NCPA NO.2
IX
COMMENTS AND RESPONSES TO DRAFT JES

3. Minor revisions were made to Biological Resources mitigation measures related to revegetation and the prescribed burning program to reflect current policies and procedures of the Bureau of Land Management.

4. The discussion of transport and storage of potentially toxic or hazardous materials associated with the proposed project was expanded in response to comments received from CALTRANS and the U.S. Department of Health, Education and Welfare.

5. The discussion of transmission route alternatives was expanded to provide additional information for the route identified in the Draft JES as "Alternate A." This route was among those initially considered by NCPA and Energy Commission staff suggested during the hearings that use of this route offered energy savings and greater system reliability, compared to NCPA's preferred route. The environmental characteristics of this route are generally the same as those of the preferred route but detailed on-the-ground surveys have not been conducted and tower sites have not been selected.

CALIFORNIA ENERGY COMMISSION

February 22, 1980

JOHN L. GEESMAN
Executive Director

Attachment

INTRODUCTION

In order to provide an opportunity for other agencies and the public to participate in the environmental impact report process, the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NCPA) allow for a public review period for Draft environmental documents. For the Draft Joint Environmental Study (JES) this review period was set at 45 days, commencing on November 26, 1979 and closing on January 10, 1980.

Following release of the Draft JES, comment was received during the public information workshop on the JES held in Middletown, Lake County, during the Energy Commission's regulatory proceedings on the project, or in letters written to the JES Coordinator. The log on the next page lists the names of those who commented on the Draft JES and the dates the comments were sent and received.

Copies of the comments received are included in this chapter. Following each letter or set of comments are staff responses. Numbers appearing in parentheses in the margins of the letters or comments correspond to the numbered staff responses. Where noted, sections of the Draft JES have been revised in response to comments and changes in the text are indicated by a vertical line in the left margin. Comments received which require no staff response are in the following section.

LOG OF COMMENTS ON DRAFT JES
NCPA NO. 2 GEOTHERMAL PROJECT

Date Sent	Commenting Party/Agency	Date Received
11/29/79	California Dept. of Transportation, Dist. 4	12/4/79
12/5/79	U.S. Army Corps of Engineers, Permit Impact Assessment Sec.	12/6/79
12/7/79	California Dept. of Transportation, Div. of Aeronautics	12/7/79
12/11-13/79	Energy Commission hearings on project	12/11-13/79
12/17/79	Public Information Workshop on JES in Middletown, Lake Co.	12/17/79
12/18/79	U.S. Department of Interior, Bureau of Indian Affairs	12/20/79
12/27/79	John Ingram	1/4/80
12/28/79	U.S. Dept. of Interior, Bureau of Mines	1/4/80
12/30/79	Alton Minter, resident of Anderson Springs	1/4/80
12/31/79	California Trout	1/4/80
1/4/80	Energy Commission hearing on project	1/4/80
1/4/80	Northern California Power Agency (Draft)	1/4/80
1/8/80	Energy Commission hearing on project	1/8/80
12/28/79	U.S. Dept. of Agriculture, Soil Conservation Service	1/8/80
1/3/80	U.S. Dept. of Interior, Fish & Wildlife Service, Div. of Ecological Services	1/8/80
1/3/80	U.S. Dept. of HEW, Public Health Service	1/8/80
1/3/80	California Office of Planning and Research Enclosure 1: California Resources Agency (12/11/79) Enclosure 2: California Dept. of Transportation (11/29/79)	1/8/80
1/7/80	Northern California Power Agency (Final)	1/10/80
1/8/80	Shell Oil Company	1/11/80
1/7/80	U.S. Dept. of Transportation, Federal Aviation Admin.	1/14/80
1/10/80	Lake County Air Pollution Control District	1/10/80
1/10/80	U.S. Dept. of Interior, Water and Power Resources Services, (formerly Bureau of Reclamation)	1/14/80
1/10/80	U.S. Dept. of Interior, Fish and Wildlife Service, Sacramento Endangered Species Office	1/14/80
1/16/80	U.S. Dept. of Interior, Heritage Conservation and Recreation Service (formerly Bureau of Outdoor Recreation)	1/17/80
2/11/80	California Department of Health Services, Radiologic Health Section	2/14/80
2/13/80	U.S. Environmental Protection Agency, Region IX	2/14/80

COMMENTS REQUIRING RESPONSE

1. Northern California Power Agency
2. Shell Oil Company
3. Staff Workshop in Middletown, Lake County
4. California Department of Transportation, District 4
5. U.S. Department of the Army, Corps of Engineers
6. California Department of Transportation, Division of Aeronautics
7. John Ingram, Lake County resident
8. Alton Minter, Anderson Springs (Lake County) resident
9. California Trout
10. U.S. Department of Health, Education and Welfare, Public Health Service
11. California Office of Planning and Research - Resources Agency, Division of Oil and Gas
12. U.S. Department of Interior, Heritage Conservation and Recreation Service
13. U.S. Department of Interior, Fish and Wildlife Service, Endangered Species Office
14. Lake County Air Pollution Control District

NCPA COMMENTS TO:

Joint Environmental Study

Dated November 1979 and

Errata Sheet Dated December 12, 1979

ERRATA SHEET

P. 2 Page IV-27, Paragraph 9, Line 1: (1)

This item is uncertain and will be addressed in January 4, 1980 hearings when BLM presents their statement.

P. 3 Page V-9, Paragraph 7, Line 1: (2)

This revised sentence and the paragraph in the JES will be addressed in the January 4 hearings. The transmission losses are considered insignificant and will not produce significant dollar cost savings over increased construction costs.

JOINT ENVIRONMENTAL STUDY

P.i-4, 4th Paragraph, last sentence: (3)

Topsoil greater than 12 inches in depth will be stockpiled.

P.II-9, 1st and 5th Paragraphs are duplicates of each other. (4)

p.II-12, 6th Paragraph: (5)

Correct the first sentence to read:

"The NCPA plans to install duplicate equipment, interconnected piping and circuitry to provide full redundancy of most Generating Plant auxiliary equipment."

(6) P.II-12, 7th Paragraph:

Revise the paragraph to read as follows:

"The power plant site encompassing the surface condenser, condensate piping, cooling tower basins, the reinjection sump, and the Stretford Process will be constructed on an impervious, paved surface and surrounded by a berm of sufficient height to contain and control storm runoff and/or potential spills from one cooling tower and condensate system."

(7) P.II-14, 2nd Paragraph, last sentence:

Replace word "only" with "most economic".

(8) P.II-15, 6th Paragraph, last sentence:

- Correct "one mile" to read "one-half mile"
- Correct "five acres" to read "one acre".

(9) P.II-16, 6th Paragraph, 2nd sentence:

Correct "30 percent" to read "20 percent".

(10) P.III-6, 3rd Paragraph, last sentence:

Correct "(one centimeter)" to read "(one half centimeter)".

(11) P.III-6, 5th Paragraph, 1st sentence:

Correct "site" to read "project area".

(12) P.III,10, 3rd Paragraph, first sentence:

Correct "Table III-4" to read "Table III-3".

(13) P.III-19, 3rd Paragraph, 3rd sentence:

Correct "90 acres" to read "52 acres above the sedimentation pond."

(14) P.III-22, 3rd Paragraph:

Dr. James A. Nielson of ECOVIEW has observed the seep to be dry on two separate occasions. This is in contrast to the regulatory agency staff observation and conclusion stated.

P.III-26, 5th Paragraph (indented): (15)

The facts stated in this paragraph also are in contrast to the staff conclusion stated on page III-22, 3rd paragraph regarding the seep.

P.III-29, 1st Paragraph: (16)

Some of the required baseline studies have been completed and are identified as follows:

NOI Vol 2: Section 5 including referenced Plan of Utilization Section IV pp 48, Section VI pp 2 and all DEIR's; CEC Staff quote: "...the ECOVIEW DEIR's contain a significant amount of the required information, particularly the DEIR for well sites C and D."

Sept. 26, 1978 Response to First Data Request of CEC Staff dated September 6, 1978: Section IX.

Dec. 15, 1978 Response to Data Request of CEC Staff dated Sept. 6, 1978, Section IX Biological Resources, Inquiry 5(a) thru (e) concerning cooling tower drift.

AFC: Section IV, pages IV-6, 15, 16, 18 & 22.

July 27, 1979 Response to Data Request of CEC Staff dated June 28, 1979, Section XII, pages XII-14 & 15.

P.III-32, 2nd Paragraph, replace last sentence: (17)

"A few willows exist near the seep; none of the "riparian" species listed in the following paragraph are present."

P.III-34, 1st Paragraph, last sentence: (18)

An additional survey is needed in summer only since a survey was conducted by Dr. James A. Neilson in the spring of 1975.

(19) P.III-34, 5th Paragraph, first sentence:

Add the work "may" immediately after "manuals".

(20) P.III-38, Figure III-II:

We recommend that the proposed site be identified on the map.

(21) P.III-41, 2nd Paragraph, last sentence:

Change distance from "2 miles" to "2-1/2 miles".

(22) P.III-47, List of Studies bottom of page:

Add "Geysers-Cobb Valley Air Quality Study, 1978-79"

(23) P.IV-2, 1st Paragraph under "Mitigation Measures":

Insert in the last sentence between "project" and "will" "except for the cooling tower basin."

(24) P.IV-3, 2nd Paragraph:

The figures given in this paragraph for seismic design values are subject to change pending resolution of this criteria with the CEC Staff.

(25) P.IV-7, 4th Paragraph:

Delete last sentence: "since the soils...from high to very high".

(26) P.IV-8, 3rd Item under "Mitigation Measures":

In last sentence after the word "topsoil" insert "in excess of 12 inches".

(27) P.IV-12, 1st Item top of page:

Replace first word "Any" and fourteenth word "any" with "The first half inch of ...."

(28) P.IV-12, 1st Item under Mitigation Measures":

Add sentence "The end of the rainy season will be determined by the Sonoma County Building Department."

P.IV-13, 2nd Paragraph: (29)

Add sentence: "The inspection and monitoring activity will be conducted the first year only with subsequent activity as agreed to by the NCPA and USGS."

P.IV-14, Item in first full paragraph: (30)

The spill contingency plan was filed with the required agencies on December 21, 1979.

P.IV-16, Item at top of page: (31)

Replace the word "pumped" with the words: "will be transferred."

P.IV-20, 4th Paragraph, 2nd sentence: (32)

Change "one-quarter of an acre" to read "1500 square feet".

P.IV-21, 1st Paragraph; 2nd line: (33)

After "...preparation and construction", insert: "Statement by R. Osterling: "Throughout the growing and flowering season, the Transmission Tower 2 site was reviewed for Streptanthus morrisonii; none were located by BLM personnel or myself".

P.IV-21, 1st Paragraph under " The New Access Roads-": (34)

. Correct "one mile" to read "one-half mile"

. Correct "5 acres" to read "less than 1-1/2 acres"

. Correct "2-1/2 acres" to read "3/4 acres"

P.IV-22, 2nd Item, last sentence: (35)

Appendix "D" contains only UTE species.

P.IV-23, 1st Full Item: (36)

Only shrubs and trees will receive periodic irrigation as needed during the dry season.

(37) P.IV-23, 2nd Full Item:

Replace: "California Department of Fish and Game (CDFG) and various Agriculture Extension Agents" with "USGS".

(38) P.IV-26, 1st Full Item:

All construction sites have been inspected and no UTE plants have been found on any of the construction sites. If when actual construction starts, any UTE plants are found, the need for adjustment or relocation of the activity will be assessed by USGS.

(39) P.IV-26, 4th Full Item:

This item is applicable to the project site only.

(40) P.IV-27, Last item on page (continued on P.IV-28):

A BLM presentation and further discussion will occur at the January 4, 1980 hearings.

(41) P.IV-28, 2nd Full item, 1st sentence:

Change word "workers" to "contractors".

(42) P.IV-28, 1st Paragraph under "Impacts to Seeps.....":

Change 3rd sentence to: "Presently rainfall, runoff, and the natural seep combine to provide a water resource which supports a few willows."

(43) P.IV-29, 3rd Item under "Mitigation Measures":

Delete: "...and across the proposed road located along the toe of the fill slope."

(44) P.IV-29, 4th Item under "Mitigation Measures":

Delete: Last sentence.

P.IV-30, 2nd Item under "Mitigation Measures": (45)

Monitoring studies should be limited to the site and sedimentation basin only and exclude everything downstream from the sedimentation basin since monitoring by others occurs downstream in Big Sulphur Creek.

P.IV-32, 5th Paragraph, 1st sentence: (46)

Correct "one mile" to read "one-half acre".

P.IV-41, Item under "Mitigation Measures": (47)

This item is not applicable since NCPA has already agreed to install a secondary abatement system and to operate it if necessary.

