Film Production Unit
Media Resources Center
IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY

PROPOSAL
to the
IOWA ENERGY POLICY COUNCIL
for the
IOWA STATE ENERGY
ORIENTATION FILM SERIES
(Development Phase)

19 March 1976

Richard A Kraemer

Principal Investigator

Richard E. Hasbrook

Contract and Grants Officer

IOWA STATE UNIVERSITY

Iowa State University of Science and Technology Ames, Iowa 50010

Film Production Unit
Alice Norton House
Telephone 515-294-2316

March 19, 1976

Rodson L. Riggs
Director, Iowa Energy Policy Council
300 4th Street
Des Moines, Iowa 50319

Dear Rod:

In accordance with your letter of 13 January 1976, we are submitting a proposal for a development phase grant for the Iowa State Energy Orientation Film Series; this is essentially a refinement of the working document reviewed by the Council at their December meeting. Reference to the structure of the proposed Local Advisory Group, discussed in the section on Organization and Procedures, will give you an indication of those persons from agencies other than the ISU Film Production Unit who have reviewed the program and have willingly contributed to the development of this proposal.

Interest in this project is high; this approach to energy orientation has not been done, and it is the consensus of our informal group that it needs to be done as an important part of our long-range energy program. We feel that it will not only serve Iowans, but can assist the cause of energy education throughout the nation.

We greatly appreciate Linda's interest and assistance in providing information and meeting with us during this preparation period, and we hope that we can continue to work with you both. We will be pleased to discuss this project with you at your convenience.

Sincerely,

Dick Kraemer

Richard H. Kraemer
Manager

RHK/bts

IOWA STATE ENERGY ORIENTATION FILM SERIES

PROPOSAL FOR DEVELOPMENT PHASE

INTRODUCTION

In an address to the regional conference of the Interstate Energy Conservation Leadership, held in Des Moines, Iowa, on the 4th of December 1975, Mr. Edward Koenig, Director of Community Relations for the Public Education Division of the Federal Energy Administration spoke of the realities of energy. The gist of his statements was: The energy crisis IS real; it may ebb and flow with economic developments, but it will continue and there will be no easy solutions. It will increasingly affect the life style of our entire population.

Sooner or later (and we are already beginning to see some effects) the citizens of the United States will have to modify their attitudes and actions toward energy production and consumption, willingly or unwillingly, and we will see the development of a new energy ethic in this nation.

While some success may be realized with the adult population, the primary effort for the development of an ethic compatible with the continuing energy situation will, in the long run, have to be carried out in the American school systems. Such an effort must be more than the presentation of facts and figures; while these form the cognitive base upon which many decisions can be based, they must be related to socioeconomic and humanitarian considerations. Thus the concept of a new energy ethic, and a stress on the development of educational materials which meaningfully combine both factual and attitudinal considerations of the total energy situation. This proposal represents an approach toward the development of such an ethic by attempting to provide an ORIENTATION to the many variables which must be included in any consideration of energy use and conservation.

PURPOSE

To present basic facts and problems related to both the short-term and long-term energy situations existing in the United States, and to stimulate discussions of alternative and possible solutions.

The attainment of this purpose can be divided into two steps: a development phase and a production phase. This proposal, while discussing the total project, seeks support only for the development phase, and this restriction is reflected in the ORGANIZATION AND PROCEDURES and BUDGET sections of this document.

AUDIENCE

1. school classes, 9th or 10th grade as part of a module or minicourse on energy;

2. television viewers (film would need to be supplemented by a panel or several discussants, with or without viewer question input).

3. extension study programs, conducted either in conjunction with the television presentation or as discussion group stimulators as a part of organized meetings in the field.

SPECIFICATIONS

16mm, sound, color, approximately 15 to 20 minutes, each film dealing with a relatively specific aspect of the energy situation, but an entire series of 10 to 15 films developed to provide a progressing integrated overview of the basic energy situation, problems, and possible rationales for alternative actions.

RATIONALE

Examination of a number of current energy films reveals that many of them are relatively self-contained overviews, often heavily packed with material, and frequently overwhelming in the amount of information they convey. A special effort has been made in planning this series so that its use within existing curricula will relate to, but not significantly duplicate, existing film materials. The primary function of the series is threefold: 1) to dissect the consideration of the total energy situation into a related sequence of topics, permitting step-by-step examination of the factors which collectively contribute to the complexity of the national problem, 2) to permit free and flexible discussion and exploration of each topic as it is developed and related to the previous ones, and 3) to develop a sense of the constant interplay of technology and human factors as it affects our attitudes toward energy development, usage, and conservation.

The series should be designed so that each succeeding film builds upon the previous one, starting with the background of our traditional energy ethic and progressing through specific considerations of energy economics, conversion, options, alternatives, and trade-offs in such a manner that the ideas developed in each film can be applied to the concepts explored in the film which follows. Supplemental materials of various types, including current magazine and news articles, can be used to illustrate and augment the basic concepts developed by the topic films; however, it may be advisable to prepare several additional short didactic films to present relevant cognitive material, e.g., the nature of specific systems such as solar or organic-derived energy sources.

Advocacy of specific points of view should be minimized, the intent of the series being primarily to provide guidelines for the viewer's subsequent collection of information and for discussion of the ramifications of the various topics; discussion guides can suggest related materials. At the conclusion of the use of the full sequence of films, the student (or adult audience) should be able to manipulate more meaningfully the multiple variables of the energy situation in making realistic decisions. The last film in the series will explore the energy situation as it relates to the individuals' state or region, in this case the State of Iowa.

The ninth grade is recommended as a target year for the energy film series for the following reasons:

> The ninth grade year in school is usually the last year where typically all students take the same core of courses. If curriculum planners want to incorporate an idea into the curriculum for exposure to all students, they must do it during the freshman year or earlier. With the exception of some language arts and social studies courses all other senior high courses are on an elective basis.

Wise energy utilization is a multi-faceted problem which requires attention simultaneously to several variables. Piagetian learning theory fixes the age of approximately 12 years before youngsters begin to attend to multiple variables. By ninth grade, ages 14 and 15, most youngsters should be able to attend to multiple variables.

Much of the reported research on attitude development indicates that many attitudes are formed during the pre-school years and that by the time a student reaches postadolescence, attitudes are relatively stable*. The intent is to select a target age where intellectual development is sufficient to handle the nature of energy use decisions, but an age young enough to permit modification of already developed attitudes.

