is given as 1.1 miles while the itemized distances given in the paragraph above it equals 1.2 miles.