P.IV-43, All Mitigation Measures: (48)

These should be replaced with the items in the NSCAPCO's (Tolmasoff) letter dated November 15, 1979, as ammended in Exhibit 7 of the 2nd Prehearing Conference, November 20, 1979.

P.IV-60, All Items under "Mitigation Measures": (49)

These requirements will be in accordance with the final Monitoring and Compliance Plan.

P.IV-83, (page mis-numbered), Item under "Mitigation Measures": (50)

NCPA questions the need for this requirement.

P.IV-84, (page mis-numbered) Item C: (51)

Add to the sentence, "where it does not conflict with the soils and hydrology sections of the JES."

P.VI-85, (page mis-numbered), Last item under "Mitigation Measures": (52)

NCPA questions the need for this requirement.

(53) P.V-10, Figure V-2:

The figure is misleading as to spatial relationships. Additionally, Alt. A is 2.46 miles in length and the Future Pine Flat Substation at Castle Rock Junction is an uncertainty since it has not been proposed and should, therefore, be identified as "possible future".

(54) Appendix A-5, Soil Additives:

The Staff determined no calcium would be utilized. Page IV-22 requires the addition of lime specifically for calcium.

Staff Responses to Comments

from

NORTHERN CALIFORNIA POWER AGENCY

1. Page IV-27, paragraph 9: The text in the Draft JES described a prescriptive chaparral burning program which NCPA was to undertake in order to compensate for vegetation disturbance and losses related to project site development. NCPA raised several questions about this program during the Energy Commission's regulatory hearings. Following discussion among representatives of NCPA and the participating regulatory agencies, BLM has modified the wording in this mitigation measure. The new wording will be incorporated in the BLM license for the proposed project and the text on page IV-29 has also been revised.

2. Page V-9, paragraph 7: The text in the Draft JES published in November, 1979 was revised by staff in an errata sheet distributed December 12, 1979. The revision changed the first sentence of paragraph 7 to read: "By transmitting the power from the proposed project directly to Castle Rock junction, significant losses on the main line could be avoided." NCPA disagrees with this statement.

During the Energy Commission's regulatory hearings held December 10-12, 1979, and January 4 and 8, 1980, staff and NCPA each presented their arguments on the transmission system planning and route selection issue. Staff believes that the information presented by both parties during the hearings addresses the issue. In addition, those portions of the JES which discuss the alternative transmission routes considered

by NCPA in planning the proposed project have been revised in order to further clarify the various features and aspects of these routes. Refer to revisions in Chapters II, III, IV, and V, under "Transmission Route Alternatives."

3. Page i-4, paragraph 4: Staff disagrees with the proposed change. As stated in the JES (III-15) soils in The Geysers are thin and the top soil would seldom exceed 12 inches in depth. Staff believes that most existing top soils in the project development area, because of their physical characteristics and organic content, would be beneficial in required re-vegetation efforts. The organic matter in soils would also contain seeds of plant species native to the cleared areas and preferred for reestablishment of vegetation on areas disturbed during project development.

4. Page II-9, paragraphs 1 and 5: Duplicate wording has been deleted.

5. Page II-12, paragraph 6: Sentence has been revised to include correct project description.

6. Page II-12, paragraph 7: Based upon the revision suggested by NCPA, staff has revised this paragraph to clarify which portions of the proposed power plant site would be bermed and which would be located on an impermeable surface. However, staff felt the wording suggested by NCPA could be so specific as to exclude certain project components and chose to retain more broadly descriptive wording.

7. Page II-14, paragraph 2: Staff agrees to replace the word "only" with the word "economic."

8. Page II-15, paragraph 6: Corrections have been made to text.

9. Page II-16, paragraph 6: Correction has been made to text.

10. Page III-6, paragraph 3: Correction has been made to text.

11. Page III-6, paragraph 5: Staff disagrees with proposed change. As defined on page I-7, the term "Project area" refers to all land and facilities located within the boundaries of Shell's combined leasehold, lease #CA-949 and #CA-950. Figure III-4, "Reconnaisance Geologic Map of Site," shows an area labelled, "Qal," which lies to the southwest, south and southeast of the proposed power plant site. As noted in the legend for this figure this designation refers to "Stream Channel Deposits."

12. Page III-10, paragraph 3: The designation, "Table III-4," was correct as printed. This table was inadvertently left out of the text of the document printed and distributed in late November 1979. This oversight was corrected by staff through the Errata Sheet presented to the Energy Commission during its hearings in mid-December 1979.

This table does not appear in the Final JES because the data it presented have been superceded by the results of additional geotechnical evaluation and refinement of the seismic design criteria. Refer also to response #24.

13. Page III-19, paragraph 3: Staff disagrees with suggested change. The sentence was intended to indicate the total area drained by the small, unnamed tributary of Big Sulphur Creek not just that portion lying above the site of the proposed sedimentation basin.

14. Page III-22, paragraph 3: Staff acknowledges that there may be a difference of opinion regarding the amount and availability of water, year-round, in the seep. However, as noted in the JES text, staff of several regulatory agencies participating in review and evaluation of the proposed project have observed available water in the seep area at the end of the summer dry season and prior to winter rains. See staff's comments below.

The CEC staff recognizes that their position that the seep provides a year-round water supply which has value for wildlife conflicts with the information provided by ECOVIEW. The CEC Biological Resources staff has observed the seep in September of 1978 and 1979 prior to the fall rains. In both years there were pools of water with slight flows along the seep. The seep appears to occur in an area between two drainage tributaries which drain toward the site from the hill southeast of the site. Within this drainage between the tributaries, the approximate length of the seep is around 100 feet.

The availability of the water in the seep and the value to wildlife has also been noted in the letter from California Department of Fish and Game (10/10/78, page 6). Also, NCPA's response to NOI Biological Resources Finding 10 (SAI response, 12/15/75) states in reference to geotechnical investigations of the proposed plant site initiated October 20, 1978 that, "Flowing water has been observed, even during prolonged dry weather, indicating existance of seeps near the drainage channel southeast of the knob." On the following page is the statement, "A surface seep southeast of the pad indicates a groundwater level at or near the surface at that location."

Based on staff's own independent evaluation of the seep, indications of associated wildlife use and the above information, staff has reached the conclusion that the seep area provides year-round water which is of local value to wildlife.

A conflicting opinion, however, is found in a letter from ECOVIEW (10/5/78). The letter states that based on observations and evaluation of Drs. Leitner and Neilson the seep does not provide a year-round water source and therefore, is not of much significance to wildlife.

15. Page III-26, paragraph 5: Staff disagrees that the facts in the statement by NCPA which is quoted in this paragraph, are in contrast to the staff conclusion that there is a seep in the drainage below the proposed plant site which has year-round water. The subject paragraph is discussing flows in Big Sulphur Creek, downstream from the seep in the unnamed tributary below the plant site. As described by staff on page III-22 the "unnamed tributary...is ephemeral (dry in the summer months)...." but "...a seep occurs in the tributary channel...." and "...during a visit to the project site in September, 1978, regulatory agency staff observed a small flow in the seep...."

16. Page III-29, paragraph 1: Staff disagrees that required baseline studies have been completed. As discussed in staff's comments below, although a number of studies have taken place, the information obtained may not meet the requirements of the U.S. Geological Survey's "Geothermal Resources Operations Order 4" which requires an environmental baseline study to be completed one year prior to operation of a proposed project.

Staff has reviewed the information cited by the Applicant. Based on all the information provided to date in support of the Applicant's NOI and AFC filings, it is the CEC staff's opinion and that of USGS, BLM, and CDFG that the mitigation measures and additional studies identified in the JES, pages III-28 to III-26 and pages IV-19 to IV-34, which are summarized in the staff December 1979 document, "Summary of Studies and Mitigation Measures Identified in Biology Section of November 1979 Draft Joint Environmental Study," should be implemented as conditions on the AFC license.

The cited CEC staff reference, "...the ECOVIEW DEIR's contain a significant amount of the required information, particularly the DEIR for well sites C and D" was in reference to the material needed for an NOI. The Final Report on the NOI indicated in Findings 10, 12, and 13, Conclusions 1 and 2, and in the Committee's Points of Clarification that additional information was required for an AFC filing, particularly a detailed mitigation plan. To date this information has not been provided by the Applicant.

The staff has recommended to the CEC Committee, in the Biological Resources section of the Monitoring and Compliance document, that the Committee for this case exempt the Applicant from the requirement of providing detailed field implementation plans prior to the AFC approval. However, as a condition of the AFC, the Applicant be required to file the detailed field implementation plans for baseline studies, monitoring studies, and mitigation measures within specified time frames with the USGS. To USGS, in consultation with the CEC, will approve the final work statement for implementation by the Applicant of the mitigation measures, baseline studies, and monitoring studies.

17. Page III-32, paragraph 2: Staff does not agree with the proposed change. Elements of riparian vegetation do exist in the lower portion of the seep drainage. Although the vegetation on the west side of this area has been removed by blading,the representative vegetation can be seen on the east side.

18. Page III-34, paragraph 1: Staff does not agree that additional botanical surveys need only be done during summer. Agency staff agree that site-specific botanical surveys will have to be conducted by a qualified botanist during the appropriate seasons in order to identify the species listed by BLM and U S Fish and Wildlife Service in Appendix D of the JES.

19. Page III-34, paragraph 5: Staff agrees to addition of word "may."

20. Page III-38, Figure III-11: Staff agrees that it would be beneficial to identify the proposed project site on this map. It may prove somewhat difficult, however, to accurately place the site since it appears to be located below the bottom edge of the map and no other base map showing the H_2S sampling sites is immediately available.

21. Page III-41, paragraph 2: Correction has been made to text.

22. Page IV-47, footnoted list: Addition has been made to list.

23. Page IV-2, paragraph 1 under Mitigation Measures: Staff has made suggested word change.

24. Page IV-3, paragraph 2: Based upon information presented in recent seismic design studies completed by consultants to NCPA, and discussed by NCPA and staff in workshops, the text has been revised to reflect current seismic design values.

25. Page IV-7, paragraph 4: Staff has revised this paragraph and the discussion presented under "Soil Erosion" to clarify the relationship of the Universal Soil Loss Equation to potential losses through exposure and erosion at the proposed project site compared to values derived for the PGandE Unit 17 project site. Staff has concluded that, while the potential for erosion at and adjacent to the proposed site ranges from high to very high, actual erosion may not be as severe as that projected from the Unit 17 site studies.

26. Page IV-8, Mitigation Measure 3: Refer to response 3.

27. Page IV-12, paragraph 1: Staff disagrees with suggested wording. The objective of this mitigation measure is to prevent contaminants from entering ground or surface waters. Thus any run-off produced during any amount of rainfall should be diverted for reinjection if the rainfall follows a spill of any substance which could contaminate the ground or surface waters.

28. Page IV-12, paragraph 6: Staff agrees that determination of the start and the end of the rainy season should be made by the responsible regulatory agencies. A new sentence to this effect has been added to the text.

29. Page IV-13, paragraph 2: Staff appreciates NCPA's desire to set some limits to length of time over which the sedimentation basin will be monitored,

however they do not agree with the suggested wording. Staff has modified the wording of the mitigation measure to allow for future discussion on flexibility in the timing for monitoring and inspection activities, based upon results of these activities.

30. Page IV-14, paragraph 1: Staff agrees to necessary changes to reflect the filing of the spill contingency plan with the North Coast RWQCB.

31. Page IV-16, paragraph 1: Staff agrees with suggested word change.

32. Page IV-20, paragraph 4: Based on the photo-topographic plant site area map (scale 1" = 500'), provided by the Applicant on June 30, 1979, staff estimates the seep and associated dependent vegetation to be about 2,000 square feet. Staff's estimate of the riparian-supported vegetation which would be lost to fill is about 4,900 square feet.

Based upon this evaluation and converting the units from square feet to acres, staff has revised the text and the estimate of the area involved from one-quarter acre to one-eighth acre.

33. Page IV-21, paragraph 1: Staff agrees to incorporate the information provided by the consultant to NCPA.

34. Page IV-21, paragraph 2: Staff agrees to incorporate corrected measurements of acreage of vegetation and miles of road to be constructed.

35. Page IV-22, paragraph 2: Staff agrees with comment and has revised text to clarify contents of Appendix D.

36. Page IV-23, paragraph 1: Staff has incorporated NCPA's suggestion in supplementary wording.

37. Page IV-23, paragraph 3: Staff does not agree with the proposed change. There are two factors to be considered at the NCPA No. 2 site in determining what plant species should be used for revegetation: 1) those species which will be effective in stabilizing the cut and fill areas to reduce erosion and 2) to ensure that the species selected will not compete with Streptanthus morrisonii. The second full item on page IV-23 addresses the first concern and the item at the bottom of page IV-25 and top of IV-26 addresses the second concern.