Excellent cognitive print materials are available at the ninth grade year to provide related source materials for the film series. Four exemplary curriculum projects widely used across the nation are: Interaction of Matter and Energy, Rand McNally; Introductory Physical Science, Prentice Hall; Investigating the Earth, Houghton-Mifflin; and Probing The Natural World, Silver Burdett.

Films produced primarily for this target population present a singular advantage. Curriculum materials developed for the ninth grade level are often designed with enough sophistication to permit them to be used at any level above the ninth grade including post high school usage with adults. The level at which discussions are developed can be geared to the type and level of the group involved.

*Kahn, S. B., and Joel Weiss, "The Teaching of Affective Responses", chapter in Travers, Robert M. W., (Ed.) Second Handbook of Research on Teaching, Rand McNally, Chicago 1973

DESCRIPTION

The following individual topic film descriptions are at present only tentative--considerable work is yet to be done to incorporate balance and film-to-film relationships and to define concept development and flow throughout the series. Some of the present film topics may be further separated for clarity, others may be combined as closer examination of the concepts and sequence occurs.

However, even these tentative descriptions should provide a reasonable idea of the style and intent of our present thinking toward a comprehensive energy orientation series:

#1 THERE'S PLENTY WHERE THAT CAME FROM.

This film examines the utilization of energy resources in the United States from an historical point of view, tracing the transitions from extensive to intensive energy sources with the development of technology, the expansion of the variety of needs of an expanding society, and the natural development of the ethic of unlimited resources and energy through the middle of the twentieth century.

(1) What is the traditional American energy ethic?
(2) What is the historical matrix, both technological and social, out of which this ethic developed, and why did (does) this ethic seem completely natural and appropriate?
(3) To what extent is the American energy ethic different from that of, say, European countries? To what extent was the American energy ethic a reaction to that of European countries?
(4) What factors/developments are impingent upon and in conflict with the continuation of this ethic, and alternatively, what factors support the continuance of this ethic?

#2 THE ULTIMATE CURRENCY

This film examines energy use as a non-recycling expenditure of a valuable asset in contrast to the recirculating nature of our common currency; suggests situations where our economic goals and our energy-oriented goals may be in conflict; and compares the fossil fuels and energy mineral deposits to an "energy savings account" which we are in danger of depleting, as compared with the short-turnover extensive energy sources such as wind, water, and photosynthetically-derived fuel sources in common use before the development of our complex technology.

#3 (conservation)

Predicated on the ultimate currency concept, this film emphasizes the concept that the practice of energy conservation follows logically and inevitably from the recognition that most of our traditional energy sources are finite

and diminishing, that a significant amount of our energy is being wasted, and that technology exists to improve the efficiency of energy use and material recovery.

(1) What is energy waste, at what levels does it occur, and how can it be minimized?
(2) What determinator would be used to define necessary vs unnecessary energy consumption?

#4 GETTING IT FROM HERE TO THERE

This film explores aspects of the conversion of energy from one form to another, compares the means by which energy can be "shipped" from its point of origin to point of use, and investigates factors to be considered in making choices for the location of energy production facilities.

What price is paid for energy conversion, both in terms of dollars and in terms of the "ultimate currency"? What tradeoffs exist in energy transport, e.g., the shipping of coal from a remote mine site vs the establishment of a generating facility at the mine and the movement of the energy in the form of electrical power?

#5 THERE IS NO FREE LUNCH

This film explores the concept of "tradeoffs", in that the establishment of energy production facilities exacts costs in terms of environmental disturbances and/or socio-economic adjustments, and that all of these factors must be weighed against one another.

(1) (Continuing with question 2 from film #4,) What other tradeoffs would be involved in determining whether or not a generating plant might be constructed at a mine site rather than at the point of energy use?
(2) Assuming that we were to double the hydroelectric power generating capacity of the western United States, what tradeoffs would be involved?

#6 HOW MUCH IS LEFT?

This film explores the concept of energy reserves and how they are determined on the basis of known technology; it would also examine the need for more effective methods of recovery of these resources.

(1) What is meant by estimated reserves? proven reserves? recoverable reserves?

#7 THE GREAT AMERICAN RESOURCE

This film features the conflict between our throwaway society and the loss of energy and material resources which it represents; examines possible alternatives for (e.g.,) the landfill concept of disposal.

(1) What is recycling? What is its role in conserving energy? maintaining environment?

#8 (energy efficiencies)

This film deals with the adaptability of certain energy sources for various uses, e.g., a comparison of which energy sources may be most suitable for the production of intense heat vs extensive heating, and how the design of facilities can minimize conversion and other losses.

(1) What is the relative efficiency in using a fossil fuel to generate electrical energy which is then converted into heat, as opposed to direct combustion of that fuel to furnish the same amount of heat? What economic and environmental factors would be involved?

#9 BUSINESS AS USUAL

This film explores the effects on our industrial production of the implementation of certain major efforts for energy conservation, using the concept of "the chain reaction" to show the interdependence of the various facets of the American economy.

(1) In the light of the need for energy conservation, are there certain aspects of our life style which will need to change? If so, to what degree can we expect it to change?
(2) What are the economic implications of a marked decrease in energy usage, e.g., a switch to mass transit from private vehicle transportation, or the switch to one-car families?

#10 STRETCHING THE RUBBER BAND

This film explores the relationship between growth rate and energy source development or substitution, and the suitability of various sources for certain types of energy consuming activities.

(1) What effect is our present growth rate (population, industrial, economic) going to have on the use of various types of energy?
(2) To what extent can this growth rate be maintained or even augmented through the application of energy conservation procedures? through the development of alternative sources?
(3) Are there certain energy sources which cannot be efficiently used for some types of industrial processes?

#11 TIME AND TIME AGAIN

This film deals with the present "energy crisis" as only the beginning of a long-range problem, and should precipitate discussions of future energy source developments.

(1) What indicators exist to permit us to evaluate the types and degrees of energy deficiencies we may expect on both a short term (10-15 year) basis and on a long-term (50-150+ year) basis?
(2) What are reasonable time scales for the implementation of alternative energy sources to replace presently diminishing energy resources?

#12 THE BIG CLUTCH

This film deals with the fallacies of only stop-gap energy conservation measures, and explores some possible political/economic effects if consumption continues to outstrip production in the intermediate and long-range time span ahead.

(1) To what degree, if the energy crisis cannot be abated satisfactorily, can political units be expected to intervene in the allocation of energy resources?

#13 (Iowa's situation)

Based on the background provided by the use of the preceding films, this film examines Iowa's energy situation--in-state fossil fuel reserves and extraction feasibilities, dependence upon imported materials, possibilities for further application of present technology or the application of new technology, and environmental and economic factors influencing the balance of energy use.

