

UNITED STATES GOVERNMENT

# Memorandum

TO : Robert Lowenstein, Director  
Division of Licensing & Regulation, HQS

FROM : *Rod Southwick*  
Rodney L. Southwick, Assistant to the  
Manager for Public Information, SAN

SUBJECT: ALEX GRENDON

MI:RLS

DATE: December 14, 1962

I had a brief conversation yesterday with Alexander Grendon who said he had prepared a letter two weeks ago to you on recommendations for conducting a public meeting and formal hearing on Bodega Bay at Santa Rosa or San Francisco. He had not dispatched the letter because the press relations advisors to the Governor said no release should be made until the application had been filed by PG&E.

I told Grendon, his views should be in your hands right away and that a release was not necessary in a communications of this sort at this time. If he wants credit for AEC holding hearings out here, I suggested this could be made part of the hearing record or released later after PG&E files its application. I explained you needed to have his views on record. Grendon says he'll send you the letter right away.

cc: Joe Fouchard, DPI, HQS



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PDR FOIA  
FIREST085-665 PDR

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LAW

Dale Cook  
AEC

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Bodega Bay Atomic Park Unit No. 1  
CPUC Application No. 43808 -  
Decision No. 64537

December 3, 1962

MR. R. H. GERDES:

Two petitions for rehearing, copies of which are attached, have been filed in the above matter.

Dr. J. B. Neilands, University of California Professor of Biochemistry in his petition filed November 27, 1962, claims that "during the past few months the history of the University of California operations at Bodega Head has been researched with the result that new and important evidence has been brought to light". That evidence is in the form of a brief history of the University attitude toward the impact on its plans for a marine laboratory of warm water discharge and access road location. These subjects were aired at length in the hearings, and therefore this petition will probably be unsuccessful.

David E. Pesonen filed a petition on behalf of the Bay Area Chapter of the Northern California Association to Preserve Bodega Head and Harbor on November 28, 1962. This petition sets forth a "number of grounds". First, it is claimed that certain radiation standards relied upon by the Commission as insuring safety are, since the hearings, subject to change. Second, it is argued that the record is inconclusive on the subject of reactor safety. Third, testimony received on the proximity of the San Andreas Fault is described as "inconclusive". He describes these as "circumstances which could not reasonably have been foreseen at the time of hearings" and as rendering "the basis for the Commission's decision to this point no longer supportable". Because there is no disclosure of legal error, or the absence of an important finding or disclosure of new substantial evidence, we doubt that this petition will cause the Commission to order a rehearing.

The filing of these petitions has not stayed the effective date of the Bodega Bay certificate, namely, November 28, 1962. The Commission could in any order of rehearing suspend, or upon rehearing, revoke the certificate it issued in its interim order of November 8, 1962.

December 3, 1962

An answer to these petitions is being prepared for filing.

JOHN C. MORRISSEY

JCM/lfs  
Encls.(2)

cc: w/encls.

NRSutherland  
SLSibley  
LHAnderson  
JSMoulton  
RWJoyce  
AJSwank  
HMHaberkorn  
JFBonner  
RRCros  
LWCoughlan  
RBLuce

RHPeterson  
IWCollins  
CCWelchel  
JDWorthington  
WChoney  
SEBarton  
WJohnson  
TRSalva  
JJCarr  
AJMcCollum

WCLester  
FTMautz  
WHutting  
KJDiercks  
ARTodd  
FTSearls  
PAuzane  
JSCooper (Washington)  
ESDay (2)  
LRSelna, Jr.

PETITION

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the matter of the application of Pacific Gas and Electric Company for a certificate of convenience and necessity to construct, install, operate and maintain Unit No. 1, a nuclear power unit, at its Sodega Bay Atomic Park. Application No. 43808  
Decision No. 64537

Now comes the undersigned with a petition for a rehearing designed to resolve the controversy on the effect of the proposed Sodega Bay Atomic Park on the Sodega Head area as a locale for marine biological research and study.

Introduction Contemporary marine biology is a new frontier in natural science which, in the long view, may prove as beneficial to mankind as the exploration of outer space or investigations in the sphere of atomic energy. Work in this field has moved on from the classical phase to the point where, for example, we can envisage solution of the world food problem through algal culture. In addition, research on such direct objectives is certain to be rewarded with purely fortuitous discoveries such as the recent finding that, among a large number of experimental animals tested, only in the sand dollar will thalidomide consistently kill the developing embryo<sup>1</sup>.

In 1956 the Chancellor's Faculty Committee of the University of California centered its attention upon Sodega Head as the favored site for a marine facility. This selection, which was made after careful study, was certainly an intelligent choice (see the National Park Service report which finds Sodega Head to be "one of the significant biologic areas of the Pacific Coast"<sup>2</sup>).

The purpose of this petition is to call for a rehearing which would conclusively assess the effect of the subsequent planned industrialization of Sodega Head on the biological integrity of the area.

Since the University of California is a public institution it follows that an inconvenience to the University becomes at once also a public inconvenience.

Basis for petition for rehearing During the Commission hearings, expert marine biologists from Stanford University (Western Society of Naturalists), San Francisco State College and the University of the Pacific testified in opposition to the Sodega Bay Atomic Park. Dr. Joel Hodgketh, from the latter institution, is a marine biologist of 20 years experience. He is Director of the University of the Pacific Marine Station at Dillon's Beach which is only a few miles from Sodega Head. On March 5 of this year he informed the Commission that "Location of this plant and its service roads will seriously interfere with the original plans of the University of California to utilize this area for marine research"<sup>3</sup>. This opinion is supported by the attached letter from Dr. W. D. McElroy (Attachment I).

Now in Decision No. 64537 the Commission has determined that Sodega Bay Atomic Park will not impair operation of the Sodega Marine Laboratory. They state "Many of the protestants seemed to take the position that the nuclear plant and either marine biology or conservation are mutually exclusive, that one cannot exist along side the other. The record, however, belies their position."

This opinion appears to be based solely on certain statements made in the course of the hearings by Mr. A. S. Leopold, Assistant to the Chancellor of the University of California (Berkeley). Since those statements by Mr. Leopold were at variance with those of expert marine biologists from other universities, protestants made persistent attempts to subpoena the files of the Chancellor's Faculty Committee on the Marine Biological Laboratory. All of these requests were denied by the Hearing Examiner.