Staff's opinion is that the item should remain as written because it is NCPA's responsibility to use a species mix that will be suitable for site specific soil and slope conditions. If a change is to be made it should be in line two at the top of page IV-23, to read:

"...with the consent of USGS in consultation with the Bureau of Land Management."

38. Page IV-26, paragraph 1: Staff disagrees and would not recommend this change. It is a point of contention by CEC, USFWS, and USGS that onsite botanical surveys have not been adequate to ensure that all UTE plant species listed in Appendix D do not occur in the project area.

39. Page IV-26, paragraph 4: Staff does not agree to suggested change in wording. This mitigation measure is applicable to the full project area, including the project site.

40. Page IV-27, last paragraph and Page IV-28, paragraph 1: See Response 1. Text has been revised based upon new wording provided by BLM.

41. Page IV-28, paragraph 3: Staff does not agree with suggested change. NCPA has a responsibility to notify its contractors of any conditions placed upon their proposed project by regulatory agencies. This responsibility also extends down through the contractors to the workers.

Staff's understanding is that all workers at the site which might be involved in construction activities in sensitive biological resource areas would be informed to avoid impacts to the sensitive areas.

42. Page IV-28, paragraph 5: Staff does not agree to the change. This is a point of contention in the case. Staff's position is that the seep supports vegetation in addition to willows which has value to wildlife.

43. Page IV-29, Mitigation Measure 3: Staff does not agree to the deletion unless NCPA provides the details for an alternative location and design which is agreeable to the concerned agencies (BLM, USGS, CDFG, CEC, USFWS).

44. Page IV-29, Mitigation Measure 4: Staff does not agree that sentence should

be deleted but has modified it, based upon discussion among regulatory agency staff, so that the area to be replanted cannot be construed to extend downstream without limitation.

45. Page IV-30, Mitigation Measure 2: Staff does not agree with limits of studies suggested by NCPA. Staff's position is that there should be off-site monitoring, outside the leasehold, to assess impacts to the fishery near the point where potential impacts from the proposed project would first occur. Staff has no objection to NCPA participating jointly in other studies and/or monitoring programs which may be in progress or recommended during future CEC project certification proceedings.

46. Page IV-32, paragraph 5: Staff agrees with suggested change.

47. Page IV-41, paragraph 1: Staff has revised wording in this mitigation measure to reflect results of preliminary testing of the Stretford process at Geysers Unit 15 and the conditions set by the Northern Sonoma County Air Pollution Control District Officer in his Determination of Compliance filed with the Energy Commission on December 10, 1979 (see Appendix E).

48. Page IV-43, All mitigation measures: Staff does not agree that all items set out here as "Recommended Post-Certification Procedures" should be replaced by the NSCAPCD's Determination of Compliance. However, staff has revised and supplemented these items to be consistent with the information contained in the Determination of Compliance.

49. Page IV-60, Mitigation Measures: Staff concurs with comment by NCPA that the measures listed will be in accord with final Monitoring and Compliance Plan prepared by the Energy Commission for the proposed project.

50. Page IV-83, paragraph 5: Staff believes that photo simulation portrayal of proposed facility design elements is useful for evaluation of potential aesthetic impacts. Wording of this mitigation measure has been revised to clarify timing of this submittal to BLM.

51. Page IV-84, Item "c": Staff agrees with suggested change.

52. Page IV-85, paragraph 7: Staff believes that this item is more appropriately included in air quality mitigation measures as a means of reducing hydrogen sulfide emissions during plant shut-downs. Staff realizes that discussions of feasibility of interconnections of steam supply also must include the supplier. See also Staff response 64, to Shell Oil Company.

53. Page V-10, Figure V-2: Staff understands that the figure from the AFC, incorporated in the JES, is only a diagrammatic representation of the four transmission route alternatives considered by NCPA. However, it was the only figure available which provided such a representation. The number of miles indicated for Alternate 2 has been modified to reflect the recent delineation of this route on a larger scale map, entered into the record of the Energy Commission's hearings on the proposed project.

Staff realizes that there is uncertainty related to the Pine Flat Substation at Castle Rock Junction, however, staff believes that use of the term "proposed" or "future" in discussion of this facility indicates that it does not yet exist and the timing of its existence is still uncertain. Based upon staff analysis of transmission system planning principles and anticipated transmission capacity needs associated with future geothermal development in The Geysers KGRA, staff believes that there will be a need for an additional substation and/or switching facility in the area.

54. Page A-5, "Soils": Staff is aware of the apparent conflict between the determination made in the Initial Impact Identification Matrices, prepared by staff between September and November, 1978 and the revegetation measures set forth on page IV-22 of the JES in November 1979. The mitigation measures in the body of the JES represent the most current requirements and information available to the participating regulatory agencies and supercede initial comments made over a year ago, during initial preparation of the Impact Identification Matrices.

SHELL OIL COMPANY
P. O. BOX 4848
511 N. BROOKHURST STREET
ANAHEIM, CALIFORNIA 92803

January 8, 1980

Subject: Joint Environmental Study
Northern California Power Agency
NCPA No. 2 Geothermal Power Plant
Sonoma County

Kathryn M. Matthews
California Energy Commission
1111 Howe Avenue, MS#32
Sacramento, California 95825

Dear Ms. Matthews:

As discussed in our telephone conversation, I wish to make the following comments on behalf of Shell Oil Company relative to the draft Joint Environmental Study with respect to the subject Project. The particular portions of the Joint Environmental Study and the pertinent comments are indicated below:

(1) Page i-4, second complete paragraph, last sentence. (55)
We believe that the word "the" appearing between the words "than" and "mile" should be replaced by the word "one".

(2) Page I-1, fourth paragraph, first sentence. To (56)
avoid ambiguity, we suggest that the reference to this company should read "Shell Oil Company, with offices in Texas and California".

(3) Page II-3, Figure II-2. As the exact route of the (57)
steam gathering system is not final at this time, the map legend would be more accurate if it referred to "proposed steam gathering system".

(4) Page II-9, second paragraph, first sentence. (58)
Presently there are five production wells drilled and completed on the area committed to the NCPA No. 2 project and eight wells within the total area of the two leaseholds. This sentence should be corrected to reflect either situation.

(5) Page II-9, second paragraph, second sentence. This (59)
provision refers to "a designated 1,000 acre production area". As the area in question does not measure 1,000 acres, we feel this provision should be qualified to clearly indicate that such area measurement is approximate. For this purpose we suggest the expression be changed to "designated production area of approximately 1,000 acres".

(60) (6) Page II-16, third paragraph, last sentence. The permits which have been acquired and the size of the well pads allow up to six separate wells on each such pad. Therefore, we suggest that the number "four" appearing in this sentence be changed to "six".

(61) (7) Page IV-15, first paragraph, first sentence. The total facilities contemplated for this project will involve two reinjection surge tanks. The one referred to is a part of the facilities to be installed and operated by NCPA and the second is a part of the facilities to be installed and operated by Shell. This provision should be modified to eliminate any ambiguity as to which tank is referred to. This could be accomplished by labeling the tank referred to as "the NCPA reinjection surge tank".

(62) (8) Page IV-79, topic entitled "Mitigation Measures", second sentence. This provision intimates that Lake County will receive "royalties". As royalty under the leases in question will be paid directly to the United States, we believe what was intended in this provision was the statement that Lake County will receive the taxes assessed on the steam supply facilities which lie within Lake County. Accordingly, we suggest that the word "royalties" be deleted and the words "ad valorem tax income" be substituted therefor.

(63) (9) It appears that the pages numbered VI-83, -84, -85 and -86 should be renumbered IV-83, -84, -85 and -86.

(64) (10) Page IV-85, Mitigation Measures, second item. Based on current negotiations between NCPA and Shell with respect to sale of steam to NCPA from the area under Shell's leasehold east of the land embraced in the subject project, it is now contemplated that steam supply facilities of the subject project will be interconnected with any steam supply facilities installed to supply a power plant or plants constructed by NCPA to the east. There is no present contemplation of any transport of Shell steam by Shell or NCPA to other producers or other steam plant operators. For the sake of accuracy we feel that the latter part of the second item should be modified to read "... and/or crossover interconnections between operating power plants of NCPA".

(65) (11) Page VI-3, first paragraph, second sentence. On the basis of our engineering conclusions, we believe that this provision should be modified by deleting the expression "5-10 percent" and substituting the expression "20 percent".

(12) Page VII-22, definition of GRAYWACKE. It appears (66) that "eldspar" should read "feldspar".

Thank you again for your many courtesies in connection with this project.

Yours very truly,

Legal Department

Staff Responses to Comments

from

SHELL OIL COMPANY

55. Page i-4, paragraph 2: Staff agrees with suggested word change.

56. Page I-1, paragraph 4: Staff agrees with suggested word change.

57. Page II-3, Figure II-2: Staff agrees to suggested change.

58. Page II-9, paragraph 2: Staff has modified wording in text to clarify number of wells, location and relation to proposed project.

59. Page II-9, paragraph 2: Staff has modified wording in text to indicate number of acres is approximate.

60. Page II-16, paragraph 3: Staff agrees with suggested word change.

61. Page IV-15, paragraph 1: Staff agrees with suggested word change.

62. Page IV-79, Mitigation Measures: Staff agrees with suggested word change.

63. Pages "VI-83 through VI-86": Staff has corrected numbering.

64. Page IV-85, Mitigation Measures: Staff was not previously aware of current discussions between Shell and NCPA related to sale of steam for another geothermal power plant to be proposed for location somewhere east of the NCPA No. 2 project. Based upon the information provided in this comment, staff has revised the text to incorporate the possibility of cross-over interconnections between the proposed project and the future project under discussion.

65. Page VI-3, paragraph 1: Staff agrees with suggested word change.

66. Page VII-22, "Graywacke": Staff has made the suggested correction.

Staff Responses to Comments

Received at

STAFF WORKSHOP IN MIDDLETOWN

On December 17, 1979, staff of the Energy Commission conducted a public workshop in Middletown to hear comments on the Draft Joint Environmental Study (DJES) prepared on NCPA's proposed geothermal power plant No. 2.

Since many of the comments received during the workshop related to geothermal development in general, CEC staff has paraphrased those comments made by participating members of the public which are pertinent to the proposed project. The complete transcript of the workshop is available for review at the Energy Commission.

The following questions identify the local residents' major concerns:

Q. 67 How would hydrogen peroxide be stored (type of container) and what would be the method and frequency of transportation?

A. 67 H_2O_2 will be transported to the plant in 4,000 gallon tank trucks. A one week supply will be stored on site in a 10,000 gallon aluminum storage tank. Approximately two truck trips per week would be required.

Q. 68 Chapter II, page 55 of the JES stated that Anderson Springs has approximately 200 residences of which 25 percent are permanently occupied. Local residents believe this figure is closer to 75 or 100 percent occupancy at the present time.

A. 68 Based upon this information staff has added a note to this effect to the discussion on page III-55.

Q. 69 Has the Energy Commission tested for and determined if there is asbestos in the total suspended particulates (tsp). Asbestos used to be mined in Lake County.

A. 69 Apparently there have been no analyses for asbestos in either high volume air samples or in geothermal steam at the Geysers (personal communications: D. Robertson, Battelle Pacific Northwest Laboratories 1/16/80; T. Cahill, U.C. Davis 1/16/80; M. Tomalsoff, NSCAPCD, 1/17/80; D. Westerdahl, ARB 1/17/80.

Q. 70 Have there been any low grade radioactive substances other than radon found and recorded in air samples, e.g., chromium. Page III-25, Dry Creek water quality survey data showed 0.4 milligrams of potassium. Is a portion of that radioactive; also, what about magnesium?

A. 70 Studies have been conducted at The Geysers to evaluate the rate of release of radon-222 and other radionuclides, and the significance of this release to nearby residents. PGandE Report 420-78.41 (included in the Unit 17 NOI) summarizes the available data. This report states that ^{210}Pb, ^{230}Th, ^{7}Be, ^{95}Nb, ^{106}Ru, ^{125}Sb, ^{137}Cs and ^{144}Ce were detected in air at The Geysers. The measured concentrations were similar to those found at other locations in the state and none of the values measured were above appropriate reference concentration standards. The sources of these airborne radionuclides are believed to be naturally occurring radioactivity present in the earth's crust, cosmogenic sources, and worldwide fallout from nuclear weapons tests (PGandE Report 420-78.41).

PGandE reports that thirty-six water and steam condensate samples were collected at The Geysers and vicinity in the summer of 1974. Concentrations of ^{226}Ra and ^{210}Pb were below the detectable limit for the analyses (PGandE Report 420-78.41).

Levels of radioactive potassium and magnesium have not been monitored in Dry Creek. Assuming one gram of potassium contains 840 pCi ^{40}K, then the level in Dry Creek would be approximately 0.34 pCi/l ^{40}K (Anspaugh, 1980). There are no known applicable standards for ^{40}K in water, however, this level is not expected to pose a hazard (Vold, 1980; Jepperson and Green, 1980). Due to the short half-life of radioactive magnesium, it is generally not found and virtually none is expected to be present in Dry Creek (Anspaugh, 1980).