ORGANIZATION AND PROCEDURES

The activities of the development phase for the Iowa State Energy Orientation Film Series can be summarized in seven basic objectives:

1) to conduct a search and prepare an annotated bibliography (filmography) of current audiovisual materials dealing with energy and energy problems (a preliminary list of titles is attached to this proposal);

2) to determine the general direction and scope of the total film series, with special attention to its incorporation into existing curricula;

3) to determine and specify in detail the cognitive and affective performance objectives for each film;

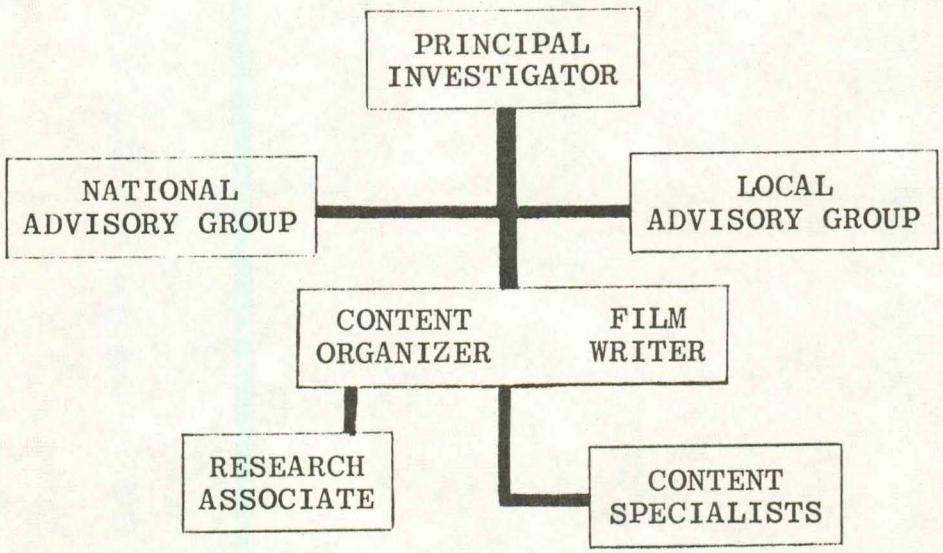
4) to develop individual film treatments which indicate how content elements will be manipulated within each film, consistent with determined objectives;

5) to develop a preliminary list of source and reference materials suitable for use with the individual films;

6) to prepare a shooting script and a plan for ancillary activities in package form for at least one of the proposed titles; and,

7) to prepare a detailed proposal for the production of the film series and related curriculum materials which, upon concurrence of the Advisory Groups, the Iowa State University administration and Department of Public Instruction specialists, will be submitted to an appropriate public or private agency for funding.

The following organization is proposed for the project (development phase):



The PRINCIPAL INVESTIGATOR will act as administrator and coordinator of the development phase of the project, operating under the conditions of the grant and the mandates of the Advisory Groups. He will also serve in the role of film producer in the development of the film treatments, and as ex-officio chairman of the Local Advisory Group. It is proposed that Richard H. Kraemer act as Principal Investigator. His resume of qualifications is attached.

The LOCAL ADVISORY GROUP will consist of seven members, representing the following agencies:

College of Engineering, Iowa State University	Paul Barcus
College of Education, Iowa State University	Lynn Glass
Media Resources Center, Iowa State University	Alvin Kent
Division of Mines and Minerals, Iowa State Department of Soil Conservation	Marvin Ross
Iowa State Department of Public Instruction	Duane Toomsen
Iowa Energy Policy Council	Linda Sherwood
Ames Laboratory of the U.S. Energy Research and Development Administration	Emmett Dreeszen

The individuals noted above have already been collaborating on an informal basis, and this proposal represents a considerable collective effort on their parts. One important input from this group has been initial suggestions for potential members of a National Advisory Group for this project. During the development phase, the primary role of the Local Advisory Group will be to provide guidance to the Principal Investigator, Content Organizer, and Film Writer in the progressive development of suitable materials. It will work closely with the National Advisory Group in the establishment of basic guidelines.

The NATIONAL ADVISORY GROUP will consist of five members whose background will represent expertise in and commitment to the interpretation of the broad technological, environmental, and humanistic relationships of the energy situation. Their primary concern will be to determine the direction, scope, and balance of the entire project, with particular emphasis on the long-term nation-wide energy situation. Following is a preliminary list of possible members, with a brief indication of their areas of interest and expertise.

BENGELSDORF, IRVING

Consultant on science-to-public communication, California Institute of Technology, formerly Science Editor, the Los Angeles Times

principles and philosophy of science and technology for non-scientists

FISHER, JOHN C.

Edison Electric Research Institute; Physical Science and Information Disciplines, General Electric Company

energy and the industrial complex

FREEMAN, S. DAVID

Special Energy and Resources Consultant to the U.S. Senate Commerce Committee; former Director, Energy Policy Project of the Ford Foundation; former Director, Energy Policy Staff of the Office of Science and Technology for the Executive Office of the President of the U.S.

legal and engineering aspects of energy processes

KYL, JOHN

Assistant Secretary for Congressional and Legislative Affairs, Department of Interior; formerly member of the U.S. House of Representatives from the 4th District of Iowa

socio-economic and political factors, logistics

PLATT, JOHN R.

Professor of Physics and Associate Director of the Mental Health Research Institute, University of Michigan

preception, creativity in science, long-range social determinants and instigation of change

SANT, ROGER W.

Assistant Administrator for Conservation and Environment Federal Energy Agency

energy conservation programs

TYLER, RALPH W.

Senior Consultant, Science Research Associates; Vice President, Center for the Study of Democratic Institutions; former Director, Center for Advanced Study in the Behavioral Sciences

curriculum, evaluation

WEINBERG, ALVIN M.

Director Emeritus, Oak Ridge National Laboratory - U.S. Atomic Energy Commission

energy philosophy, science policy

(It should be stressed that this is a preliminary list, and that suggestions for additional potential members of the National Advisory Group will be one of the first orders of business at the initial meeting of the Local Advisory Group. None of the above potential members have been made aware of this project, with the exception of John Kyl, with whom some initial discussions of concepts and the general nature of the film series have been conducted.)

The CONTENT ORGANIZER will categorize and develop content for each film and its related materials as generally outlined by members of the Advisory Groups. These content elements will be used in the development of the film treatments.