During the past few months the history of University of California operations at Sodega Head has been researched with the result that new and important evidence has been brought to light. This material provides the basis for the present request for a rehearing.

Newly discovered evidence The possible deleterious effect of the Sodega Bay Atomic Park on the function of the Sodega Marine Laboratory may be discussed under two headings, namely, (a) the effect of the warm water discharge and (b) the effect of the tidelands access road.

(a) Warm water discharge The ultimate effect of the warm water effluent on shore life is, admittedly, difficult to predict. However, Mr. Leopold's contention that it is not expected to be serious is probably an optimistic conclusion. In the summer of 1960 the University apparently regarded this degree of pollution as intolerable (Attachment II; the volume has now been fixed at 250,000 gallons per minute) and the decision was made to abandon Sodega Head entirely.

The committee of biologists spent the autumn of 1960 searching for an alternate site and it has been rumored that on November 29, 1960, they transmitted a sharply worded report to Chancellor Seeborg. The present Chancellor, Dr. E. W. Strong, has declined to make this report available to interested members of the faculty and until recently

he has managed to keep it out of the public domain. However, the Sebastopol Times for October 11, 1962, has now published what is claimed to be a verbatim passage from that report, namely, "weighing all relevant aspects, we agreed unanimously that there was not a single one of those sites that was equal to Bodega Head as it now stands. Bluntly stated, a unique Class A site for a marine facility is being exploited for power production."

In the meantime Pacific Gas and Electric had retreated to the tip of the headland and the Committee reluctantly decided to occupy the adjoining property to the north.

At the Commission hearings in May, 1962, Mr. Leopold sought to justify the return to Bodega mainly on the basis of certain studies made in Great Britain concerning the effects of power plant discharges on marine ecology. During cross examination, however, the British studies were shown to be slipshod and inapplicable to the Bodega Head situation. Furthermore, the University calculations, confessed Mr. Leopold, were based on the expectation of one unit whereas the Company had announced that in the near future three additional units would be installed thus bringing to 1,000,000 gallons the amount of warmed water discharged per minute. Limitations of space do not allow a total exposition of the other deprivations to the environment which may ensue from the rapid transfer of this volume of water.

(b) Tidelands access road The University was apparently taken completely by surprise by the convenient arrangement between Sonoma County and PG&E whereby an access road would be laid through the state-owned tidelands. Chancellor Strong characterized the subsequent realignment of a portion of the road over University property as a "minor concession" and he pleaded with the Army Corps of Engineers to withhold from Sonoma County the necessary construction permit (Attachment III). In the public hearing which followed on February 15, 1962, the Acting-Director of the Marine Laboratory, Dr. Cedot Hand, condemned the roadway "in its entirety". He stated that the harbor frontage of the University was atypical and essentially useless for biological studies and that the proposed road would destroy "some of the very values which led us to choose this headland as our site in the first place" (Attachment IV).

In spite of these pronouncements Mr. Leopold appeared before the Commission to testify, without elaboration, that the University no longer opposed the road. He mentioned that Dr. Hand took a firmer stand against the road than Chancellor Strong but this conclusion is not supported by Attachment III to this petition.

In the recent decision of the Commission it is perhaps significant that Commissioner Holaboff filed the following dissenting opinion on the location of the tidelands road: "I find nothing in the arguments for the tidelands road which suggests that it is necessary for it to be so located in order to effectively serve the plant site; admittedly, an upland road would accomplish this purpose equally well. Nor do I find anything in these arguments which suggests that such a road would be convenient, for the record is replete with reasons suggesting substantial detriment to the public resulting therefrom". Indeed, the cost differential between a tidelands and an uplands route is nominal and there is nothing in the record to indicate that the applicant strongly favors the former location.

Footnotes

- <sup>1</sup> THIS WORLD, San Francisco Chronicle, August 26, 1962
- <sup>2</sup> PACIFIC COAST RECREATION AREA SURVEY, DEPARTMENT OF THE INTERIOR, 1959
- <sup>3</sup> Letter from Joel W. Hedgpeth to Public Utilities Commission dated March 5, 1962

Prepared in Berkeley, California, this 26th day of November, 1962.

Distribution: To all appearances before A43808.

Respectfully submitted,

*J. B. Neilands*

J. B. Neilands

Attachment 1

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THE JOHNS HOPKINS UNIVERSITY  
Baltimore 18, Maryland

Mergenthaler Laboratory  
for Biology

May 9, 1962

Dr. J. B. Nailande  
Department of Biochemistry  
University of California  
Berkeley, California

Dear Joe:

I have heard that an atomic installation is planned very near to where your new marine biology lab is to be located. I hope that this is not an irreversible decision. It would be most unfortunate to have such a plant near the laboratory site for, as you know, this will greatly alter the total ecology around the lab in a very short time. Unfortunately, there are too many places these days that are being contaminated by industrial wastes and as a consequence much of our shore line has been destroyed for biological studies because of our inability to control the situation. I hope that this does not happen at your new site and I encourage all of those who might be concerned to look into this matter in great detail before a final decision has been reached.

Sincerely yours,

W. D. McElroy  
Chairman, Dept. of Biology  
Director, McCollum-Pratt Inst.

WDM/hy

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Note added by recipient:

Dr. McElroy is President of the American Society of Biological Chemists, the highest elective office in American biochemistry. He is a member of the Executive Committee of the Woods Hole Marine Biological Laboratory, the latter recognized as the foremost laboratory of its kind in the world, where he has taught the course in Physiology for five years. Dr. McElroy has been associated with an Ad Hoc Committee concerned with the granting of federal funds for the establishment of marine research facilities.

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## THE UNIVERSITY OF CALIFORNIA

Clark Kerr  
President of the University

Glenn T. Seaborg  
Chancellor at Berkeley

Office of the Chancellor  
Berkeley 4, California  
June 28, 1960

Mr. Philip S. Flint  
The Sierra Club  
611 Bryant Street  
Palo Alto, California

Dear Mr. Flint:

I have delayed answering your letter of June 8, 1960 until I had received written reports from the oceanographers and biologists considering the Horseshoe Cove, Bodega Head site for a Marine Biological Laboratory. I have now received those reports, and will try to summarize them for you as requested.