Q. 71 On page IV-55, a table shows radon 222 at 0.0122 lbs/hr. Is this correct in lbs/hr?

A. 71 Table IV-6 has been corrected to read 0.0122 Ci/hr radon^{222}.

Q. 72 Aminoil recently had a drill pond spill. What was spilled, how did it occur, and what, if any, damage was done? Who is the responsible regulatory agency?

A. 72 Aminoil's major spill a couple of months ago was the result of operational haphazardness: one crew assigned to do a job wasn't aware of the job another crew had done, resulting in a well sump being pumped to clear what was believed to be rainwater, but was instead, drilling muds deposited by the previous crew. Aminoil has now changed their

operating procedures. Ed Crawford, Central Valley Regional Water Quality Control Board (CVRWQCB) feels that there were no long term effects from this discharge.

These discharges from the well pads are under the control of Division of Oil and Gas (D.O.G.) and the RWQCB (CVRWQCB in this case) and responses should be directed to their Sacramento Office.

Q. 73 If the water supply were to become polluted, what, if any, provisions will be made to supply water to affected residents?

A. 73 If the water quality is impaired to the point that damage is done to someone's potable water supply, and therefore denies them one of their beneficial uses - that person can contact the Regional Water Quality Control Board, the county Health Department, and/or the State Health Department. All have regulations and provisions allowing them to immediately work towards correcting the problem, usually at the source.

Q. 74 What happens to reinjected wastes?

A. 74 The condensate and other liquid wastes are reinjected into the geothermal reservoir, through a well about 10,000 feet deep, where it mixes with other like fluids and again may become steam. The reinjection well is cased (concrete-or steel-sleeved) to a depth of about 6,500 feet. This casing, the solid subterranean rock formations, and tight, highly impermeable soils minimize (even preclude) the possibility of movement of these fluids to potable groundwater supplies, which are scarce.

Q. 75 Does sludge contain harmful material?

A. 75 The cooling tower sludge (settled particulate matter) will contain concentrated amounts of whatever constituents would be found in the steam. These concentrations could be harmful to aquatic life, and perhaps people, if not disposed of properly at a designated waste disposal site for these types of wastes.

Q. 76 Could the material dumped into the Middletown dump site eventually seep into the water system?

A. 76 Not very likely because the Middletown Solid Waste Disposal Site is classified by the CVRWQCB as a Class II-1 site, acceptable only for limited geothermal waste products. Class II-1 sites provide for protection of groundwaters through impermeable barriers, either natural or modified, to preclude lateral and vertical continuity between the wastes and surface or groundwaters.

Drainage away from the waste disposal site, erosion controls, and maintenance of a minimum distance of 15 feet between the wastes and useable groundwaters are also required.

State of California — Business and Transportation Agency

Memorandum

To : Ms. Kathryn M. Matthews
Environmental & Health Office
California Energy Commission
1111 Howe Avenue, M.S. 32
Sacramento, CA 95825

Date: November 29, 1979

File : 04-SON, LAK-128, 175
SCH #78112021

From : **DEPARTMENT OF TRANSPORTATION** - District 4

Subject: Comments on the Draft Joint Environmental Study for NCPA No. 2 Geothermal Power Plant in Sonoma County.

The document disucssed the transport and disposal of toxic/dangerous chemicals from the site, however the transport of such chemicals to the site has not been addressed. There are Federal regulations to comply with in this matter. (77)

Extra-legal vehicle loads will require Transportation Permits from Caltrans. Application for permits can be made at Caltrans Maintenance Stations that serve the area. (78)

R. W. Sieker

R. W. SIEKER
District CEQA Coordinator

Staff Response to Comments

from

CALIFORNIA DEPARTMENT OF TRANSPORTATION - DISTRICT 4

77. The text of the JES has been revised to include an expanded discussion of the potentially toxic and/or hazardous substances to and from the proposed project site. Refer to discussions beginning on pages III-28, III-56, III-73, IV-18, and IV-53.

78. The text of the JES has been revised to include specific reference to the need for CALTRANS permits for transport of over-size loads.

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
211 MAIN STREET
SAN FRANCISCO, CALIFORNIA 94105

SPNED-EA

To: Ms. Kathryn M. Matthews
California Energy Commission
Environmental and Health Office
1111 Howe Avenue, M.S. No. 32
Sacramento, California 95825

Date 5 December 1979

Subject: NCPA Geothermal Power Plant No. 2, near Healdsburg; DES.

Your request for comments from this office was received on 3 Dec 79 by your ~~(letter)~~ (notice) dated 26 November 1979.

(X) The proposed activity may not require Department of the Army Authorization at the present time. However it is requested that (you) ~~(the applicant)~~ contact our Regulatory Functions Branch, Enforcement Section(415-556-5966), (79) for an official Disclaimer.

( ) The following Corps projects or studies may be impacted: NONE

Thank you for including us in your review process.

CF: Proj file - EIR/884 Review
SPNCO-R_N (Murphy)
SPNCO-RF
SPNED (Rdg file)
SPNED-P
SPNED-E (Rdg file)
SPNED-EA (Ward)
SPDPD-R
~~APPLICANT (~~

Rod Chisholm
Chief, Permit Impact Assessment Section
Environmental Branch
(415-556-5412)

Staff Response to Comments

from

U.S. ARMY CORPS OF ENGINEERS

79. As stated in the letter of comment received from Mr. Chisholm, the proposed project does not require Department of the Army authorization. This was confirmed by telephone conversations with Mr. Frank Kelleher of the Regulatory Functions Branch, Enforcement Section, of the San Francisco office. During these discussions with Mr. Kelleher, he indicated that no further action was needed to procure an official disclaimer.

State of California

Business and Transportation Agency

Memorandum

To : Kathryn M. Matthews
Environmental and Health Office
California Energy Commission
1111 Howe Avenue, M.S. No. 32
Sacramento, CA 95825

Date: December 7, 1979

File : Environmental General

From : **DEPARTMENT OF TRANSPORTATION**
Division of Aeronautics

Subject:

The Department of Transportation, Division of Aeronautics, has reviewed the Joint Environmental Study for the Northern California Power Agency (NCPA) Geothermal Power Plant No. 2.

Our review centers on those issues germane to our statutory responsibilities, i.e., noise impact on the development from airport operations, safety of individuals in the airport environs and of airport users themselves, encroachment of incompatible land uses on airports with subsequent public pressure to curtail operations or close the airport, and the impact of the project on the surface transportation complex serving airports.

Our review reveals none of these areas would be influenced by the projected development. There is a planned 2.1 mile overhead transmission line planned from the developed site but that line is planned for installation parallel to, or along ridges and not "skylined", and we see no potential hazard to aerial navigation. One other concern arises from the announced goal of having the support towers for the transmission line so configured as to be inconspicuous, and blend with the background for aesthetic purposes. Should there be any long span involved which might pose a threat to low-flying aircraft, we would urge a policy of hazard marking to make the towers and lines easily visible, rather than inconspicuous. Please see the attached clipping from the Monday, January 3, 1979 issue of the Sacramento Bee. (80)

We have no other comments or concerns about this project and the environmental assessment is thus adequate for our purposes. We will have no discretionary approval authority over the project.

We appreciate the opportunity to comment.

JOHN WEST
Chief

Burd Miller

Burd Miller
Environmental Planner

Small Airplane Severs Power Lines

COLUSA (UPI) — A small airplane apparently severed two electrical transmission lines from The Geysers power plant during the weekend, disrupting service for parts of Mendocino County, a Pacific Gas & Electric Co. spokesman said Sunday.

The plane cut the power lines about 3 miles north of the junction of Highways 16 and 20 Saturday afternoon but did not crash. The destination of the plane was not known immediately.

Utility crews were sent to repair the 115,000-volt lines.

Parts of Willits, Clear Lake and Ft. Bragg were without power Saturday night, "but only for a few minutes with the longest time anybody was without power probably one hour at Ft. Bragg," the PG&E spokesman said.

The power lines span from west of Williams to north of Ukiah.

Staff Responses to Comments

from

CALIFORNIA DEPARTMENT OF TRANSPORTATION,
DIVISION OF AERONAUTICS

80. As proposed by NCPA, transmission alternative route 1 would be installed parallel to or along ridges rather than skylined. This should minimize hazards to aerial navigation. The longest span included in proposed transmission route 1 is approximately 1,800 feet long and would be suspended between a maximum of 110 feet and a minimum of 30 feet above ground level. Staff expects that prudent pilots would not generally enter this air space during normal navigational situations and hazard markings should not be necessary on this route.

Should the towers or lines prove to be hazards to aerial navigation after construction and operation, safety markings would be considered at that time.

Dec.27,1979

Kathryn Mathews
Sacramento, Ca.

Dear Ms. Mathews:

My timberland is located in Lake County at the southern end of Mendocino National Forest on High Valley Ridge. We moved here thirty years ago to escape the air pollution of the L.A. area. It is our feeling that any additional geothermal power plants will add to the chemical trespass of H_2S on our land and to the pollution we are already experiencing here. The primary human right is the right to breathe clean air. (81)

Since 1974, whenthe geothermal development started, we have been experiencing a general decline in our timber resources. This was evidenced before the drought. Air pollution may be the cause of the upset in the balance of nature, resulting in our loss of over 200,000 board feet of Ponderosa Pine timber. (82)

We feel that these problems should be taken under consideration before additional power plants are built.

Yours truly,

John Ingram
Box 636
Glenhaven, Ca.
95443

Staff Response to Comments

From

JOHN INGRAM

81. Under the rules adopted by the Air Pollution Control District responsible for regulation of emissions from geothermal projects in Sonoma County, all proposed new and existing geothermal power plants located in The Geysers KGRA must have or retrofit hydrogen sulfide abatement systems which reduce H_2S emissions to meet the state standard for ambient air of 0.03 parts per million for a one hour average. As long as new and existing geothermal developers are required to meet this standard and as long as these requirements are met, the levels of H_2S in ambient air should not exceed the state standard.

As noted in the JES, this standard was set based upon odor sensitivity. It represents an average level at which the public may become aware of the odor and above which people may begin to register complaints with local regulatory agencies.

82. Staff contacted a number of agencies and researchers* in an attempt to find an answer to your concern about the decline in your timber and the potential relationship between the decline, geothermal development and the presence of H_2S in the air. Based upon the research done to date on effects of H_2S on vegetation and agricultural crops and the effects of oxidants present in smog, it appears that the concentration of H_2S in the ambient air around the timber would have to be at or exceed one part per million for a consistent and sustained period of time. There

are even some indications from preliminary research data that low levels of H_2S in the atmosphere may have a beneficial effect on certain agricultural crops.

Much of the current research on effects of H_2S on vegetation has taken place in controlled atmosphere conditions. The natural atmospheric condition, however, is considerably different and much more difficult to analyze which of the many variables may be causing a particular effect on the vegetation being studied.

Within The Geysers development area several vegetation monitoring programs have been started and, as described in the JES, are recommended to be continued as new geothermal power plants are approved for construction. These studies are looking at the possible effects of long-term exposure to low levels of substances entrained in the plumes from geothermal power plant cooling towers and/or from venting geothermal steam.

Most of these studies are being done within the immediate Geysers development area, near operating geothermal power plants. To our knowledge no monitoring programs or studies are proposed or taking place in areas located many miles outside of the Geysers development area. Staff also has indicated that available analytical methods for air quality monitoring, such as tracer studies, physical and numerical modelling may not be capable of adequately addressing potential impacts when the distance between the source and the sensitive receptor is very great.

Staff would support a Committee recommendation that studies be conducted to collect data from areas outside existing leaseholds. If such additional studies are to be conducted, staff would recommend that they be supported as a cooperative venture by the Energy Commission, present and future utilities using the geothermal resource, steam field developers and other concerned agencies.

Staff shares your concern for potential low level chronic impacts on vegetation related to cooling tower drift or geothermal emissions. Existing information appears to substantiate this concern but the data is not adequate to document or evaluate the size of the area potentially affected. The possibility exists that additional new power plants could contribute to low level chronic effects on vegetation but there are not enough data to be sure.

Staff has sent copies of your letter to the Energy Commission regarding the NCPA No. 2 project to the U.S. Forest Service in Upper Lake and the Lake County Air Pollution Control District. Both agencies have indicated an interest in the issues you have raised and in any further information which becomes available from current or proposed studies of effects of geothermal development on vegetation. The timber management officer at the Upper Lake Ranger Station expressed particular interest in your concerns since they also would be concerned about a decline in timber resources, from whatever cause.