The FILM WRITER will deal with the visualization and arrangement of the content elements into a suitable film style which best accomplishes the cognitive and affective objectives defined for each film. The final product will be presented as a written film treatment (and in the case of one title, as a script ready for further production).

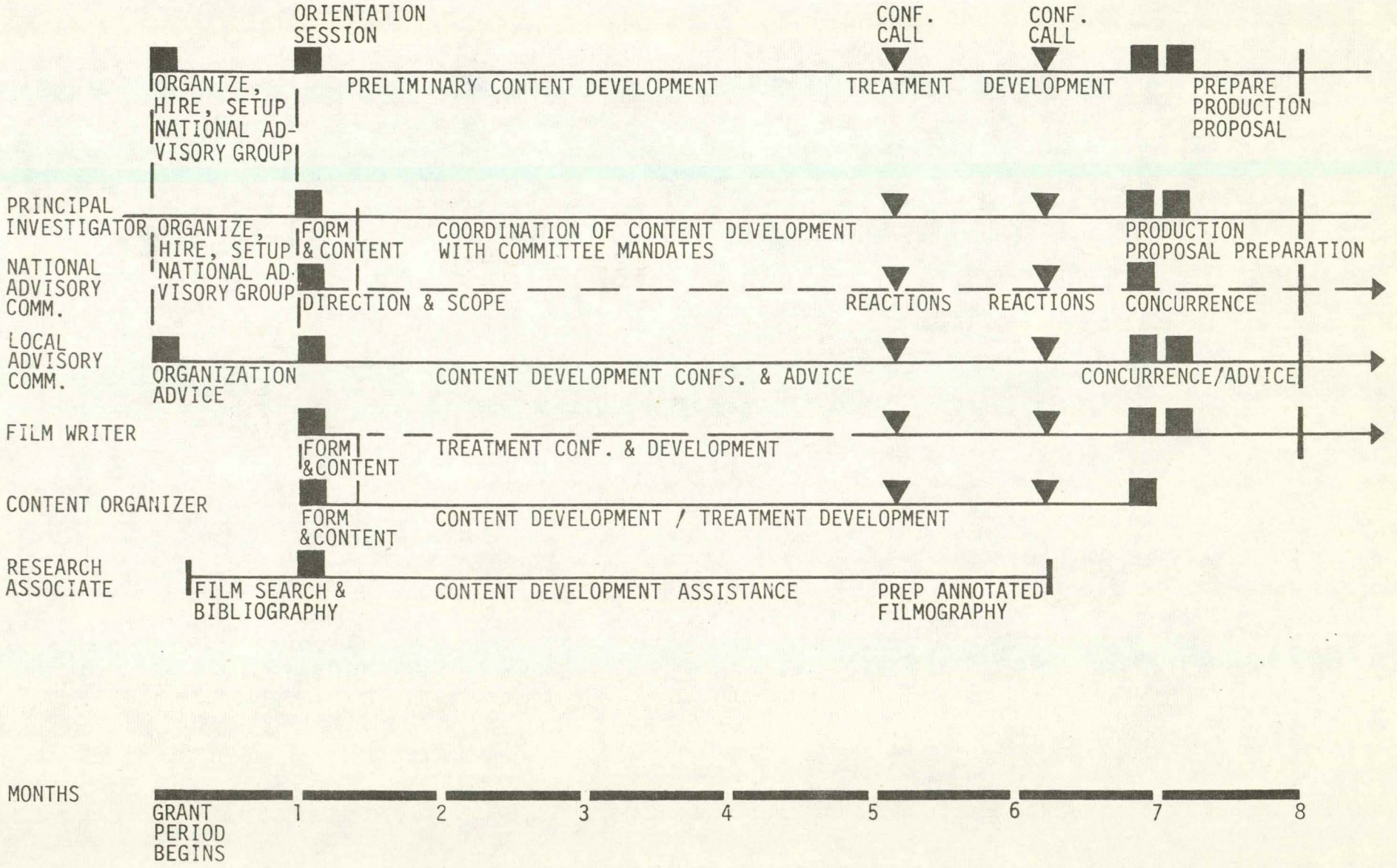
The activities of the Content Organizer and the Film Writer will be very closely related throughout the development phase; however, the initial emphasis on the Content Organizer as a gatherer and arranger of materials will shift as work on a given film topic progresses, with the Film Writer assuming the major responsibility for visualization and sequences of the content elements in the later stages of effort. It is essential, however, that the Content Organizer and the Film Writer be close collaborators during the entire development phase.

The RESEARCH ASSOCIATE will initially conduct a search and prepare a comprehensive list of relevant current films and other audio-visual materials; this "filmography" will be of assistance in defining materials which can be used by teachers along with the series. The major duties of the Research Associate will be to locate and provide data for the Content Organizer.

The CONTENT SPECIALISTS will be individuals of expertise on and off the ISU campus who can furnish guidance on the accuracy and integrity of content, or who can provide insights which can influence the manner in which content material is incorporated into the film treatments.

To indicate the relationships of the various individuals and groups during the development phase of the film series, a Projected Activities Schedule is provided. This schedule indicates major meetings as well as other points of group concurrence, and the types of activities to be carried out by each group or individual throughout the proposed 8-month grant period.

PROJECTED ACTIVITIES SCHEDULE - DEVELOPMENT PHASE



RESOURCES

Although this proposal originates from Iowa State University, a discussion of resources available for the development phase of the film series is considerably broadened by the number of other interested agencies involved (as reflected in the proposed membership of the Local Advisory Group). The record of some past collaborations of the university with several of these agencies in the development of both print and film materials has been a positive one:

- Iowa State University, the Ames Laboratory of the AEC, and the Iowa Department of Public Instruction in the preparation and dissemination of the nationally used IOWA PLAN FOR ATOMIC ENERGY EDUCATION;

- The Film Production Unit of ISU and the Ames Laboratory of the AEC in the production of two films, METALS FRONTIER and THE LENGTHENING SHADOW; current collaboration with the Energy and Mineral Resources Research Institute in the production of a documentary film on the Iowa Coal Project;

- The Film Production Unit of ISU and the Iowa State Department of Mines and Minerals in the production of THE LAST PONY MINE and LIMESTONE: IOWA'S BURIED TREASURE; current collaboration with the Iowa State Department of Soil Conservation on a film concerning soil conservation ethics and practices.

The Iowa Coal Project, funded by the Iowa Legislature and administered by the Energy and Mineral Resources Research Institute on the ISU campus, plus the presence of a major laboratory of the U.S. Atomic Energy Commission (since 1975 the U.S. Energy Research and Development Administration) offers a unique opportunity for interdisciplinary cooperation with experts in various science and engineering disciplines in approaching problems in energy, environment and safety. Activities of these groups include energy research projects in nuclear, solar, and fossil fuel energy sources.