Cooling water for the PG&E power station would be drawn continuously from Bodega Bay just inside the entrance channel, and would be discharged on the beach at a point about 4000 feet south of Horseshoe Cove. Pumping would be at the approximate rate of 200,000 gallons per minute. Normally, the discharge water would be 13 to 16 degrees Fahrenheit warmer than the intake water. At times the cooling water would be recirculated to raise its temperature approximately 50 degrees Fahrenheit above intake temperature to remove the growth of fouling organisms in the lines. The frequency of this operation can be predicted only by operating experience, but it was the opinion of the PG&E engineers, with whom our people consulted, that this might be once a month and for a duration of 20 minutes.

The oceanographers stated that normally the warmed water would flow to the south, away from Horseshoe Cove, but that northerly flows could be expected from time to time, and during these periods Horseshoe Cove might be expected to be bathed for periods of some hours in the essentially unmixed effluent at near discharge temperatures, i.e., 10 to 15 degrees Fahrenheit warmer than the normal ocean temperature in the vicinity.

The committee of biologists studied this report and concluded that they could not forecast with any precision what the consequent ecological changes would be, but the fact that the ecological future of Bodega Head was unpredictable made it undesirable to locate a marine laboratory at Horseshoe Cove, in view of the plans for the power station. Thus, the committee is now exploring alternate site possibilities.

I should like to correct a misconception contained in your letter to the effect that "The Laboratory was to be the second largest oceanographic station in the United States". In reality, the University is planning to develop a teaching and research station of modest size for use by the Berkeley and Davis campuses.

Sincerely yours,

Glenn T. Seaborg

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Attachment 111

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UNIVERSITY OF CALIFORNIA

Office of the Chancellor  
Berkeley 4, California

December 8, 1961

Colonel John Morrison  
United States Corps of Army Engineers  
180 New Montgomery Street  
San Francisco, Calif.

Dear Colonel Morrison,

In response to United States Army Engineers District, San Francisco, Corps of Engineers Public Notice No. 62-51, the University of California wishes to register a formal protest against the proposed tidelands road along the west shore of Sodega Harbor.

After many years of study the University chose Sodega Head as the best site for the new Marine Biological Research Laboratory. The choice was based upon many conditions, one of the most important being that the site offers maximum variety of ecological habitats which by their nature provide the greatest variety of faunal and floral elements. Our proposed plans call for research and teaching in all areas of marine biology and our success will in part depend upon ready access to a wide variety of organisms. The natural shoreline is one of the richest sources of invertebrate life. It would be obliterated by the road.

Looking back on the history of biology, many significant advances in knowledge have had their origin in the study of marine organisms such as those that occur along the shore of Sodega Bay. Most of our basic knowledge of cell division, oxygen transport by blood, nervous transmission, excretion and reproduction have come from the study of sea urchins, worms, squids and other marine animals. The discoveries originally made on these lowly creatures have played vital roles in our understanding of man and from marine research have developed principles in medicine upon which we are all dependent for our well being. Since there is no way to predict from what particular marine organism some new and important discovery may be made in the future, we can only regard every marine organism as a scientific asset to be preserved for study.

In the higher reaches of the tidal zone - where the road will be - there are large numbers of interesting marine animals. Several species of clams (*P. staminea*, *T. decussata*, *M. arenaria*, *M. irus*, *M. baltica*, *M. nasuta*) are to be found only in this habitat. Three of them, the cockles *Protothaca* and *Tapes* and the long-necked clam, *Mya*, are highly regarded as human food. Huge beds of the ghost shrimp (*Callinassa*) and its associated fauna occur here too. The road would cover beds of the alga *Vaucheria* and the associated Nudibranch mollusk *Alderia* as well as the numerous species of smaller organisms such as copepods, protozoan and segmented worms. In places the projected road moves into deeper water where it would affect other important organisms such as the edible horseneck and Washington clams. Thus the proposed road would obliterate in the vicinity of our laboratory an important segment of the local fauna.

From the standpoint of the University an overland route to the Campbell Cove area would be very much preferable. Such a route would be more scenic, would avoid encroachment of the tidal prisms and would preserve the natural shoreline and tidal areas which we hope to use as sources of organisms for our studies. At present the harbor shoreline is an attractive and biologically rich area as attested by the thousands of shore birds which gather there to feed. These values would disappear with a tidelands road while an interior routing would avoid the significant losses indicated above.

The University has discussed the routing of the road with Sonoma County officials and received from them a minor concession in the form of inland routing of a short portion of the road on what will be part of the Marine Research Station site. This particular bit of shoreline which will be preserved is actually atypical, consisting largely of wind-blown sand from the adjacent dunes; it does not have many of the fauna elements present elsewhere along the shore. At the early meetings with the County, Dr. Cadet Hend, the Acting-Director of the Marine Research Station, informed the meeting that he opposed the shoreline road and, in fact, that he would be derelict in his duty if he took any other stand. The destruction of the biological resources would lower the value of Sodega Bay as a scientific research site, and on these grounds we register our objection to the proposed road.

cc  
Clark Kerr  
Emil Mark  
V. Guidotti  
J. Prather  
Richard Croker

Charles de Turk  
Richard Hartsok  
D. Mazie  
Cadet Hend  
James Moulton  
Clom Miller

Sincerely,

E. W. Strong



TESTIMONY OF DR CADET HEND, ACTING-DIRECTOR UNIVERSITY OF  
CALIFORNIA BODEGA MARINE LABORATORY, BEFORE ARMY CORPS OF  
ENGINEERS HEARING ON TIDELANDS ROAD, FEBRUARY 15, 1962

Colonel Morrison and Gentlemen. I am Cadet Hend, Associate Professor of Zoology and Acting-Director of the Marine Research Station of the University of California. I am a professional marine zoologist, with experience at marine laboratories on both the east and west coasts of the United States and, as well, have spent extensive periods of time at marine laboratories in Hawaii, New Zealand and Australia.

I am going to divert from my prepared statement to make clear the reasons under which I am present. When Mr. John Prether addressed you he read a letter signed by Chancellor Strong dated February 8, 1962. I have a copy of that letter before me. Since it is clear by the introduction of that piece of evidence into the record by Mr. Prether that he felt that this was an aid to his cause, as he represents the County, I would like to say that I have Chancellor Strong's permission to be here to protest this road in its entirety.