* Persons contacted included: Mr. Jerry Mohl, USFS, Upper Lake; Mr. "Whitey" Tourlelott, USFS, Willow Creek; Mr. Paul Wilson, UCR, plant research on Ponderosa pine and oxidants; Dr. C.R. Thompson, UCR, plant research on H_2S effects; Mr. Jim Bennett, UCD, plant research on air pollution effects on agricultural crops; and staff at the Lake Co. offices of the Farm Advisor and the Agricultural Commissioner.

December 30, 1979
Anderson Springs Annex
Middletown, Calif

Environmental and Health Office
1111 Howe Ave., M.S. No. 32
Sacramento, Calif, 95825
Attn Kathryn M. Matthews:
Geothermal Power Plant No. 2

I have spent about two weeks attempting to compose this letter as short as possible--without success.

Page III-57 Current Ambient Noise Levels: Second paragraph, second sentence " Noise Measurements - - - - -expressed as DBA" To explain this takes some time: Sometime in the early '70s or late 60's the response curves were changed from the natural curves from the microphones to an electrical (electornic) roll-off to the present 'A', 'B' and C curves (But the Laws on the Books WERE not changed) Also with the advent of Jet aircraft and their added noise and longer runways, the NEW Curves Meant that Jets would be breaking the Laws. However they altered the use of A curve to mean that IT would be used for ALL readings OUTDOORS. There was a number of other variations made ALL in favor of allowing Jet Airplanes to operate. (83)

Second Paragraph, third sentence " This - - - - - - -A-scale - - -response of the human ear" would be correct IF this was added to it " at lower sound levels of 50 dBA (45 dBA to 55 dBA)" i.e. as originally designed the A scale would be for sound levels of 45-55dBA, B scale 65dBA-75dBA, and C scale would be essentially Flat or above 85dBA, and between 55dB and 65dB would be the average of the TWO. etc... These three scales matched the Fletcher-Munson Ear Response Curves as close as possible in that the EAR does not hear ALL frequencies at the same level (i.e. with 100 dB the ear hears frequencies ALMOST at the same level, and with say 50dB there is a severe dropoff of Low-frequencies and high frequencies--Take a bell shaped curve and assume that is the B scale, then take one-half of it and use only the left portion and that could be assumed to be the A scale....)

The third sentence could also be altered to read, A scale represents that curve with which the ear is damaged....(high frequencies) Hence the A scale is important to OSHA requirements AND is so specified! BUT the A scale at higher sound levels (above 55dBA) does not represent the way the EAR hears nuisance and annoyance levels!

Fifth paragraph: The last two sentences: Last Night December 29th, we had 1.7" rain which raised the level of the creek--hence in any area of 50-100 feet of Anderson Creek the sound level is 60-65dBA averaging about 63dBA which entirely MASKS the sound of a geothermal well of 50dBA at Anderson Springs Annex about 2.5 miles from the well. The low frequency rumble in the last sentence refers to Drill Rig Machinery, and this changes to full frequency when Steam has been hit.

Better Mufflers have been added to the Diesels, and they don't Rack the Pipe at Nite like they used to. The most important thing has been Mufflers on the Blooie line, Mufflers when they vent the lines, siting of drill rigs on Reverse slopes (shielding of sound--at least a 10 dB drop), Avoiding Excess noise in summer time when WINDOWS are open, and at NIGHT.

Page IV-63 Appendix G apparently is not in the Environmental Study that I have But it should include (1) Terain Shielding i.e. Reverse Slope in Sonoma County (2) Mufflers for all Steam Venting (3) Daytime venting --no nighttime steam stacking (4) Noise 'Steam stacking' when weather is cold--residences with windows closed! (5) Time it so that Creek will be at high water masking over noise (after a rain) At this time a well in vicinity of your proposed power plant is 50dBA, but is hidden by high water of Creek, and Weather has people with windows closed.

Page IV-65, Table IV-11 'Bottom line' (10,000 feet) It has happened a number of times when you could add 20dB to each item---~~you~~ Plant being on the reverse slope should reduce this to no more than an additional 10dB. When Pwer plant 13 was being considered, they let a main steam line Vented go with a sound meter and recorder at Mr. Rassler's house & recorded no more than 45dBA! However Mr. Carl Brown had my sound meter and recorded 65 dBA! When this was sorted out what happened, They Had opened the valve and THEN drove down and started the Recorder! (Residences were in Anderson Springs)

Pages IV-68, IV-70 If the data as presented was correct, then obviously they haven't published the data on the ones that did create a nuisance! Sound NORMALLY from a point source decreases 6 dB for each doubling of distance. So let's try out 110dBA at 450 feet. (104dBA-900) (98dBA-1800) (92dBA-3600) (86dBA-7200) (80dBA-14400) at 2.7 miles we still have 80dBA which has happened. As of today we have a Well at 50dBA at 2.4 Miles (56dBA-6,336) (62dBA-3,168) (68dBA-1584 feet) (74dBA-792 feet) (80dBA - 396 feet) (86 dBA - 198 feet) (92 dBA - 99 feet) (98dBA - 49.5 feet) (Figure IV-3) One may make yourown conclusion---They are air drilling without a muffler (good muffler) OR the well tested by VTN Consolidated was of LOW pressure or lowere than the present one.

What happens if the sound source IS NOT a POINT source but a line source(strung out in a line similar to multi-cooling towers, or from rim of a box canyon like above Anderson Springs, THEN the sound decreases more like 3 dBA for each doubling of distance. When we had 95dBA 2.4 Miles away on a VERY Very foggy day, something like this MUST of happened, or in addition to straight line passing of sound, we had some OverHead curving Veering down additional sound. Sound travels at different speeds with temperature and will cause it to VEER!

Now to give you the Data I promised:

Alton Minter
Anderson Springs Annex
Middletown, Calif, 95461

This is an excerpt of a letter September 30, 1977 to Lake County Planning Director: The last well by Aminoil brought in Sept 18th - 21st near the site of Plant 13 on the reverse slope periodically exceed 50-55 dBA in the Annex Area of Anderson Springs.

I believe that this is important that when drilling is being done in populated areas that terrain shielding be examined... also that the excellent mufflers now in use may be overwhelmed by a few excellent high pressure wells and might in the future prove to be an occaisonal nuisance. This noise was most obvious during late afternoon and evening, and very early morning.

The temperature difference difference has important effects. The currently accepted velocity of sound at ordinary temperatures of 68°F is 344 meters per second (1130 feet per second or 758 miles per hour). This varies with temperature. On a cold winter day it may be as low as 330 meters a second; and on a hot summer day as high as 355 meters per second.

During the day, the upper levels of the atmosphere are generally cooler than air at the ground level. As the upper part of a beam of sound waves penetrates the cooler strata, it slows up. "The effect of that is to veer the entire beam upward."

If you are walking and someone tugs your left arm, slowing that part of your body, you automatically veer leftward. At night the situation, is reversed, for the upper levels are warmer than the lower levels. The upper part of a beam of sound waves will quicken, and the whole beam will veer downward. It is for this reason that sound can usually be heard more clearly, and over greater distances at NIGHT than by day.

Signature

"We had Rain and cloudy weather during this time, and the clouds 'veered' the sound downward."

This Well WAS on the Reverse slope, and at this date assume that it had the new Muffler?!

Sometime in November, 1973, the Anderson Springs Homeowners ass'n had sought to have then Signal Oil's Permit revovked, Noise being one of the reasons cited. At that time there was no Sound meter, no Hydrogen Sulfide meter, no one to run either, None of the planning commission had even visited the sites etc... Four citizens had telephoned complaints to the Sheriff about the noise, and after about 2 hours would arrive on scene with a meter with lowest reading of 70 dBA, reading nothing....but they did have a report, and each of these four at different times had one thing in common, all were alongside the Creek and all were at Night and all had OVERCAST weather!!!! Signal had the only sound meter in the county that worked and assume that readings in 1973 were taken by them.... These wells for plant 13 usually lined up with the Creek and the sound went right down in. the upper road was shielded from sound and usually never exceeded 45 DBA Signal reported no sound reading above 45 dBA. It is now obvious that they selected the sites to read (shielded areas). And I thought the 57 dBA reading of 12-1-73 between site 2 & 3 to be mostly the creek, but Now I know otherwise....

December 1, 1973

Using a General Radio 1551-A Type II Sound meter with A, B, C & 20Kc scales

Locations as indicated similar to III-58, Figure III-15

Site 1	A scale 40-42	B scale 44-46	C scale 50-52	20Kc 48-54	(About 4:00PM)
4	41	50	52-56	52-56	"
4a	43	48	52	55	"
4b	43	48-9	53	55-57	"
between 3 & 5	47	58	63	64	(10:00PM)
between 2 & 3	57	60	62	62	"

The site between 2 & 3 was on the south side of Anderson Creek " at this date I erred in thinking that the 57 dBA was entirely or mostly Creek noise!

Dec 2, 1973

Time 0830, temp 38°F, frost, & ice, ground fog!

site 1	45-46	48	50	50-51
time 1200				
	46	48	50	50

At Recreation Dam site, water pouring over top

73	74	75	77

Note that with higher sound levels the more similar A, B, & C become, Note Also that Dec 2 in the morning with ground fog and inversion, the closer A, B, & C become!

Steam wells very audible!

Sometime in the Spring of 1974 while working about 5 miles away, a safety plate Blew on a Well with about 4 hours of decreasing noise.... The only sound meter belonged to the Sheriff bought for speedboats with lowest reading of 70 dBA. By the time they arrived it had dropped in intensity and was unreadable! This was enough to decide me to buy a sound meter, three were bought, one going to the County Air Pollution Officer.

September 27, 1974

site 1 (front of house shielded) 45 dBA

Roadway, well visible, unshielded!!! 54-56 dBA!! (time 1900)

shielded 46-47 dBA unshielded 53-54 (time 2000)

Across road in open field (unshielded--Well visible) 47-52dBA

September 28, 1974

site 1 unshielded, well visivkle (time 2000) 53-54 dBA

Between site 2 & 3 Well visible time 2030 51-52

10-2-1974

0500 in morning 68 dbA + for about 3 hours

10-3-74

0900	55 dBA
1100	51.5-52 dBA
1230	53-54 dBA

10-4-1974

between site 2 & 3 well visible 2000 time 48 dBA

2032 52-53 dBA

between site 3 & 5 well visible 2048 52 dBA

10-5-1974

3 & 5 well visible 2245 58dBA+ (husband aware of scale change wife was not, Meter pegged!)

(New Well) probably 65-70 dBA

between site 3 & 5 well visible November 10, 14, 15 58-62 dBA (at any time of day)

October 31, 1974

between site 3 & 5 well visible 2308 to 2318 time 60-64 dBA (inside house, bedroom 58 dBA)

above site 3, water tower time 2318 69 dbA+ (Aware of one scale change, two was needed, probably 70-80 dBA

January 8, 1975

Between site 3 & 5 Well visible (time 0125 Morning) 69 dBA + (made same mistake again!) should of made second scale change!

January 10, 1975

between 3 & 5 well visible (time 8:58 AM) Above 85 dBA constant with peaks of 94dBA for 3 hours or more

I drove towards Middl-town, and went to Dry Creek Bridge outside Middletown, before the sound dropped below 50 dBA, and was still above 65 dBA at second bridge across Putah Creek. For some unusual reason it was LOUDER at the Anderson Springs Annex (site 1) than closer in sites 3 & 5. This morning was the heaviest Fog EVER for this area, and the trees literally screamed--was impossible to determine sound source, it came from all around.

April 3, 1975

site 1 well visible time 0330-0510 52-57 dBA

April 4 47-57 dBA

April 5 42-54 dBA

April 6 46-52 dBA

April 10, 1975 1630 - 1800 53-62 dBA

April 25, 1975

site 5 well visible time 1330 to 1400 50-52 dBA (broken line)

June 4, 1975

site 5, well visible time 1200 to 1400 53-60 dBA

June 5, 1975

site 5, time 0800 to 1000 average 54 dBA

June 12, 13th averaged 51 dBA

June 27, 28, 29, 30 " 50 dBA

July 1, 1975

site 5 well visible time 0830 48 dBA

1000 PM 70 dBA

July 2, 1975

time 0700 67 dBA

July 3, 1975 Time 11:00 PM to 0300 AM 60 - 65 dBA

July 4, 1975 time 0800 48 dBA

9:30PM 61 dBA

site 3 well visible time 0715 (10-30-1975) 65-70 dBA

0845 " "

site 3, well visible time 0800 (10-31-1975) 58-59 dBA

November 3, 1975

0845 59 dBA

9:00 61 dBA

9:15 69 dBA

11:30 52 dBA

November 5, 1975

site 3 time 0735 67 dBA

0830 51 dBA

0900 50 dBA

November 6, 1975

time 0700 50 dBA

0900 50 dBA

1030 52 dBA

1130 52 dBA

1132 54 dBA

November 14, 1975

site 5 well visible 1104 59 dBA

1130 67 dBA

December 13, 1975

site 5 well visible 0900 68 dBA

Dec 15, 1975 0845 to 1045 Odor Bad 69 dBA

16, 1975 0900 to 1100 Odor bad 68 DBA

December 13, 1977

0900 70-75 dBA, time 1000 65-70 dBA, 1100 60-65 dBA, 1200 58-62 dBA, 1300 55-60 dBA, 1400 55-60 dBA, 1500 50-55 dBA, time 1600 50 dBA Takenby site 1---This was a Well Vent and is usually loud at first ~~decreased in this ratio~~ then decreasing in this ratio.