Other campus departments (e.g., Architecture, Agricultural Engineering, Economics [transportation, law], History, Botany [ecology], and Earth Science) are involved with projects related to energy source development and conservation. ISU's College of Engineering has been conducting Citizens' Energy Workshops throughout the state, and University Extension is planning a statewide public affairs education program dealing with Land, Water and Energy in Century III; both of these projects relate well to this proposed series.

Among its many other activities, the Iowa State Department of Public Instruction has, since 1973, developed energy activities for use in school classes, initiated in-service teacher training, participated in energy audit programs, published energy newsletters and resource guides, and supervises the Iowa activities of Project SCATE (Students Concerned About Tomorrow's Environment).

The Mines and Minerals Division of the Iowa State Department of Soil Conservation has provided information and advice concerning fuel reserves, energy source procurement alternatives, as well as insights into legal and economic aspects of energy use.

The input of the representatives of these agencies represents a considerable resource contribution to the proposed project.

FILM PRODUCTION UNIT

The Film Production Unit at Iowa State University is a service unit in which the motion picture production activities of the campus are centered. The staff at present consists of eight employees - seven full-time and one part-time. This is large enough to permit the retention of key individuals who are proficient in the various areas of film production. The film unit occupies all of Alice Norton House, near the north perimeter of the campus. Since Ames has no commercial motion picture studios or laboratories, the unit has tended to become self-sufficient. At present it has equipment of professional quality to handle all processes normal to production except for color processing and special-effects printing.

The unit also has equipment for cinemicrography with bright field, dark field or phase contrast optics, time lapse and high speed cameras which permit the use of frame rates between one frame per hour and 11,000 frames per second. Special systems have been developed for specific projects in 3-D analysis cinematography, infrared and narrow spectral band illumination, and extreme closeup cinematography.

Present major items of equipment include a Mitchell camera with blimp; Arriflex BL camera; three Arriflex S cameras with 400 foot magazines; three zoom lenses; Kodak Reflex camera; three Bell & Howell 70DR cameras; five Kodak Cine Special cameras with four time lapse motor-intervalometer systems; Hycam high speed camera; Colortran dolly; Mole-Richardson and Colortran lighting units, 600 to 5000 watts; three AO microscopes with long working distance, dark field and phase contrast accessories; AO dissecting microscope with camera adaptation; Nagra and Magnacorder 1/4" tape recorders; Stancil-Hoffman and Magnasync 16mm recorder-playback units; four-channel Stancil mixer; Langevin graphic equalizer; Cinema Engineering equalizers and filter; Maurer optical sound camera; animation stand; seven editing stations; Preview model Moviola with registration pegs for preparation of overlay text materials; EDL and Houston processing machines; Bell & Howell Model J printer with Peterson sound head and loop tree; associated sensitometric equipment.

The Film Production Unit has been one of the earlier producers of single concept films for use in specific content areas, beginning in this field in 1963. Since that time, the following single concept series have been released (in addition to the unit's output of regular teaching, research and university relations films):

(1) a 47-title series in Plant Sciences, in lengths ranging from two to 16 minutes, supported by the Naitonal Science Foundation, completed in 1968;

(2) a 22-title series in Animal Physiology, in lengths ranging from two to five minutes, supported by the Iowa State University Alumni Achievement Fund, completed in 1970; and

(3) a 21-title series in Food and Nutrition, in lengths ranging from two to ten and one-half minutes, supported by U. S. Public Health Service, completed in 1972.

Since its establishment in 1949, the Iowa State University Film Production Unit has gained a national reputation, particularly in the fields of agriculture, veterinary medicine, firemanship training, and the sciences. A number of films originally released in English have been renarrated in French, Spanish, German, Italian, Portuguese, and/or Japanese for foreign circulation.

Following is a list of titles of Iowa State films cited within the past fifteen years, and the organizations recognizing them:

American College Public Relations Association

Voices of Iowa State

Council for International Nontheatrical Events (CINE)

Livestock Farmer and the Four Flies
The Nozzleman
The Cattle Feeders
Gamete Transfer in the Bryophytes
...A Book by its Cover
The American Elm--Plan for Survival
The Last Pony Mine

U. S. Department of Agriculture

The Cattle Feeders
Firefighting in Country Elevators
Life Cycle and Rearing Methods of the European Corn Borer

American Association of Agricultural College Editors

Operation Edith
Two Steaks
Consumer-Business Week TV Spot

American Horticultural Congress

The American Elm--Plan for Survival

American Society of Agricultural Engineers

A Housewarming - Electrically
Operation Feedbunk
Soil Insect Control in Corn
The Self-feeding Haymaker
Farm-Mechanization - Electrically

Educational Film Library Association

Insurance From the Farmer's Side of the Fence
Two Steaks
Before Your Mill or Elevator Burns

III Internationaler Agrarfilmwettbewerp (Berlin)

The Cattle Feeders

American Shade Tree Conference

Time for Decision

American Foundation for the Blind

Curt

Screen Producers Guild

...Nor Iron Bars A Cage
Grandpa

American Science Film Association

Plant Science Film Studies
Ultra High Speed Cinematographic Analysis of Muscle Contraction

International Science Film Association

Plant Science Film Studies

U. S. Industrial Film Festival

Principles of Automatic Sausage Linking/
Fully Automatic Sausage Linking/
High Speed Peeling of Cellulose Sausage Casings
The Last Pony Mine
Limestone: Iowa's Buried Treasure.