With these comments, I will return to my prepared speech.

A little background on the reason why the University of California has chosen Bodega Head as a site for its new marine laboratory is pertinent to my discussion. In our search for a site, which has been an active search since 1953, one of the primary considerations has been that the site must provide ready access to a maximal variety of marine organisms. This means that we have looked for locations which best combined the variety of life to be found in protected bays and harbors, mud and sand flats, sandy beaches and the open outer coast. Very few situations exist in California which meet these requirements and which are close enough to the University campuses of Davis, San Francisco and Berkeley to be available to the students, faculty and research staff of these institutions. Bodega Head, we found, was the only location which met all of our requirements. We critically examined the area from Monterey to Bodega and beyond and systematically eliminated the Monterey area, the San Francisco area, the Bolinas area, the Pt. Reyes area and the Tomales Pt. area. Bodega Head clearly is an exceptional site from our point of view, and based upon our recommendations the Regents of the University have authorized the acquisition of a portion of the headland for our use.

Now, why do we need a maximal variety of marine organisms? The history of biology is relevant here. Man's knowledge has accrued slowly and it is interesting to note that while today we have a huge knowledge of ourselves, the knowledge which the doctor applies to keep us well, or to repair us if we are injured or ill, came in the first instance from studies of organisms other than man himself.

In many instances these organisms have been marine ones and we can point to such organisms as squid and worms for our basic knowledge of nervous function, to worms again for the chemistry of blood and to clams for information on heart function.

Our knowledge of the chemistry and biochemistry of embryology and subsequent development, as well as our knowledge of the intimate details of cell division have come from the study of marine animals, the latter in fact from studies of sea urchins collected right here along our Sonoma County shores.

The ocean has not only contributed organisms which fortuitously have provided us insight into ourselves, but from the oceans come rich harvests of food. To make full use of the ocean and its many secrets we are going to have to investigate in the most intimate manner every marine organism known to us, and we must zealously guard the biological assets we have around us. To lose the opportunity of critically examining a single marine organism may mean the loss of our only chance to make man's life better in some particular aspect.

As further evidence of the necessity of studies on marine organisms, I should cite the fact that there are at this moment three bills pending in the Senate and House of Representatives of the U.S. which are devoted to increased Federal support of marine research activities and the President's (of the U.S.) new budget doubles the size of funds for marine research. There is an air of urgency concerning the news for marine studies and man's very survival on this planet may depend upon the knowledge we gain from the sea. Certainly, in the face of expanding and exploding populations, the development of our use of marine resources must be multiplied manyfold if we are to solve even our needs for food.

With these introductory remarks, I will now turn my attention to the matter of the west shore road. It should be clear from my previous remarks that the University as represented by its scientists must hold as critical every organism available to us. We are developing a new venture, a marine laboratory, to take advantage of the remarkable diversity of organisms available in the harbor and along the coast of Bodega Head.

We cannot tell you now the precise value that may come from the study of any one species but history has taught us that each organism has its own secrets and we know full well that each additional bit of new information will find its place in our total knowledge

(continued)

of man and this world.

Some of this new information may unlock difficult problems related to our health, our safety and our overall well being. Each organism is a treasure-trove, a museum of biological information, waiting for us to turn it to our own advantage. To destroy a single species could, in the long run, turn the balance in our fight for survival against us and cause our final demise.

This is a grim and gloomy picture, but it is scientifically valid. To choose between man's survival and the fleeting values provided by the west shore road is thus a simple matter.

The road itself as proposed will destroy untold thousands of organisms. The best beds of rock cockles in this area will be covered by the road as well as such other edible clams as Washingtons, Horse-necks and the introduced steamer, the soft shell clam. Great beds of the blue and white ghost shrimp, the sausage worm Urechis, clam worms, ribbon worms and many different segmented worms will meet their end under the spoil-egg used to build the road.

Beds of a curious marine plant, Vaucheria, and an associated marine slug will be destroyed, as well as a host of other organisms. The higher reaches of the shore, where the road will be, are favored feeding grounds of great flocks of curlews, avocets and other kinds of shore birds. These great flocks of birds, incidentally, are testimony to the wealth of small marine animals which live along these shores. It is the loss of these many marine organisms and the great values that they have to us as scientific resources that causes us to strenuously protest the road.

The County of Sonoma has been generously cooperative in rerouting a portion of the road over the proposed University property, and they have promised additionally to remove the road from essentially all of the tidelands along that portion of the shore. For this we are most grateful.

Unfortunately, a large portion of the harbor frontage of the University site is atypical and is loose windblown sand rather than the rich finer silts of other parts of the shore. Thus, while this rerouting protects and saves many organisms, the road throughout the rest of its length destroys some of the very values which led us to choose this headland as our site in the first place.

It is regrettable that a great University and a great County find themselves at odds, but the values lost to the University, County, State, Nation and World by the presence of such a road far outweigh the short-term values such a road might bring to the County and its users.

Thank you.

Applause

(Statement of Dr. Cadet Hand marked Exhibit AAA)

BEFORE THE  
PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

In the matter of the application of )  
PACIFIC GAS AND ELECTRIC COMPANY for )  
a certificate of public convenience )  
and necessity to construct, install, )  
operate and maintain Unit No. 1, a )  
nuclear power unit, at its Bodega )  
Bay Atomic Park. )  
(Electric) )

Application No. 43808

Decision No. 64537

PETITION FOR REHEARING

INTRODUCTION

The Bay Area Chapter of the Northern California Association to Preserve Bodega Head and Harbor asks leave to request a rehearing on the above application on a number of grounds supported in this petition. It is clear that the reasons herein set forth stem from circumstances that could not reasonably have been foreseen at the time of the hearings of the Commission on this application in May and June of 1962. They are matters of profound, perhaps paramount, importance.

1.

RADIATION STANDARDS

1) The record reflects three principal witnesses whose testimony has been used to support the Commission's conclusion that radioactive wastes from the Bodega Bay Atomic Park will not exceed levels established by the Atomic Energy Commission in Title 10 of Federal Regulations Part 20. These are the State Coordinator of Atomic Energy Development and Radiation Protection, a consulting biologist for the Company, and witnesses in the Company employ.