This out of sequence, but note that September 18th to 21st, 1977 that a well on the reverse slopeperiodically exceeded 50-55 dBA with an average of 45-50 dBA. On most ~~ever~~ instanceswhere there was a LARGE excess of sound, the weather was overcast or foggy (strong inversion)

Staff Response to Comments

from

MR. ALTON MINTER

83. Staff has read Mr. Minter's comments related to noise measurements and variations in methodological approach to sound measurement and appreciates them as valid observations.

Staff understands that, although sounds can and are measured on several scales or levels, the use of the A-scale has become accepted within the field. Use of the A-scale values for sound recording and setting of regulatory standards, laws and/or ordinances has provided a common basis for discussion and understanding even though it may not fully represent the range or level of sound experienced at a sensitive receptor.

Staff appreciates Mr. Mintor's efforts in supplying this noise information on Anderson Springs. The Energy Commission would normally not have the staff and resources available to obtain this type of site-specific, detailed data during its numerous regulatory proceedings. The information will be kept on file for future use in any regulatory proceedings affecting the Anderson Springs area.

CALIFORNIA TROUT

December 31, 1979

Ms. Kathryn Matthews
Environmental and Health Office
California Energy Commission
1111 Howe Ave. M.S. #32
Sacramento, CA 95825

Dear Ms. Mathews:

Thank you for sending us a copy of the draft Joint Environmental Study concerning NCPA No. 2 Geothermal Power Plant. As you may know our organization has been following geothermal power developments closely, especially those in the northwestern part of the State. This is obviously because of our intense interest in, and concern for, the steelhead and trout resources in the area involved. We have made known our specific concerns about the impacts of geothermal development on these resources in earlier correspondence with BLM and at meetings sponsored by BLM, DOE and CEC. We have taken the position that great care must be exercised in geothermal development lest the trout and steelhead resources be severely damaged or even destroyed.

The NCPA and its cooperators are to be congratulated on the fine work that has gone into the draft report, especially the excellent treatment given to the environmental impacts and the proposed mitigation measures for them. The analysis is comprehensive and detailed and is well presented. Only one adverse (84)
impact appears to be left out of consideration and that is the release of hot water that can happen under certain operating condidtions of the power plant. If sufficiently hot water reaches the streams (h)where these fish are spawning, when eggs are incubating or where the fingerling nursery grounds are, it will surely kill all of the eggs and fish and also living forms the latter feed on.

Another point of equal concern to us relates to the implementation of the miti- (85)
gations measures described in the Study. We MUST BE SURE that, when and if NCPA No. 2 power plant is authorized and funded, sufficient moneys are made available to carry out the mitigation measures, including initial base-line studies needed to establish the fish populations and their food forms at the beginning of the project and monitoring of impacts post-project.

California Trout is prepared to help get the required appropriations made, both by sending articulate and knowledgeable representatives to public and committee hearings which will be held dealing with the project. We have been effective in the past in supporting measures and are confident we can make our influence felt.

Richard H. May, President

Staff Response to Comments

from

CALIFORNIA TROUT

84. The Biological Resources staff considers the potential for impacts from the release of hot water at the NCPA No. 2 power plant site to be insignificant. Staff would agree that if sufficiently hot water reached Big Sulphur Creek during spawning that the hot water could kill eggs or, if present, young and adult fish along with their food sources. However, because of the distance of the NCPA No. 2 site from Big Sulphur Creek (1/2 mile) and the proposed mitigation measures, (total reinjection of condensate, the berm around the site and a sedimentation pond below the plant) any high temperature fluids which did escape from the power plant should be retained long enough to be cooled. Containment of spill volumes can be found in the Water Quality section (JES, page IV-13).

85. When a project is certified by the CEC, all mitigation measures described in the JES must be implemented in the project construction. If the Applicant fails to implement these mitigation measures the certification will be revoked.

Before the issuance of permits for project operation, BLM and USGS must find that all specified measures have been implemented.

Staff's recommendation is that there should be off-site monitoring to assess impacts to the fishery in Big Sulphur Creek near the point where the tributary which would receive drainage from the power plant site

would enter the creek. However, the Applicant has taken the position that they should only be required to monitor water quality and that this should be done at the outlet from the sedimentation basin.

The monitoring of the fishery will be required as stated in the JES unless the Committee reaches an independent finding.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333

January 3, 1980

Ms. Kathryn M. Matthews
California Energy Commission
1111 Howe Avenue, MS#32
Sacramento, California 95825

Dear Ms. Matthews:

We have completed our review of the Draft Joint Environmental Study (JES) for the NCPA No. 2 Geothermal Power Plant, Sonoma County, California. We are responding on behalf of the Public Health Service and are offering the following comments.

In general, the JES appears to adequately disclose the public health impacts of the proposed 110 megawatt power plant in the Geysers-Calistoga Known Geothermal Resource Area. The use of the mitigation measures described in the JES for abating impacts associated with water quality, air quality, spills and waste disposal, and noise should help reduce the potential health effects of the project.

We are concerned about the potential onsite and offsite spills of toxic wastes to be generated by this facility and the adequacy of the disposal facilities to confine these wastes. The toxicity of wastes to be transported to offsite disposal facilities should be discussed in more detail. According to the JES, major, serious toxic spills could increase. If mitigation measures are implemented to contain the maximum potential spill of 170,000 gallons of condensate, the probability of a major, serious toxic spill occurring should be described. (86)

We note that the Northern Sonoma County Pollution Control District has a record of complaints about H_2S odor from the Geysers since 1972. Lake County also has complaint records about H_2S odor. The JES should describe the nature of the complaints and define what H_2S odor levels and circumstances would constitute a "public nuisance" (p. IV-36). It should be noted if complaints about H_2S odors will increase even though emission controls will be installed. In addition, the JES should explain if the existing ambient air quality standard for H_2S of .03 ppm will adequately protect local receptors from the nuisance effects of H_2S generated by the proposed power plant. We agree that monitoring of H_2S and studies of the long-term health effects from exposure to low levels of H_2S should be continued. (87)

We appreciate the opportunity of reviewing this document. Please send two copies of the final JES when it is available.

Sincerely yours,

Frank S. Lisella

Frank S. Lisella, Ph.D.
Chief, Environmental Affairs Group
Environmental Health Services Division
Bureau of State Services

Staff Responses to Comments

from

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

86. Potential on-site and off-site spills of toxic wastes are addressed in the sections on water quality, waste management, and public health. Toxicity of wastes are discussed in the JES under waste management in Appendix F and in the response to Comment No. 75.

As stated on page VI-1, the probability for a major spill of toxic substances is expected to rise with the increase in the number of operating geothermal power plants in The Geysers. This expectation is based upon the assumption that an increase in operating plants would produce a corresponding increase in truck traffic and, thus, more chance of a spill.

No values have been derived for these probabilities but if we look at the spills which have occurred in The Geysers since the start-up of the first plant in 1952, only one spill has been categorized as major. In 1977 an estimated 250,000 gallons of condensate were spilled from the PGanE reinjection pipeline.

The mitigation measures outlined in the JES and proposed by NCPA indicate that the facility will be designed to contain and control 2.6 times the maximum potential spill of 170,000 gallons of condensate. The probability of a major, serious toxic spill is, therefore, almost nil.

To date, staff is not aware of any major spills during transport of toxic wastes from the power plant site to the designated dumping site.

87. The complaints received by the NSCAPCD and LCAPCD are verbal complaints of noticeable H_2S odor. Although there are records of H_2S concentrations measured at various points in The Geysers vicinity, the levels of H_2S at the time and location the odor was detected may not be traceable.

A public nuisance is defined by air quality regulatory agencies to exist when ten or more independent and simultaneous complaints (within 24 hours) are received concerning similar objections and potentially similar sources.

State of California
GOVERNOR'S OFFICE
OFFICE OF PLANNING AND RESEARCH
1400 TENTH STREET
SACRAMENTO 95814

EDMUND G. BROWN JR.
GOVERNOR

January 3, 1980

Kathryn M. Matthews
California Energy Commission
1111 Howe Avenue, M.S. #32
Sacramento, CA 95825

Subject: SCH# 78112021 Northern California Power Agency Geothermal Power Plant No. 2

Dear Ms. Matthews:

State agencies have commented on your draft environmental document (see attached). If you would like to discuss the concerns and recommendations in their comments, contact the staff from the a agencies whose names and addresses appear on the comments.

You may formally respond to the agencies' comments by writing to them (including the State Clearinghouse number on all such correspondence). When filing the Final EIR, you must include all comments and responses (State EIR Guidelines, Section 15146). State review of your draft environmental document will then be complete.

To aid in preparing environmental assessments on future projects, you should send to state agencies and the Office of Planning and Research your Notice of Preparation as prescribed by AB 884 and Section 15066 of the EIR Guidelines.

If you would care for assistance or if the need arises, the Office of Planning and Research is available to help identify responsible agencies, distribute Notices of Preparation, organize coordination meetings, mediate disputes, and hold consolidated hearings.

Please contact Anna Polvos at (916) 445-0613 if you have any questions.

Sincerely,

Ron Bass for

Stephen Williamson
State Clearinghouse

Attachment
cc: Ken Fellows, DWR

State of California

THE RESOURCES AGENCY OF CALIFORNIA

Memorandum

To : Jim Burns
Assistant Secretary
Resources Agency

Katherine M. Mathews
Energy Commission
1111 Howe Avenue
Sacramento, CA 95825

From : **Department of Conservation — Division of Oil and Gas**
Sacramento

Date : December 11, 1979

Subject : SCH No. 78112021
NCPA Power Plant No. 2
Lake County

The Division of Oil and Gas has reviewed the subject environmental document and makes the following comment:

Page II-18: First paragraph, third sentence. The Division of Oil and Gas does not regulate the abandonment of geothermal wells on federal lands. (88)

A. E. Stapleton for
Ken Stelling
District Engineer

ADS:sr

APPROVED:

Suzanne Butterfield
Suzanne Butterfield
Environmental Protection Coordinator
Office of the Director
DATE: 12-12-79

Staff Response to Comments

from

DEPARTMENT OF CONSERVATION - DIVISION OF OIL AND GAS

88. The text has been changed to reflect this comment.

THIS COPY FOR
State
Clearinghouse

Ms. Kathryn M. Matthews
Environmental & Health Office
California Energy Commission
1111 Howe Avenue, M.S. 32
Sacramento, CA 95825

November 29, 1979

04-SON, LAK-128, 175
SCH #78112021

- District 4

Comments on the Draft Joint Environmental Study for NCPA No. 2 Geothermal Power Plant in Sonoma County.

The document discussed the transport and disposal of toxic/dangerous chemicals from the site, however the transport of such chemicals to the site has not been addressed. There are Federal regulations to comply with in this matter.

Extra-legal vehicle loads will require Transportation Permits from Caltrans. Application for permits can be made at Caltrans Maintenance Stations that serve the area.

ORIGINAL SIGNED BY

R. W. SIEKER
District CEQA Coordinator

RBP:bg
cc: VJR-RDS, RLC, WJZ-RBP

Direct reply was made to addressee

United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
PACIFIC SOUTHWEST REGION
SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO:

PSW 200

JAN 16 1980

Ms. Kathryn M. Matthews
California Energy Commission
1111 Howe Avenue, MS #32
Sacramento, CA 95825

Dear Ms. Matthews:

We have reviewed the Joint Environmental Statement for the proposed Geothermal Power Plant, Sonoma County, California and offer the following comments.

Cultural Resources

It is unclear from the draft JES whether all portions of the proposed project area, including not only the power plant site but the transmission line route, pipeline route, and access roads, were surveyed for archeological and cultural resources. The final JES should briefly clarify this. (89)

From the short description and comments of the consultant presented on pages III-61-62, it appears that archeological site CA-SON-843 may be eligible for the National Register of Historic Places. We recommend that such a determination of eligibility be sought from the Keeper of the National Register. Based on the outcome of this evaluation, along with the determination of potential project effects, we would ask that the "recommended" protection measures for the site (page IV-73) be the subject of consultation among the involved agencies, the applicant, the SHPO, and (as appropriate) the Advisory Council on Historic Preservation. The final JES should contain any agreed-upon protection measures resulting from this coordination. (90)

Recreational Resources

We concur with the decision of the project sponsors not to include recreational facilities in or near the project site. The steep terrain, narrow roads, and preservation of natural (dense) vegetation combine to limit the potential sites for development of recreational facilities.