BUDGET p 1

SALARIES & WAGES

	%	adjusted base salary	from grant	ISU cost share	other agency cost share*
IOWA STATE UNIVERSITY					
Principal Investigator -Kraemer	24.6	$20,868		5,134	
Local Advisory Committee Members					
College of Education -Glass	6.2	23,255		1,442	
College of Engineering -Barcus	6.2	32,832		2,036	
Media Resources Center -Kent	6.2	29,700		1,841	
Content Specialists equivalent time/salary average	4.6	28,175		1,296	
Content Organizer	21.0	12,000	2,520		
Research Associate	20.0	7,500	1,500		
OTHER AGENCIES - Local Advisory Committee					
Ames Laboratory - Energy Research & Development Administration -Dreeszen	15.4	28,604 w/FB			4,405
Iowa State Department of Public Instruction -Toomsen, et al	11.5	26,000 w/FB			2,990
Iowa State Department of Soil Conservation - Mines & Minerals Division -Ross	6.2	18,086 w/FB			1,121
Iowa Energy Policy Council -Sherwood, et al	6.2	18,000 w/FB			1,116
Mileage for DPI, M&M, EPL; 32 trips Des Moines each					1,152
Sub-Total			$ 4,020	11,749	10,784
fringe benefits			563	2,033	na
TOTAL SALARIES AND WAGES			$ 4,583	13,782	10,784

BUDGET p 2

OTHER COSTS

		from grant	ISU cost share	other agency cost share*
National Advisory Council (5 members)				
Honoraria	$200 (x5)	$1,000		
Per diem	3 x $35 (x5)	525		
Travel	2 x 150 (x5)	1,500		
Expendable Supplies		450		
Telephone		600		
Services				
film writing	284 hrs. @ $8.80	2,500		
film clerical	215 hrs. @ $7	1,505		
Travel & Per diem other than committee		1,000		
Sub total		$9,080		
Total Salaries & Wages brought forward from p.1		4,583	13,782	10,784
		$13,663		
Indirect costs (45.18%) of sub-total Salaries & Wages		1,816	5,308	
TOTALS		$15,479	19,080	10,784

*included for information only - Iowa State University cannot verify these figures nor can it furnish documentation on the cost sharing from other agencies.

SUMMARY

This film series will fill an important need for material dealing with both the cognitive and affective aspects of the energy situation. The sequenced, segmented structure of the series will assist the step-by-step understandings of the factors involved in energy use and conservation, and their relationship to and influence upon one another. The intent of the films as catalysts of discussion permits their use at several different levels and also allows the teacher or discussion leader to use other existing films and carefully designed print material in close conjunction with the series.

The choice of primary audience is valid; the development of a new energy ethic in this state and nation will become more imperative with the passage of time, and our best prospects of success will be with the remarkable perceptiveness of our young people. Energy cannot be Iowa's problem alone, for the solution of our energy problems, now and in the future, must be a joint and national effort.

COLLABORATORS

Dr. Paul W. Barcus, Associate Professor of Engineering Science, Assistant to the Dean, College of Engineering, Iowa State University

W. Emmett Dreeszen, Manager, Information and Security, Ames Laboratory of the U. S. Energy Research and Development Administration

Dr. Lynn W. Glass, Associate Professor of Secondary Education, Iowa State University

Alvin Kent, Director, Media Resources Center, Iowa State University

Marvin C. Ross, Director, Mines and Minerals Division, Iowa State Department of Soil Conservation

Linda Sherwood, Director of Energy Conservation, Iowa Energy Policy Council

William H. Smith, Assistant Manager, Information Section, Ames Laboratory of the U. S. Energy Research and Development Administration

Duane Toomsen, Environmental Education Consultant, Director of Project SCATE (Students Concerned About Tomorrow's Environment), Iowa State Department of Public Instruction

IOWA ENERGY POLICY COUNCIL

300 - 4TH STREET - DES MOINES, IOWA 50319 - 515-281-3428

GOVERNOR ROBERT D. RAY

January 13, 1976

Professor Richard H. Kraemer
Manager, Film Production
Iowa State University
Ames, Iowa 50011

Dear Dick:

Meeting December 19, the Energy Policy Council agreed to endorse the concept of the film package you, Emmett Dreeszen and Bill Smith described earlier that month when we met in my office. After hearing descriptions of the project from Marvin Ross of the Mines and Minerals Division and Linda Sherwood of the EPC staff, the Council voted to "...endorse...and provide staff assistance and participation" to the project.

I hope you will view this as an invitation to present a more concrete plan to the Council at one of its meetings in the near future. As the minutes suggest, EPC would be receptive to a proposal for financing the planning phase, provided there is some assurance that production support from some other source would follow.

I will be happy to discuss this project further with you at any time.

Cordially,

Rodson L. Riggs
Director

RLR:bf
cc W.E. Dreeszen
W.F. Smith

STATE OF IOWA • DEPARTMENT OF PUBLIC INSTRUCTION
GRIMES STATE OFFICE BUILDING • DES MOINES, IOWA 50319

Iowa
a place to grow

ROBERT D. BENTON, Ed.D., STATE SUPERINTENDENT
David H. Bechtel, M. S., Administrative Assistant
RICHARD N. SMITH, Ph.D., DEPUTY SUPERINTENDENT

March 11, 1976

Mr. Richard Kraemer, Manager
Film Production Unit
Iowa State University
Ames, Iowa 50011

Dear Mr. Kraemer:

As has been the history of other efforts jointly handled by the Department of Public Instruction and Iowa State University, I can see great accomplishments in another joint effort -- that of providing an educational program for Iowa schools and adult education programs on energy sources and conservation.

We are very aware of this important need. While we have developed curriculum materials, provided inservice education, have made many suggestions for energy conservation to our school people, a coordinated effort -- film production by you with accompanying curriculum materials developed by our staff--can be the best yet.

Personnel of both ISU and the DPI attended the meeting in Kansas City several weeks ago where discussions were held about what was being done across the nation to increase conservation, and to receive the encouragement of the FEA officials to do more. You have been active in your own institution as we have in ours, and I know you participated in our Interstate Energy Conservation Leadership Project. It's time now to put it all together in a manner that will create an attitudinal change in our society -- a conservation ethic that I feel we have a moral obligation to foster.

While the focus of this proposed project would be focused on the environment and the people of Iowa, certainly such a production would be valuable for other states to use also.

The Cabinet of our Department endorses this joint effort. We are excited about what can be accomplished and we hope there are no unnecessary delays in getting to the task of preparation.

Sincerely,

L. N. Jensen
Associate Superintendent-Administration

LNJ:kp

KRAEMER, Richard H.