The standards set forth in the CFR are based on a "threshold concept" of acceptable radioactive contamination of the environment. Since the earlier Commission hearings, however, the "threshold concept" has fallen into disrepute among knowledgeable radiation specialists.

This fact is supported in the following three documents, none of which was

reasonably available to protestants at the time of the earlier PUC hearings on this application: (a) Radiation Standards, Including Fallout, Summary-Analysis of Hearings Held on June 4, 5, 6, and 7, 1962, before the Subcommittee on Research, Development, and Radiation of the Joint Committee on Atomic Energy, published September 1962. (b) Radioactive Contamination of the Environment: Public Health Action, A Report to the Surgeon General prepared by the National Advisory Committee on Radiation, U. S. Department of Health, Education, and Welfare, Public Health Service, dated May 1962 but not released until June; (c) Report of the United Nations Scientific Committee on the Effects of Atomic Radiation, General Assembly, Official Records: Seventeenth Session, Supplement No. 16 (A/5216), released August 1962.

2) In addition to testimony regarding recognized hazardous nuclides, new data has become available since the Spring hearings on Cesium 134, a reactor by-product about which so little was formerly known that CFR standards were little more than guesses. Cesium 134 was not mentioned in the earlier hearings. Reference: Nature, Vol. 195, p. 1040.

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#### REACTOR SAFETY

1) The Commission's decision notes that the "staff took an active part in the hearing through cross-examination, particularly with respect to the nuclear features and safety aspects."

We believe that the record itself belies this statement. One electrical engineer was the sole technical staff member present; he performed only sporadic cross-examination, and that dealt principally with seismology -- a field in which the Commission's own decision has relied for information on Company witnesses and consultants.

2) The plant's safety system, which has never been tested in a working reactor, was given only the most casual attention. Further the history of reliable operation of boiling water reactors was not even touched upon in the hearings. Yet on August 20-21, 1962, the Atomic Energy Commission's final review of the explosion at the SL-1 boiling water reactor at the National Reactor Testing Station at Arco, Idaho, in January 1960, concluded that the cause of the explosion could not be determined.

3) The record shows that at each point where protestants groped toward

information on reactor reliability when cross-examining Company witnesses, the line of questioning was discouraged by the hearing examiner.

4) The fact that reactors are of questionable reliability and that a reactor failure could be of catastrophic proportions is suggested by (a) the fact that an absence of statistical information has forced reactor technicians in their zeal to employ such subjective language as "credible" and "incredible accidents" when discussing the subject; (b) the fact that established insurance firms decline to insure the applicant against reactor failures. The Federal Government, therefore, at the urging of the AEC and in a headlong commitment to reactor development, has unwisely seen fit to provide \$500 million guaranteed Federal indemnity. This acts not only as a subsidy but as a premature spur to construction of the Bodega Bay Atomic Park.

5) On November 26, 1962, the chief of the Atomic Energy Commission's Reactor Development Division announced that the AEC has initiated a program of reactor testing at its Arco, Idaho, site to study "maximum credible accidents."

Since the PUC record is inconclusive on this subject and in light of the AEC's activities it is difficult to agree with the Commission's concurrence with a witness for applicant's characterization of the Bodega reactor as "inherently safe."

The decision further, erroneously we feel, states that "this will not be an experimental plant as it will consist of components which have been pre-tested in other units." The pressure suppression containment system has not been tested in other units and the fact that it has been approved for use in the much smaller Humboldt Bay plant, which is not yet in operation, constitutes nothing more than approval for use; it is not a test.

The error of the decision is further compounded by the fact that the components for the Bodega reactor will not only be much larger than in any other reactor but have never before been coupled in one unit. This would be a custom-made reactor differing in several respects from any other reactor extant. The fact remains, therefore, that it is experimental and any assurances that it is "inherently safe" are without substantive reliability.

#### IV

#### PROXIMITY OF THE SAN ANDREAS FAULT

The issue of the San Andreas Fault's proximity to the proposed reactor

location was considered at length during the May and June hearings. Yet the sum of the testimony on record was inconclusive. It dealt almost entirely with the effect on the reactor structure--principally the vessel--in the event of an earthquake. The record was so inconclusive on this point that the Commission staff requested further exhibits, and submission of these late filed exhibits was the note on which the hearings closed.

Decision 64537 reflects no more attention to these exhibits than the simple act of receiving them. Further, consideration of the effects from a jolt along the fault on the delicate "fail-safe" control mechanisms of the reactor does not appear in the record. This again reflects the casual attention forthcoming from the Commission's one outnumbered technical staff-man. Documents available from Atomic Energy of Canada Ltd., describing the causes of the reactor incident at Chalk River, Ontario, in 1952, prove that there is great likelihood of eventual control failure even without assistance from an earthquake.

#### CONCLUSION

The very framework on which the witnesses who testified in respect to radiation, reactor safety, and hazard potentials from earthquakes, pegged their tranquilizing reassurances lies in shambles. Their testimony to this point, therefore, is impeached and the basis for the Commission's decision to this point is no longer supportable.

The Bay Area Chapter of the Northern California Association to Preserve Bodega Head and Harbor wishes to draw the Commission's attention to the fact that radiation is a subject of profound and progressing public concern. Further the Commission should note that, pending AEC hearings notwithstanding, the California Public Utilities Commission is the last forum before which the people of the State can hope to receive fair treatment. The Commission's attention is directed to a public meeting held in Santa Rosa on November 10 at which it was abundantly clear that the field of atomic energy raises unprecedented problems not only in the regulation of public utilities but in sustaining the very fiber of our democratic processes. Finally the Commission's thoughts are invited to dwell on the significance of the information presented in a series of articles in the Sebastopol Times (Sept. 27, Oct. 4, 11 & 18) which permit the reasonable inference that

Applicant came before the Commission without properly obtained preliminary documents from the Government of Sonoma County.

All the above in mind, we respectfully request that the California Public Utilities Commission set aside its interim decision No. 64537 and rehear Application No. 43808, so far as new information can be brought to bear.

for/NORTHERN CALIFORNIA ASSOCIATION  
TO PRESERVE BODEGA HEAD AND HARBOR,  
BAY AREA CHAPTER

By David E. Pesonen  
David E. Pesonen  
Secretary  
2731 Durant Ave.  
Berkeley 4, California

November 27, 1962

Distribution: To all appearances before  
Application No. 43808

the present standards but would include whatever standards the AEC may adopt in the future. <sup>4/</sup> Therefore, attack upon a particular rule set by the AEC should be made before it and not the CPUC.