Thank you for the opportunity to comment.

Sincerely yours,

John D. Cherry
Regional Director

Staff Responses to Comments

from

U.S. DEPT. OF INTERIOR, HERITAGE CONSERVATION
AND RECREATION SERVICE

89. Based upon information provided by NCPA and review of the site and survey reports filed by the cultural resources consultant to NCPA, Dr. David A. Frederickson, staff believes that all project development areas proposed by NCPA have been surveyed for all types of cultural resources. The wording in the text on pages III-66 and IV-75 has been revised to provide clarification of this information.

90. The Ukiah office of the Bureau of Land Management has taken the necessary steps to determine the eligibility of archaeological site CA-SON-843 for the National Register of Historic Places. The mitigation measures recommended in the JES have been discussed by cultural resources staff of the BLM, the Energy Commission and the State Historic Preservation Office. Each of these agency staff are in contact with the Advisory Council on Historic Preservation, as appropriate.

The text of the JES has been revised to indicate that the necessary steps have been initiated by BLM to determine the eligibility of CA-SON-843 for the National Register.

IN REPLY REFER TO

NCPA #2
CA-5084

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Ukiah District Office
P.O. Box 940
Ukiah, CA 95482

John D. Cherry
Regional Director
Heritage Conservation and
Recreation Service
Pacific Southwest Region
San Francisco, CA 94102

Dear Mr. Cherry:

We appreciate your review comments, dated January 16, 1980, concerning the Northern California Power Agency, Proposed Geothermal Power Plant No. 2, Draft JES.

The following comments are directed at the specific points you raised for clarification.

(89) a. Paragraph 1

Enclosed you will find a map of the proposed NCPA No. 2 project area. Within the one-half mile wide corridor lie the proposed transmission line, power plant site, and associated access roads. The entire area outlined on the map has been inventoried for prehistoric and historic archaeological sites, current Native American values, and paleontological resources. A more specific definition of the inventoried area will be included in the Final JES.

The proposed pipeline route is not under consideration as part of this particular proposed action. Therefore, those areas have not been evaluated for cultural resources at this time. It is required that a site-specific Plan of Operation (POO) be submitted for joint approval by both the Area Geothermal Supervisor (USGS) and the Bureau of Land Management prior to any surface disturbing activities. An environmental analysis (EA) is written in response to each POO. Consequently, a series of EA's will be prepared. A complete cultural resource study will be required when the POO for the pipeline route is submitted.

Although proposed transmission line Alternative 2 is under consideration as a part of this proposed action, no cultural resource evaluation has been conducted. If proposed transmission line Alternative 2 is chosen, the Bureau will require a complete cultural resource inventory and evaluation prior to project approval.

Pursuant to Section 106 of the National Historic Preservation Act and Paragraph 2(b) of Executive Order 11593, the State Historic Preservation Officer and the Advisory Council on Historic Preservation will be provided documentation and requested to comment prior to the implementation of all actions which might affect cultural resources eligible for inclusion on the National Register of Historic Places.

(90) b. Paragraph 2

In consultation with the SHPO, it has been determined that prehistoric archaeological site, CA-SON-843, meets the criteria for eligibility for listing on the National Register of Historic Places as part of a possible National Register District. We believe that it would be appropriate to deal with cultural resources within The Geysers KGRA systematically and holistically. This approach would facilitate cultural resource management on a regional basis. The Ukiah District Office will be contracting with Sonoma State University to have a regional research design prepared for The Geysers KGRA. The study should provide a regional framework for assessing the significance of each identified cultural resource. It should also provide data pertinent to the determination of districts eligible for inclusion on the National Register of Historic Places.

In consultation with the SHPO, it has been determined that the project will have no effect upon cultural resources as per 36 CFR 800.4. Archaeological site, CA-SON-843, is situated on Big Sulphur Creek, 300 to 400 meters from the nearest proposed surface disturbance (see map).

Despite the no effect determination, the Bureau will establish a monitoring program for the protection of CA-SON-843. The Bureau has a long-term committment to preserve and protect cultural resources even though the specific project will have no effect. All documents regarding the "no effect" determination are on file at the Ukiah District Office and are available for review. Enclosed for your information are copies of Dr. Fredrickson's reports concerning previous cultural resource studies, paleontological and historic resources and socio-cultural values.

Once again, we appreciate your interest and concern. If you have any further questions, please feel free to contact me or Daniel O. Larson, District Archaeologist, at (707) 462-3873.

Sincerely yours,

Dean Stepanek

Dean Stepanek
District Manager

Enclosures

United States Department of the Interior

FISH AND WILDLIFE SERVICE

SACRAMENTO ENDANGERED SPECIES OFFICE
2800 Cottage Way, Room W-2527
Sacramento, California 95825

JAN 10 1980

Ms. Kathyrn M. Matthews
California Energy Commission
Environmental and Health Office
1111 Howe Avenue
M.S. No. 32
Sacramento, California 95825

Dear Ms. Matthews:

Our comments of the Draft Joint Environmental Statement (DJES) for the Northern California Power Agency Geothermal Power Plant Number 2 are directed toward the impacts the project will have on Streptanthus morrisonii, a candidate threatened species according to the 1975 Notice of Review. We do not support the proposed application of fertilizer, gypsum and hydroseeded exotic weeds to the exposed cut banks and fill slopes of serpentine. We agree with the statement on page IV-25 that the "Introduction of agressive, non-native plant species could lead to competition with and displacement from the niche presently occupied by UTE (candidate) species". Bromus mollis and Melilotus indicus are invasive annual weeds; Agropyron tricophorum reportedly has recently become established in brushfields in Kern and Siskiyou Counties; and Lolium perenne and Dactylis glomerata have become naturalized in many waste places throughout California and elsewhere. The track record for these exotic species should be considered prior to their use on serpentine exposed cuts and fills for erosion control. We recommend that if surface soil stabilization is truly needed that short-lived species (e.g., wheat (Triticum aestivum) or crimson clover (Trifolium incarnatum)) or native species be employed only. (91)

The presence of Streptanthus morrisonii in the project area prompts our office to recommend that the U.S. Bureau of Land Management and/or U.S. Department of Energy request an informal consultation with our office on the effects this project will have on the candidate species Streptanthus morrisonii. (92)

We appreciate this opportunity to voice our concerns on DJES and project in an area rich in endemic flora. If we can be of any assistance, please feel free to call either Jim Bartel or Joe Dowhan of our office at (916) 484-4106 or FTS 468-4106.

Sincerely,

Gail C. Kobetich

Field Supervisor

cc: Field Supervisor, Ecological Services, Sacramento, CA
Regional Environmental Officer, San Francisco, CA

Staff Responses to Comments

From

U.S. DEPT. OF INTERIOR, FISH AND WILDLIFE SERVICE.
ENDANGERED SPECIES OFFICE

91. As indicated on page IV-23, the seed mixture and procedure for revegetation can be changed with the consent of the responsible regulatory agencies. This item was included so that the revegetation program could be flexible enough to respond to new information and knowledge gained from past and current revegetation experiences in The Geysers KGRA.

Based upon prior experience with revegetation in The Geysers geothermal development area BLM has not found the species described in the comments to be invasive. However, following discussion among agency staff the BLM has revised the discussion of revegetation presented on page IV- and deleted two plant species from the recommended list. In addition, the normal revegetation measures will not be used in Streptanthus morrisonii habitat, where protection of a candidate threatened species will take precedence over erosion control.

92. Staff of the BLM indicated that they had already established contact and consulted with the Endangered Species Office of Fish and Wildlife Service through the Endangered Species Branch of the BLM State Office in Sacramento. Following receipt of your comments, the Ukiah Office of BLM reconfirmed this contact and coordination.

COUNTY OF LAKE

Air Pollution Control District
Courthouse — 255 N. Forbes Street
Lakeport, California 95453
Telephone 707/263-2391
Laboratory: 707/263-2392
Burn Info.: 707/263-3121

ROBERT L. REYNOLDS
Air Pollution Control Director

January 10, 1980

Kathryn M. Matthews
California Energy Commission
Environmental and Health Office
1111 Howe Avenue, M.S. No. 32
Sacramento, California 95825

Dear Ms. Matthews:

Please find attached the LCAPCD comments on the NCPA #2 Geothermal Power Plant Draft JES.

General Comments

(1) Overall the air quality sections are well prepared and informative.

(2) Increased mention of H_2S abatement technologies such as the EIC, Courey, etc., should be made and their advantages discussed. For informational purposes their possibilities as mitigating technologies to solving stacking as well as the power plant emissions should be discussed. (93)

(3) The air quality analysis relies upon the older power plants in the KGRA being retrofitted and that the tracer tests utilized are true worse cases. It would appear prudent to mention the date at which the older geothermal power plants are expected to be in compliance with NCAPCD rule 455 and no longer on variance. Additionally, it should be noted that it is difficult to detect the worse impact with a few limited tracer tests. This is apparent from the 'limited vertical mixing tracer test' in which the tracer material was released above and into the top of the inversion instead of below a capping inversion as had been planned. Also, multiple downwash tracer tests from NCPA #2 would probably be required to hope to obtain a near worse case condition. (94)

Specific Comments

(1) Page III-40, paragraph 3 - Heat energy is released by condensation of the plume (high ambient dew-point) and the resulting plume rise is expected to be higher. When a condensation does notoccur or evaporation of entrained water droplets occur (low dew-point temperature) the plume is less bouyant. When the entrained water evaporates the plume loses heat energy and the plume bouyancy is reduced. As the paragraph presently reads, I believe it is in error. (95)

(2) Page III-47 - Data was footnoted which indicates H_2S levels in the proposed well site areas were monitored during 17 May - 19 June, 1977. No such site specific data is included in the Draft JES. We believe it should be since the collected data show a background level existing between the NCPA #2 site and Callayomi Valley as severe as SRI-2. (96)

(3) Page IV-80, paragraph 7 - It should be noted that there is uncertainty as to whether maximum future baseline H_2S concentrations predicted will be attained by the time NCPA #2 is scheduled to be operational. (97)

Sincerely,

Bob Reynolds, Director
Lake County Air Pollution Control District

Staff Response to Comments

from

BOB REYNOLDS, LCAPCD

93. Although the EIC (copper sulfate) process may be an alternative abatement system for the proposed NCPA/Shell geothermal unit, test data on the performance characteristics, costs, and reliability are not presently available for inclusion in the record of these proceedings. Staff, through personal communications with Mr. Gerald Katz of DOE (Asst. Project Manager for the EIC/PGandE contract) and Mr. Fran Brown (Chief Project Supervisor, EIC Corporation), has been informed the EIC process may be capable of performing adequately for the NCPA/Shell H_2S steam input characteristics. However, an evaluation report, based on PGandE Unit 7 tests will not be available until spring 1980. If the report substantiates the ability to achieve the necessary degree of H_2S control and construction operation is feasible by the scheduled commercial operational date of this project, this method may be viable.

Additionally, if by Fall 1980 the proposed peroxide/catalyst condensate treatment and Stretford System are proven to be too costly (due to a solids removal system and or chemical use), a recommendation for an H_2S abatement system design change could be made by Staff to the Commission. This change could be replacement of the Applicant's proposed abatement system with the EIC process system.

The Courey System (a series of heat exchanges and steam flashing units) that separates the condensibles from noncondensibles could use the Stretford system for H_2S abatement. Staff does not know of any available comprehensive performance data on the Courey system and none is foreseen to be available by Fall, 1980. Given these great uncertainties, a recommendation for substitution of this system for the Applicant's proposed abatement system would seem highly unlikely.

94. Page IV-39, paragraph 1: As stated in the JES, geothermal power plants existing and proposed, operating in The Geysers are expected to comply with the Northern Sonoma County APCD's Rule 455 by 1983. Additional reductions in emissions must be achieved by January 1, 1985.

Due to the physical location of the proposed project on a ridgeline, staff of the Northern Sonoma County APCD and the Energy Commission believed that downwash would represent the worst case meteorological scenario, although other scenarios were evaluated. Staff's belief was substantiated by results of the Cobb Valley Tracer Study conducted for the proposed PGandE Geysers Unit 17 project which is located on a ridge north of the proposed project.

95. Page III-40, paragraph 3: Staff concurs with the information presented in this comment and has revised the wording to clarify the description.

96. Page III-47, Footnote: Although evaluated, data collected by Environmental Systems and Service from H_2S monitoring at the Klau Mines No. 1 Well Site in Lake County was not included in staff's analysis of the proposed project. Although the Klau Mines site is near the proposed project area it is in an area remote from sensitive receptors. Values measured at the Klau Mines site in the ESS study are similar to those measured at the SRI-2 site, which is also removed from sensitive receptors.