481-30-4117
social security

Assistant Professor of Speech
Manager, Film Production Unit
Iowa State University

3615 Story, Ames, Iowa 50010

born 22 July 1929
single

EDUCATIONAL BACKGROUND

B.S. in Chemical Technology, Iowa State College, 1951

Approximately 80 quarter credit hours toward M.S. in Audiovisual Education with minor in physical sciences

EXPERIENCE

1951-1953 US Army, Instructor and advisor in chemical, biological, and radiological defense, Headquarters U.S. Army Caribbean, Fort Amador, Canal Zone

1953-1954 Instructor in education ($\frac{1}{2}$time), Iowa State University

1954-1956 Film technician, Film Production Unit, Iowa State University

1956-1961 Writer-director, Film Production Unit, Iowa State University

1961 Assistant Professor of English & Speech, Iowa State University

1961-1969 Assistant Manager, Film Production Unit, Iowa State University

1969- Manager, Film Production Unit, Iowa State University

DUTIES AT ISU

Production Responsibilities--see attachments 1 and 2

Teaching Responsibilities

Developed and taught Vocational Education 305B, AUDIOVISUAL METHODS, 1953-1954

Taught Vocational Education 204, INTRODUCTION TO EDUCATION, 1954

Developed and taught Speech 400C (four quarter sequence now Speech 534 & 535), MOTION PICTURE PRODUCTION, MOTION PICTURE PRACTICUM, 1957 to present

Developed and taught Speech 228 (now Speech 237/238), DEVELOPMENT OF THE MOTION PICTURE, 1966-1969

Developed and taught Speech 334X, SYSTEMS CHARACTARISTICS IN RADIO, TELEVISION, & FILM, 1975

Supervised special problems courses as required, 1961 to present

Supervised the production of approximately 35 student produced films

COMMITTEE ACTIVITIES

Iowa State University

Science Film Advisory Board, 1970 to present
Committee on Copyright Interests, 1972 to present
ad hoc Committee for Historical Scientific Instruments, 1974 to present
ad hoc Planning Committee for the American Archive of the Factual Film, 1974 to present
ad hoc Search Committee for Head of Media Resources Center, 1975

University Film Association

Distribution, 1959-1964
Teaching Film Custodians/Curriculum Liason, 1964-1968

Society of Motion Picture and Television Engineers

ad hoc Committee on Career Guidance, 1971-1975
U.S. Advisory Committee to the International Electrotechnical Commission/60C (Applications of Educational or Training Equipment and Systems)

PUBLICATIONS

"The Tape Recorder Teaches Agriculture" The Nation's Schools, 58:4, October 1956
with Knudsen, O.S., "The Inquiry Approach to Science Film Production", University Film Association Journal, 18:2, 1966
with Schwieder, Dorothy, "Iowa's Coal Mining Heritage", State Mining Board, State of Iowa, 1973

NATIONAL PRESENTATIONS

"How professional should we try to be with institutional motion pictures?", American College Public Relations Association, July 1961
"Film Production Pedagogy", Speech Association of America, December 1966
with Wickliff, James, "Single Concept Films for Teaching Botany", American Association for the Advancement of Science, January 1967; American Science Film Association, April 1968; American Institute of Biological Sciences, August 1968

with Knudsen, O.S., "Film in the Living Historical Farm Program", Association for Living History Farms and Agricultural Museums, May 1973
"Spelean History--The Last Pony Mine", National Speleological Society, August 1974

FILM PRODUCTIONS

(Titles listed represent only those films in which a major creative responsibility was exercised, in contrast to those wherein only specific and relatively isolated activities were involved, e.g., those of producer, camera work only, sound work only, etc.)

DEMOCRACY'S COLLEGE, 1958 writer/director/editor
CENTENNIAL HOMECOMING, 1958, director/sound/editor
VEISHEA, 1959 writer/director/editor/sound
VOICES OF IOWA STATE, 1960 writer/director/editor/sound/ ½ camera
EXCERPTS '59, 1960 writer/director/sound
METALS FRONTIER, 1961 writer/director/editor/sound
CERAMICS IN SPACE, 1964(?) writer/director/editor/sound
PLANT SCIENCE FILM SERIES (47 titles), 1964-1969, writer/director/½ editor
...A BOOK BY ITS COVER, 1969 writer/director/editor/sound
GRAIN HARVEST FESTIVAL, 1971(?) director/editor/sound
THE LAST PONY MINE, 1973 producer/sound
THE LENGTHENING SHADOW, 1974 writer/director/editor/sound
DAY OF THE DARK SUN, 1975 writer/director/camera/sound/ editor

Numerous short films or film segments representing the design and application of special types of filming to specific research situations

OTHER PRODUCTION ACTIVITIES

The production of numerous stereophonic recordings for broadcast in association with WOI radio, 1956-1963
Two programs on early film history in conjunction with WOI-TV as part of their "Frontiers" series, using examples from my personal film library holdings
Several disk recordings prepared for the Iowa State University bands and choral groups, 1958-1963
Disk recording, monaural, CARILLON CONCERT, commercially released, 1963
Several television appearances in conjunction with film presentations of student and staff productions
Presentations on documentary film to audiences throughout Iowa as part of the Iowa Arts Council program series "Motion Pictures as an Art Form", 1967-1970 see attachment 3
Consultation on acoustics and sound techniques for staff in music and at the Iowa State Center

ORGANIZATIONS

Alpha Chi Sigma, professional chemistry, 1948
Phi Delta Kappa, professional education, 1954
Gamma Sigma Delta, honorary agriculture, 1954

University Film (Producers) Association, 1954
Society of Motion Picture and Television Engineers, 1955
American Science Film Association, 1962

HONORS

Awards to student film productions from Speech 400C (now Speech 535), and Speech 490E

...NOR IRON BARS A CAGE, bronze medallion of the Screen Producers Guild, 1960 (400C)

GRANDPA, silver medallion of the Screen Producers Guild, 1962 (400C)

CURT, in the 10 best, Photographic Society of America, 1964 (400C)
award of the American Federation of the Blind, 1964 (400C)

CHAMPION, silver award of the New York Film and Television Festival, 1972 (490E)

Awards to Film Production Unit for which significant personal responsibility can be claimed

VOICES OF IOWA STATE, Best in Nation award of the American College Public Relations Association, 1960

A BOOK BY ITS COVER, Golden Eagle award of the Council on International Nontheatrical Events, 1969

PLANT SCIENCE FILM SERIES, Diploma of Honor of the International Science Film Association, 1969

THE LAST PONY MINE, Golden Eagle award of the Council on International Nontheatrical Events, 1973
-, Gold Camera award of the U.S. Industrial Film Festival, 1973

PRELIMINARY LIST OF CURRENT ENERGY FILMS.

"A Question of Balance" color 28 min

Challenges of the electric industry, meeting energy needs of the future.

"Aluminum-An Investment in Energy" 1973 color 14 min.

Shows how the use of aluminum, although energy is intensive in its manufacture, can help save energy in the long run through its special physical properties.

"An American Asset" color 28 1/2 m.

Documentation of vital roles of coal in our economy.

"Changing Energy Resources" ? color 18 min.

Discusses the development of energy resources in Japan and related problems. From the Land and Industry of Japan Series.

"Choices" color 27 min.

Our options in balancing growth with environmental responsibility.