(2) Proceedings would never be concluded if a rehearing were undertaken each time a new publication concerned with the same general subject matter as those proceedings was offered for consideration.

(3) The Commission, without abdicating any portion of its responsibilities, has properly indicated confidence in the results of review by another regulatory agency, expert in the field of radiation standards--the Atomic Energy Commission. <sup>5/</sup>

Second, the petition argues that "the PUC record is inconclusive on [the] subject [of reactor safety]". Several facts make clear that this fails to establish a ground for rehearing. They are as follows:

(1) There is presented no new evidence nor any substantive evidence at all that the reactor planned for Bodega Bay will be unsafe.

(2) "The plant's safety system", which consists of instruments to detect potentially hazardous conditions, has, contrary to the statement found in the petition, not only been tested in a working reactor, but substantially the same system is currently in use at Dresden, Vallecitos and several other boiling water reactor plants now in service.

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<sup>4/</sup> CPUC Dec. No. 64537, p. 6:

" . . . . Gaseous wastes . . . will be monitored continuously to assure that standards established by the Atomic Energy Commission will not be exceeded."

<sup>5/</sup> CPUC Dec. No. 64537, p. 13:

" . . . . Applicant must secure a construction permit and four licenses from the Atomic Energy Commission to assure, among other things, that the nuclear unit can be constructed and operated without undue risk to the health and safety of the public."



(3) The decision's reference to testimony 6/ that the plant will not be experimental since it will consist of components pre-tested in other units does not constitute error. The reference does not purport to be a finding. Further, we can expect that each reactor built in the future will contain improvements over those previously built (just as do newly-designed conventional units being built today). All such improvements are pre-tested before installation to assure that they are safe as well as practicable and economic. New units containing such improvements are not considered experimental. The principal nuclear "component" in the Bodega Bay installation will be the reactor itself which will be of the boiling water type, with which there has been more operating experience than with any other type.

(4) The pressure suppression concept, one of the improvements contemplated for use in the Bodega reactor, has already been tested for an accident magnitude well beyond the maximum credible accident. Testing conducted before the independent scientific arm of the AEC, the Advisory Committee on Reactor Safeguards, has satisfied that group as to its effectiveness. 7/

(5) The record, contrary to the assertions of the petition, does reflect consideration of the effects of an earthquake upon control mechanisms as well as upon all other equipment. P.G. and E. will follow design criteria established by its consultant, Dr. George W. Housner. 8/ These criteria, including a standard for control rods and safety rods, are to be found in Exhibit 48 of this proceeding in tab 12, a letter from Dr. Housner, at page 7 and at pages 1 and 5 of Appendix B thereto.

(6) The Commission has already expressed its confidence in Atomic Energy Commission expertise on matters of reactor safety

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6/ Presumably Nutting, Tr. 207-208.

7/ Nutting, Tr. 194-195.

8/ Worthington, Tr. 37.

in withholding a final certificate of public convenience and necessity until that agency passes upon the matter and all others within its cognizance and issues the necessary licenses and permits. 9/ Nothing presented in the petition even suggests that this confidence is misplaced.

Third, testimony received on the proximity of the San Andreas Fault is described as "inconclusive". Again, neither this bald statement contrary to the CPUC conclusion, nor the comments accompanying it disclose a ground for rehearing. The decision made it clear that testimony indicating the absence of active faulting in the general vicinity of the reactor had been "supplemented and substantiated" by applicant's late-filed Exhibit 48". 10/ Petitioner's comment that "decision 64537 reflects no more attention to these exhibits than the simple act of receiving them" simply is not in accord with the Commission's statement.

WHEREFORE, PACIFIC GAS AND ELECTRIC COMPANY respectfully urges that the Commission deny the petitions for rehearing on file in this proceeding.

Dated at San Francisco, California, this 4th day of

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9/ CPUC Dec. No. 64537, p. 25, Interim Order paragraph 1(c):

"The certificate herein granted is interim in form and will be made final by further order of the Commission upon the establishment by evidence in the record (1) that proper authority has been secured from the Atomic Energy Commission to construct the nuclear energy plant, herein certificated, and that all other franchises, licenses or permits have been secured as required by law, . . ."

10/ CPUC Dec. No. 64537, p. 20.

December, 1962.

Respectfully submitted,

F. T. SEARLS

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JOHN C. MORRISSEY

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PHILIP . . CRANE, JR.

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LELAND R. SELNA, JR.

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245 Market Street  
San Francisco 6, California  
Attorneys for Pacific Gas and  
Electric Company

CERTIFICATE OF SERVICE

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I hereby certify that I have this day served the foregoing document upon all parties of record in this proceeding by mailing by first-class mail a copy thereof properly addressed to each such party.

Dated at San Francisco, California, this 4th day of December, 1962.

LELAND R. SELNA, JR.

# New Block Aimed At PG&E Plant

SANTA ROSA PRESS DEMOCRAT -

The State Public Utilities Commission has been asked to look at "newly discovered evidence" and reconsider its decision to let the Bodega Head nuclear-fueled power plant be built.

A petition filed yesterday with the PUC by University of California biochemistry professor Dr. J. B. Nellands declares a UC faculty report on the plant in relation to UC's planned marine biology station on the headlands has been suppressed.

And it says the new evidence bears on the possible deleterious effect of the plant and its access road on the proposed laboratory.

The petition is to be considered by the PUC at a conference at an unspecified time. A permit has been granted Pacific Gas & Electric Co. for construction of the plant in a PUC order that became effective today.

What immediate effect the petition may have on the utility company's plans for the \$61 million plant could not be determined today.

Authoritative sources have it that the company is on the verge of awarding a contract for the initial construction, which would include the westshore road, to Arthur B. Siri Co., Santa Rosa.

The contract would involve excavation of more than 600,000 cubic yards of material from the headlands and construction of the road which is to generally follow the tidelands on the west side of the harbor to the plant site.

## Discussed Earlier

The Nellands petition reopened a question dealt with at some length during protracted hearings by the PUC earlier this year on the plant proposal.