97. Page IV-80, paragraph 7: The discussion in the subject paragraph relates to potential for conflicts between residential and industrial land uses. There does not seem to be a clear relationship between this subject and that addressed in the comment. There is, however, a discussion of future ambient H_2S concentrations and emissions limitations beginning on page IV-38.

COMMENTS REQUIRING NO RESPONSE

1. U.S. Department of Interior, Bureau of Indian Affairs
2. U.S. Department of Interior, Bureau of Mines
3. U.S. Department of Agriculture, Soil Conservation Service
4. U.S. Department of Interior, Fish and Wildlife Service, Division of Ecological Services
5. U.S. Department of Transportation, Federal Aviation Administration
6. U.S. Department of Interior, Water and Power Resources Services (formerly Bureau of Reclamation)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
Sacramento Area Office
2800 Cottage Way
Sacramento, California 95825

Natural Resources

DEC 18 1979

Ms. Kathryn M. Matthews
California Energy Commission
Environmental and Health Office
1111 Howe Avenue, M.S. No. 32
Sacramento, California 95825

Dear Ms. Matthews:

We have reviewed the Draft Joint Environmental Study (JES) for the Northern California Power Agency Geothermal Power Plant No. 2 and found no adverse impacts to any Indian lands under the jurisdiction of this office.

Sincerely yours,

Eddie V. Edwards
FOR William E. Finale
Area Director

United States Department of the Interior

BUREAU OF MINES

EAST 315 MONTGOMERY AVENUE
SPOKANE, WASHINGTON 99207

December 28, 1979

Ms. Kathryn M. Matthews
Environmental and Health Office
California Energy Commission
1111 Howe Avenue, M. S. No. 32
Sacramento, California 95825

Dear Ms. Matthews:

Thank you for the opportunity to review the Draft Joint Environmental Study for Northern California Power Agency's No. 2 (NCPA No. 2) Geothermal Power Plant in Sonoma County.

With regard to geology, geologic hazards, and mineral resources, this report could serve as a model of its kind. One or two of the geologic maps would benefit from improved clarity or reproduction at a larger scale. However, we have no further constructive comments, and are satisfied that construction and operation of the NCPA No. 2 Geothermal Power Plant will have no adverse impact on mineral resources. Mineral-related industries should benefit from the increment of power which the plant will provide.

These comments are provided as technical assistance only. They do not comprise an official Bureau of Mines or Department of the Interior environmental review.

Sincerely,

for Kenneth D. Baber, Acting Chief
Western Field Operations Center

United States Department of Agriculture
Soil Conservation Service
2828 Chiles Road
Davis, CA
95616
(916) 758-2200

December 28, 1979

Kathryn M. Matthews
California Energy Commission
Environmental and Health Office
1111 Howe Avenue
Sacramento, California 95825

Dear Ms. Matthews:

A copy of the Draft Joint Environmental Study for the Northern California Power Agency Geothermal Power Plant No. 2 was addressed to the Ukiah Field Office of the Soil Conservation Service on November 30, 1979. This study was referred to our office on December 11, 1979, for review and comment. Review of this study reveals no controversial items within the realm of the Soil Conservation Service's expertise and responsibilities.

No prime or unique agricultural land will be affected. We find no conflict with any SCS on-going or planned programs or projects.

We appreciate the opportunity to review and comment on this study.

Sincerely,

FRANCIS C. H. LUM
State Conservationist

cc: Norman A. Berg, Administrator, USDA, SCS, Washington, D.C.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Division of Ecological Services
2800 Cottage Way, Room E-2727
Sacramento, California 95825

January 3, 1980

Ms. Kathryn M. Matthews
California Energy Commission
1111 Howe Avenue, M.S. 32
Sacramento, California 95825

Subject: Draft Joint Environmental Study, Northern California Power Agency NCPA No. 2 Geothermal Power Plant

Dear Ms. Matthews:

We have reviewed the subject environmental study and we find that it adequately describes the environmental consequences of the proposed project, the required and suggested mitigation measures, and the project alternatives. These comments do not pertain to study sections describing impacts on uncommon, threatened and endangered plants or wildlife. The adequacy of these sections will be addressed in a separate letter to the California Energy Commission by the Service's Office of Endangered Species.

Thank you for the opportunity to comment on the joint environmental study.

Sincerely,

James J. McKevitt
Field Supervisor

cc: Dir., CDF&G, Sacramento
Reg. Mgr., CDF&G, Reg. III, Yountville
USDI, BLM, 555 Leslie St., Ukiah, CA 95842
USDI, USGS, 2465 E. Bayshore Rd., Palo Alto, CA 94303
U.S. Dept. of Energy, 1333 Broadway, Oakland, CA 94612

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

WESTERN REGION
P O BOX 92007, WORLDWAY POSTAL CENTER
LOS ANGELES, CALIFORNIA 90009

January 7, 1980

Ms. Kathryn M. Mathews
Commission's Environmental
and Health Office
California Energy Commission
1111 Howe Avenue, M.S. No. 32
Sacramento, CA 95825

Dear Ms. Mathews:

We have now completed the review of your Draft Joint Environmental Study (JES) for the Northern California Power Agency Geothermal Power Plant 2.

Please be advised that our preliminary findings have indicated that this proposed project will not present any problem to any existing or presently planned FAA facilities. However, it is advised that the initiator of this proposed project is required to file a notice with the Federal Aviation Administration where determined applicable and as stipulated under Part 77 of the Federal Aviation Regulations (FARs).

We appreciate the courtesy extended in bringing this matter to our attention.

Sincerely,

W. BRUCE CHAMBERS
Regional Planning and
Appraisal Officer

United States Department of the Interior
BUREAU OF RECLAMATION
LOWER COLORADO REGIONAL OFFICE
P.O. BOX 427
BOULDER CITY, NEVADA 89005

IN REPLY
REFER TO: LC-155
120.3

JAN 10 1980

Ms. Kathryn M. Matthews
Commission's Environmental and
Health Office
California Energy Commission
1111 Howe Avenue, M.S. No. 32
Sacramento, California 95825

Dear Ms. Matthews:

We have reviewed your Joint Environmental Study, Northern California Power Agency, Geothermal Power Plant No. 2. We have no comments to offer as the proposed plan will not have an impact on any of the Service's primary activities. The document appears adequate for the purposes intended and we noted no deficiencies or errors significant enough to comment on. We appreciate the opportunity to review this document.

Sincerely,

F. Phillip Sharpe

F. Phillip Sharpe
Regional Environmental Officer

COMMENTS RECEIVED FOLLOWING CLOSE
OF REVIEW PERIOD

1. California Department of Health Services, Radiologic Health Section
2. U.S. Environmental Protection Agency, Region IX

State of California — Department of Health Services

Memorandum

To : Vector Biology & Control Section
1420 - 5th Street, Room 140

Date : February 11, 1980

Subject : Environmental Radiation Monitoring for Geothermal Projects

Telephone: ATSS ( )
( )

From : Erik Vold, Health Physicist
Radiologie Health Section

Attached are our generic comments currently applicable to all geothermal projects regarding environmental radiation monitoring policy. A copy of these comments with the attachment have been forwarded to each of the project contact persons associated with EIR routings with the following transmittal SCH numbers:

80010115A	80010809P	79-NOI-2
80010115	79021326	79082103
79072515	7812257	Draft EIR
79100217	223-7	224-32
79121928	77030867A	79-NOI-1
79090526	78112021	

Attachment
cc: Kenneth Buell
EV/al

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF HEALTH SERVICES
714/744 P STREET
SACRAMENTO, CA 95814
(916) 323-2750

January 21, 1980

To: All Interested Parties

Subject: Environmental Radiation Monitoring for Geothermal Projects

The Radiologic Health Section (RHS) has established this policy regarding Environmental Radiation Monitoring at Geothermal Projects:

1. Each commercial geothermal power production unit requires a monitoring program, sufficient to determine the public health and environmental impact due to releases of radon-222 and decay-daughter products. This monitoring program must include the minimum requirements described in the attachment.

2. Exploratory or development projects do not require routine monitoring, however, the impact due to radon-222 shall be discussed in the Environmental Impact Report or the Negative Declaration, giving a determination of, (a) radon-222 concentration in the steam as derived by sampling and analyses or from previous studies' data, (b) total radon release estimated for the duration of the exploratory phase, and (c) total impact estimated on the public health, expressed as a population dose or a maximum possible population dose.

3. Geothermal projects for applications other than power production shall be reviewed on a case-specific basis. Generally, an application based on a closed loop (production/injection) well system will be treated as an exploratory project, and projects utilizing significant steam throughput in an open loop well system will be subject to the routine monitoring requirements as attached.

A study and review of the monitoring program requirements is currently underway by RHS. It is anticipated that our review, which will involve dispersion modeling, field sampling, and quality control analyses of samples presently collected in the Pacific Gas and Electric program, will be complete within one year. The results of this review may indicate that continued monitoring, beyond an initial phase of one to three years at each unit, or, monitoring at power units which have not yet started power production, is unnecessary to assure an "as low as practicable" release and public health impact. Until our review is complete, we are requesting a tentative committment from the geothermal power utilities and other geothermal users to comply with the above monitoring policy.

Very truly yours,

Erik Vold

Erik Vold, Health Physicist
Environmental Radiation Control Unit
Radiologic Health Section

Attachment
EV/al
cc: Kenneth Fess

DRAFT – FOR DISCUSSION ONLY
Date December 4, 1978

Outline of minimal requirements for monitoring and reporting on radon-222 at the Boyer's.

1. Each unit must be sampled at least quarterly.

2. The sampling and analysis methods must be shown to be accurate by comparison to known standards supplied by an acceptable source (eg., EPA). This "standard comparison" or "calibration" shall be run with each set of samples counted unless it is shown that the counting system is sufficiently stable, that calibration is unnecessary for each run, then calibration shall be required at least once per year.

3. Notification levels (as specific activity determined in the effluent) are: 3 pCi/L of Rn-222 warranting a written 30-day notice to EHS confirmation of that level in the original sample, and 6 pCi/L, warranting a notification to EHS within 24 hours of detecting this level of activity in a sample.

4. Approximately 10 percent of samples taken will be duplicated, with the duplicate sample sent to the Department of Health Services' Radiation and Radiation Lab in Berkeley for cross-check analysis as a quality control on the utility's lab analyses.

5. Each power production unit must be sampled such that the instantaneous radon-222 emission rate (Ci/sec) to the environment is accurately determined.

6. An annual report shall be sent to the Department of Health Services, Radiologic Health Section, discussing each point above. All applicable

results shall include the standard deviation associated with the counting error. The error in the sampling procedure and emission calculation shall be discussed.

The report will also indicate the maximum dose due to emissions, calculated at the site boundary, and to the resident nearest the location of maximum Rn-222 concentration, and the resultant exposed population dose. (These dose calculations may follow a simplified methodology to be established by RHS in the near future).

Water Comments:

(DEIS, Page IV-7)

The Draft EIS states that, "soil losses will increase from a pre-construction rate of 1 ton per acre per year to 20 tons during construction." Since the project would result in 10 acres being graded, the EPA assumes a potential soil loss of 200 tons per construction year. Given this potential for soil loss, and the potential for siltation in the Sulphur Creek Drainage Basin, the Final EIS should indicate which of the proposed mitigation measures will be implemented during project construction.

The EPA recommends that the Final EIS utilize the Best Management Practices (BMP's) for Road Construction described in the California Department of Forestry (CDF) Soil Erosion Study.

Air Comments:

(DEIS, Page IV-43)

The report states that the secondary system is to be added only if monitoring tests (for 75-90 days after the plant is operating) show that the additional control equipment is necessary to conform with the NSCAPCD regulations. Since the available data indicates that a secondary system will be necessary for adequate abatement, EPA recommends that the entire abatement system (including the secondary system) should be designed.

Thus, rapid construction and operation of the secondary H_2S abatement system would be possible. Under the PSD permit, Best Available Control Technology (BACT) for H_2S is considered to be Stretford Process with a secondary $Fe/NaOH/H_2O_2$ system.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Kathryn M. Matthews
Environmental and Health Office
California Energy Commission
1111 Howe Avenue
Sacramento CA 95825

13 FEB 1980

Dear Ms. Matthews:

The Environmental Protection Agency (EPA) has received and reviewed the Joint Environmental Study for the Northern California Power Agency Geothermal Power Plant No. 2.

The EPA has the attached comments to offer on this project. We appreciate the opportunity to comment on this document and request copies of subsequent documents describing any NEPA actions.

If you have any questions regarding our comments, please contact Susan Sakaki, Acting EIS Coordinator, at (415)556-6925.

Sincerely yours,

Carl C. Kohnert, Jr.

Carl C. Kohnert, Jr., Director
Surveillance and Analysis Division