"Conserving Energy Through Telecommunications" 1974 color 6 min.

Shows various forms of telecommunications and explains how they can be used to conserve energy.

"Douglas Point Nuclear Power Station, Design and Construction" 1969 color 35 min.

Shows the technical background of the development of a Canadian nuclear power station, using animation to explain the station's working parts and the basic Canadian system of heavywater plants.

"Energetics of Life" ? color 23 min.

Shows where the energy inside us comes from. Begins with concepts in energy transfer like free energy and entropy to show why some molecules have potential energy, particularly the ATP molecule. Shows how energy transfer starts with energy from the sun, which is converted with the help of ATP into potential energy in molecules like glucose.

"Energy" 1970 color 12 min.

A visual demonstration of power systems and the transformations of energy. Highlights the power systems of the past, present and future.

"Energy - A Conversation" 1972 color 27 min.

Presents a conversation on the nature of energy between Dr. Linus Pauling, Dr. George Wald and Dr. Philip Morrison. Discusses the definition of energy, different forms of energy and sources of energy.

"Energy Challenge, The " 1973 color 26 min.

Discusses the causes and effects of the energy shortage, problems and opportunities and various plans and proposals.

"Energy Crisis, The " 1973 color 52 min.

Details basic facts about nuclear power generation, telling what it is, how it works, and how it can help to close America's energy gap. Sheds light on the controversy among experts about the safety of nuclear plants.

"Energy: Critical Choices Ahead (two versions) 1975 color 27 min.
18 min.

Analyzes the nature and the order of magnitude of our energy problem. Analyzes how energy is used in the United States, citing the problems involved in extending the same use patterns into the future. Both films give a clear description of the dimensions of the energy problem we face in America today.

"Energy - Less is More" 1973 color 20 min.

Investigates the need for slowing the growth of energy consumption and shows ways in which this can be done.

"Energy - New Sources" 1974 color 20 min.

Examines the potential and limits of new technologies, including solar, fusion and geothermal. Presents an argument for developing a variety of options. Stresses societies' need to develop ways of using less energy.

Energy Sources - A New Beginning
A series of 9 films (U. Colorado) 1975 C 28 1/2 min. each

Energy Sources - A Matter of Policy
Geothermal Power - The Great Furnace
Solar Power - The Giver of Life
The Sleeping Giant - Coal
Wind Power - The Great Revival
Oil Shale - The Rock That Burns
Nuclear Energy - The Great Controversy
Nuclear Gas Stimulation - Tapping Our National Heritage
Tar Sands - Future Fuel

Energy - The Dilemma 1974 color 20 min.

Discusses past, present and future energy growth patterns. Explores problems of supply and demand, depletion of fossil fuels, our dependency and economic and social problems. Stresses societies' need to develop ways of using less energy.

"Energy - The Nuclear Alternative" 1974 color 20 min.

Explores fission power, how it works and the controversies over safety and radioactive waste. Stresses societies' need to develop ways of using less energy.

"Energy - Towards the Age of Abundance" 1971 color 22 min.

Explains that one-fifth of the world's population, in Japan, Europe and North America, consumed over 60 per cent of all the power on earth, 10 times as much per capita as the other four-fifths. Predicts that in the next 10 years North America will consume more energy than it has in all its history. Suggest as possible energy sources the nuclear fission plant, nuclear hi-jacking, eventual harnessing of the fusion reaction and the use of tidal power and solar energy.

"Energy Crisis Series - Future Fuels ? color 17 min.

Contrasts the need for new available energy sources with the fact that nobody seems to be looking very hard.

"Energy Game" 1972 color 52 min.

Shows scientists discussing the energy shortage in the United States, and the role atomic power plants have played in the problem.

"Energy in Life" ? color 20 min.

Concentrates on the basic physical laws of energy conversion from one species to another. Contrasts less industrialized nations with more industrialized nations and shows how they face the food-fuel crisis. Questions what the atomic age's conversion of energy will bring.

"Energy vs Ecology - The Great Debate" 1973 color 28 min.

Describes the role that coal plays in meeting the ever-increasing demands for electrical energy in the United States.

"Evidence of Progress 1975 color 28 1/2 min.

Encourages with respect to environmental problems, shows how these can be solved.

"Modern Engines and Energy Conversaion" 1969 color 11 min.

Explains the difference between potential and mechanical energy. Shows energy conversion in combustion, jet, rocket and nuclear powered engines.

"Natural Gas: Supply and Demand 1975 color 28 mins.

Where we must seek our future supply, the problems involved, why shortages, history of development and use.

"Natural Gas and You" ? color 16 min.

Presents the role of natural gas in modern living, showing some of the reasons why the industry has grown to where it supplies nearly one-third of the nation's energy requirements. Portrays some of the operations involved in producing, transporting and delivering natural gas instantly on demand to millions of customers.

"Power From the Atom" ? color 11 min.

Uses animation to show how power is obtained from the atom. Illustrates atomic fission, fusion and radioisotopes. Shows how a reactor converts atomic energy into electrical energy.

"Putting the Sun to Work" 1974 color 5 min.

Discusses current research on the development of ways to produce electrical energy from the sun.

"Refinery" 1975 color 14 min.

Explains the process, inaccessible to the eye of turning crude oil into fuels; uses animation to show interior systems.

"Talk Was of Energy" 1971 color 29 min.

Demonstrates the need to acquire energy from natural sources but at the same time preserve the environment.

"There's Always A Question" 1974 color 8 min.

Tells a story about two unseen beings who observe the function of the Earth, the development of life forms there, and man's evolution to the present-day energy crisis. Designed to raise questions about alternative energy sources.

"To Bottle the Sun" 1973 color 6 min.

Explores the possiblity of fusion power reactors as an alternative way of satifsying our future expanding energy needs with coal, gas and oil in limited supply.

"To Imitate the Sun" 1971 color 33 min.

Covers controlled thermonuclear research over two decades. Includes the philosophy of two-X-two, scyllac, astron, stellerators and tokamaks.

"Twenty-Three/Twenty-Eight" 1975 color 46 mins.

To increase pride and productivity, a young factory worker points out the importance of our material and energy resources.

"When The Circuit Breaks ? color 29 min.

America's need to develop resources of coal, oil, and natural gas.

"Why Lignite" 1975 color 19 1/2 min

Shows the process of mining lignite in Texas; designed to promote it as a power source.

"World of Energy" 1974 color 29 min.

Reviews man's use of energy from primitive times to the present. Discusses the future of energy and the challenges it presents in meeting the economic and environmental requirements of the future.