At that time, although various opponents made charges ranging from PG&E-PUC "collusion" to "pressure" on UC, Assistant Chancellor A. Starker Leopold presented the official UC position of neutrality.

The university, he told the PUC, "neither supports nor opposes" the power plant installation next door to the university's planned 20-acre research laboratory.

During the hearing he conceded there was "some difference of opinion" among faculty members about the site in view of PG&E plans, but the final conclusion was that the warm water discharge effects would be "so slight as to be scarcely noticeable" and radioac-

War against the PG&E plant will open on another front Tuesday when a member of the Northern California Committee to Preserve Bodega Head and Harbor plans to ask the county Board of Supervisors to re-open the use permit it has granted for the plant.

Mrs. Doris Sloan, 734 Litch-

field rd., Sebastopol, said she will appear at 2 p.m. Tuesday to ask for a public hearing on the plant.

Major considerations are the safety of the nuclear reactor, she said, as well as the "right of the people to obtain and discuss information" on such a project.

the laboratory. Among support for his contentions are citations of testimony given by Dr. Cadet Hand, acting director of the UC Bodega laboratory, before a U.S. Army Corps

But Dr. Nellands' petition says the new evidence deals with the warm water discharge and the effects of the tidelands road on

(Continued on Page 2, Col. 2)

~~NEW CHARGES~~  
JUL 17 1962  
COMM. WED. NOV. 28, 1962

# New Charges Aimed At Coast PG&E Plant

(Continued from Page 1)  
of Engineers hearing in February of last year.

At that time Dr. Hand said the road will "destroy untold thousands of organisms," and along its route off the UC property "destroys some of the very values which led us to choose this headland as our site in the first place."

UC sources said the faculty report on the laboratory site mentioned in the Neilands petition said the "unique, Class-A site for a marine facility is being exploited for power production."

The report was prepared by a

committee headed by Dr. Ralph Emerson, professor of botany—a committee assigned the task of evaluating sites and investigating the feasibility of the Bodega site for the laboratory.

### Ouster of Plant

Dr. Neilands says the report called for "ouster of the PG&E plant from Bodega Head" because the committee found the Bodega site the best of 10 sites.

In the petition, Dr. Neilands charges that UC Chancellor Dr. E. W. Strong "has declined to make this report available to interested members of the faculty" and has "managed to keep it out of the public domain."

Dr. Neilands said the university has "failed to defend the biological integrity of the area. I have filed this petition because I believe it is not in the long range interest of the public or the (public utilities) commission to let the record stand as it was."

The PUC decision, based on the testimony taken earlier this year, deals in part with the question raised by Dr. Neilands thusly:

"Many of the protestants seemed to take the position that the nuclear plant and either marine biology or conservation are mutually exclusive, that one cannot exist alongside the other."

"The record, however, belies their position. Spokesman for both the University of California's proposed marine biology station and the State Division of Beaches and Parks made it clear that they are not opposing the nuclear plant, but that it will not interfere with their respective plans for operation and land use on Bodega Head."

On the road question, the PUC decision weighs heavily on the County of Sonoma's declarations that the road would be built anyway.

A supporting opinion written by Commissioner Frederick B. Holoboff goes to even greater lengths to wash the commission's hands of responsibility in judging the road location.

Dr. Neilands' petition, however, asks for a rehearing by the PUC "which would conclusively assess the effect of subsequent planned industrialization of Bodega Head on the biological integrity of the area."

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### Garden Dedicated To Lasting Peace

RISMARCK, N.D. (UPI)—The 2,200-acre International Peace Garden on the North Dakota-Canadian border commemorates the continued peace between the United States and Canada.

CONT. FROM 2 P.M.

**NOW  
SHOWING**

**E YEAR**

## PG&E Files

## Answer To

## Petitions

No new evidence has been presented, so the Public Utilities Commission shouldn't re-open the Bodega Bay nuclear-fueled power plant question.

A brief filed with the PUC yesterday by Pacific Gas & Electric Co. based on that theme declared a pair of petitions asking that the PUC reconsider its recent decision to let the plant be built involve "substantially the same claims" heard "in many instances twice" before in the pre-decision hearings.

The six-page reply, heavily larded with references to testimony previously given the PUC, asks that the requests for re-hearing be denied.

### Nothing New

It contents the petitions contain "no disclosures of error of law nor is there any disclosure of any new evidence in the case."

The PUC order authorizing construction of the \$61 million, 325,000 kilowatt plant came after extended hearings at which conservationists, naturalists and some Bay residents bitterly opposed the proposal.

The order was effective Nov. 26. The first petition asking rehearing was filed Nov. 27 by Dr. J. B. Neilands, University of California biochemistry professor, and the second the next day, by the Northern California Association to Preserve Bodega Head and Harbor, Bay Area chapter.

If the PUC does not act within 20 days of filing, it amounts to a rejection of the petition. Meanwhile, PG&E says its certificate for the plant is valid, but is holding up a construction start until the petitions are disposed of.

Dr. Neilands' petition declared there is "newly-discovered evidence" in the form of a "suppressed" University of California committee report that reportedly said the plant would interfere with the marine biology research station the university proposes on Bodega Head.

The Neilands contention, says the PG&E answer, "may be new to the petitioner," but that "it has repeatedly been before the

(Continued on Page 2, Col. 1)

## PG&E Files Answer To PUC Petitioners

(Continued from Page 1)  
commission" during plant hearings.

The Bodega preservation committee's petition dealt with a number of points dealing largely with questions of safety of the proposed reactor.

It does not, says the PG&E answer, present new evidence or "any substantive evidence at all" that the reactor will be unsafe.

As for contentions that the plant's safety system is untested, the utility company declares the system of instruments to detect potential hazards is "substantially the same" as in a number of presently working reactors.

The "pressure suppression" containment system for the reactor itself, a novel feature of the plant that is also being used at the company's Humboldt Bay reactor, "has already been tested for an accident magnitude well beyond the maximum credible accident . . ." and found safe, the answer says.

The possibility of earthquake damage to the plant has been "carefully considered," the company says, and design will be to criteria set up by seismologist Dr. George W. Housner.

### AEC Permit

The answer relies heavily on contentions that safeguards against reactor hazard will be investigated by the Atomic Energy Commission

before that agency issues a permit for the reactor construction.

Securing the AEC permit before construction is one of the conditions imposed by the PUC in its order authorizing the plant, as well as a requirement of federal law.

The AEC relies on an independent advisory committee — the Committee on Reactor Safeguards — in evaluating applications for permits, the PG&E answer notes.

PUC hearings on the plant proposal were closed after three days of testimony in March of this year. Then, after a "large number of written protests" were received, the PUC opened the subject again for another five days of hearings that finally closed June 6.

The decision in favor of the company was issued Nov. 8.

# PG&E Confirms Road Contract with Siri

(Special to The Press Democrat)  
SAN FRANCISCO—Pacific Gas & Electric Co. today confirmed an open access—the Santa Rosa construction firm of Arthur B. Siri has been awarded a conditional contract for initial construction of the Bodega nuclear-fueled plant site.

PG&E spokesmen said the contract—price unspecified—will not become effective until and unless the Public Utilities Commission disposes of a pair of petitions against its plant license in favor of the company.

But the company confirmed that the Siri firm is "gambling" on that by stockpiling Jenner gravel on Bodega Head—gravel that the firm would use on the construction of the westshore access road to the plant if the license is finally approved.

The utility company said the contract involves only initial leveling of the site of the proposed nuclear-fueled power plant on the headlands and construction of the 2.7-mile access road to reach it.

Construction time—following the schedule on the permit—is estimated at five months.

That will complete a road in near-complete form; after heavy hauling and most of the plant is completed the company is obligated

ed by contract with the County of Sonoma to finish it to county standards and turn it over to the county.

### A Gamble

Mr. Siri today said his gravel-hauling is partly a gamble that he will get the contract, but said if the gravel isn't used for the PG&E project it could be used elsewhere.

The utility company's permit is—says the company—now valid and in effect.

But two petitions have been filed with the PUC asking that the interim approval given the plant be set aside and the question reopened to explore what plant opponents describe as "new evidence" that it should not be built.

If the PUC does not act on the petitions within 20 days of filing—which would put the deadline on the last of Dec. 18—it amounts to a "pocket veto" of the requests.

PG&E has not filed an answer to the petitions, one of which was filed by the Northern California Association to Preserve Bodega Head and Harbor and the other by Dr. J. B. Nellis, University of California professor of biochemistry.

The company had earlier said that it would not start construction until it has also obtained a license for construction from the Atomic Energy Commission.

But with a delay of schedules produced by apparently unexpected opposition to the plant before the PUC, the company has apparently decided to proceed with site work while waiting for AEC approval.

The county's use permit for the plant says that "all necessary permits from state and federal agencies" must be obtained "prior to any construction."

County Planning Director John Prather said he would not consider initial site development and road construction as "construction" under the permit—that the other licenses and permits won't be needed for the job tentatively awarded to the Siri firm.

# Early Work to Begin On PG&E Plant Road

*Santa Rosa Press Democrat 12/4/62*

The Santa Rosa construction firm selected by Pacific Gas & Electric Co. to do initial work on the Bodega Bay nuclear power plant has begun preparations for construction of the westshore bay road.

W. L. Roth, superintendent for the Arthur B. Siri general contracting firm, today said the firm is preparing to haul 30,000 tons of gravel from Jenner to Bodega Head.

This stockpile will be used in the base material for the road when the green light is flashed by PG&E for the actual construction, he said.

A PG&E spokesman said the road construction and initial site development for the \$61 million plant is being held up awaiting a Public Utilities Commission decision on a pair of petitions for rehearing on the interim approval for the plant issued last month by the PUC.

The PUC decision is expected in

the near future, the company spokesman said.

Petitions asking for re-hearing the Bodega case were filed last week by J. B. Nellis, professor of biochemistry at the University of California, and by the Northern California Association to Preserve Bodega Head and Harbor.

They charge that new evidence is available and ask the PUC to take another look at the PG&E proposal to install the 325,000 kilowatt plant on the headlands.

Meanwhile, the nuclear plant proposal was to be under fire on another front today, with appearance of a Sonoma County member of the Bodega preservation society before the Board of Supervisors.

Mrs. Doris Sloan, Sebastopol, said she will ask the board to reopen the question of the use permit it has granted the utilities company for the use of the headlands and submit it to public hearings.



# THE PRESS DEMOCRAT

PAGE 4A

SUNDAY, NOVEMBER 25, 1962

100TH YEAR

## EDITORIAL

### A-Plant Bugaboo

A GROUP CALLING itself the Committee to Preserve Bodega Head has been carrying on a publicity campaign whose theme seems to be that danger to human beings is involved in installation of a nuclear reactor on the Sonoma Coast to serve the useful purpose of producing boiling water to drive generators of electricity.

The list of things that constitute dangers to human beings is virtually endless. As a few random examples, both over-eating and under-eating are dangerous. So are being either a pedestrian or a motorist. We noticed in a news story the other day that a scientist warns that mile-square meteors hit this earth on an average of every 10,000 years and that the law of averages is working against humanity because the last one to hit landed in Nevada 20,000 years ago.

SINCE PRACTICALLY everything you can think of is a danger to human beings, it seems to The Press Democrat that instead of getting alarmed because there has never been a nuclear reactor on Bodega Head before, the thing to do is find out whether it would constitute a remote or a probable danger.

Pacific Gas & Electric Co. obviously has been convinced by its research and experience that there is no danger. It is investing the money of its stockholders by the tens of millions of dollars in the program. It is not doing so for the purposes of either losing its investment or being disrupted by damage judgments growing out of the plant causing destruction.

Nor is the utility company dabbling around, in a multi-million dollar sort of way, in a risky experiment. It has the benefit of several years of experience with the pilot-plant at Vallejos, near Oakland, and the pooled knowledge gained from the other and larger commercial plants around the nation.

NO MATTER WHAT the officials of the utility company think, a license from the Atomic Energy Commission is required before the Bodega plant can be built. And that license will not be forthcoming if the commission has doubts concerning safety.

More than five times as many people have lost their lives in Sonoma County alone in just this one year of 1962 in automobile accidents than have perished as a result of nuclear activity in the entire nation in all the years since scientists learned how to split the atom during World War II. And the national effort includes everything—military and civilian—experimenting with the unknown as well as the operation of tested and proven processes.