

14th ERDA AIR CLEANING CONFERENCE

SESSION I

WELCOME AND OBJECTIVES OF THE CONFERENCE

Monday, August 2, 1976
CHAIRMAN: M. W. First

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WELCOME

Melvin W. First
Harvard Air Cleaning Laboratory
Harvard School of Public Health
Boston, Massachusetts

I am Melvin First, Conference Chairman, and it is my privilege and my pleasure to open the 14th ERDA Air Cleaning Conference. On behalf of the Harvard Air Cleaning Laboratory, co-sponsors of this Conference with the United States Energy Research and Development Administration, I bid you welcome. I would like to extend a special welcome to our speakers and delegates who came from countries outside the U.S. These countries include, Canada, Germany, Belgium, France, England, Sweden, Switzerland, Denmark, Holland, Japan and Spain. Although this is a U.S. Government sponsored meeting, those of you from other countries who have attended previously know that you are considered full participants as well as guests.

It has been two years since we last met and many important things have happened during this interval. You will hear about most of the technical matters of importance that have occurred over the past two years during the three days of this Conference. Therefore, I would like to speak very briefly about a non-technical matter that troubles me greatly and that I am sure troubles you, also. It is the negative attitude of the public regarding the safety of nuclear power. The fact that the California nuclear initiative (Proposition 15) was voted down by a better than 2 to 1 majority should not make us complaisant. The mere presence of a nuclear initiative on the California ballot indicates the public's deep interest and concern in this energy area. It seems to me that the nuclear industry and its advocates must respond, and respond vigorously. Not only with multimillion dollar government-sponsored safety studies, important as they are, but by every involved individual exercising the same diligence and unflagging enthusiasm and self sacrifice that the "antis" exhibit in their eagerness to speak to and find converts among every available lay group.

How many of us make a practice of appearing before all the community groups that will listen; in order to bring the message of nuclear power's safety record and its potential for universal human benefit? I don't intend to take a poll among us, but, if I did, I think I would find a pitifully small number who take this obligation to heart and then act upon it. As a consequence, I fear we are leaving the education of the public to the antinuclear zealots who devote their total resources to reaching citizen groups and persuading them to join their cause. Those of you who have attended public hearings on nuclear power and nuclear waste disposal, have heard these sincere, well-meaning individuals express their fears and utter the antinuclear party line.

Until recently, violent opposition to nuclear power was largely a U.S. phenomenon but the rest of the world is catching up rapidly. We note the rapid growth of a vigorous antinuclear group in France

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during the past year or so and growing hostility elsewhere.

As genuine experts on many important phases of nuclear safety, this group has, I believe, a heavy obligation to become involved, personally and passionately, in the education of the public on matters of nuclear safety at every possible opportunity. I suggest such groups as science classes at schools, scout groups, service clubs, church groups, etc.

I do not believe we can leave delivery of this important message solely up to the Federal Government. Rather, we must all pitch in and express our convictions by constructive activities that reach the public. If this makes sense to you, please act on it, and carry the message to your colleagues who are not here.

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WELCOME

W. H. Hannum
Idaho Operations
U.S. Energy Research and Development Administration
Idaho Falls, Idaho

Your program states that Wayne Bills would welcome you on behalf of the Idaho Operations Office. We couldn't quite leave you with "Bills and Biles" as the welcome team, so I came instead.

It is a pleasure to welcome you here, not only personally, but on behalf of the Idaho Operations Office and our contractor operations at the Idaho National Engineering Laboratory (INEL). We have approximately 6,500 people employed here in Idaho working for ERDA and its prime contractors. It's appropriate that this air cleaning conference be held here for a variety of reasons. First, of course, here in Idaho, we do believe in clean air and we're happy to see people working to preserve clean air, not only for Idaho, but for the entire country and the world.

As far as the nuclear aspect of air cleaning is concerned, at the Idaho National Engineering Laboratory, we do have almost the full range of the nuclear fuel cycle. We operate reactors and we have to worry about the effluents from them. We have a major chemical processing operation and we have to worry about the effluent from that. We have waste storage and we have to worry about any effluent there might be from that. Except for the fuel supply and the enrichment process, we are involved in the entire fuel cycle.

Also, at INEL, Allied Chemical Corporation, one of our major contractors, has just recently completed their assignment as task leader for the Volatile Radioisotope Recovery and Off-Gas Treatment section of the alternatives for Managing Wastes from Reactors and Postfission Operations in the LWR Fuel Cycle. That's the so-called Technical Alternatives Documented for Commercial Wastes.

Allied will continue to be involved in this and has been assigned as a Task leader for the off-gas section of the Generic Environmental Statement for Managing Radioactive Wastes from Commercial Reactors and Postfission Operations in the LWR Fuel Cycle.

One other item I ought to note, lest there be unnecessary confusion: the last time this particular conference was held in Idaho (in 1959) it was sponsored by the Atomic Energy Commission. The current conference is sponsored by ERDA. These are not quite the same things. Many of you at that time visited the National Reactor Testing Station. Many of you this time will visit the Idaho National Engineering Laboratory; the same geography but not quite the same operation.

This meeting comes in reasonable proximity to a meeting in Denver: the International Symposium on Waste Management. This meeting is immediately followed by the ANS-AIChE meeting on air cleaning. I trust there will be adequate overlap among these meetings. There

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are special sessions devoted to trying to exchange information from the various symposiums.

I suspect after five days on air cleaning, many of you may feel sort of like the 12 year old who read a 500-page book on frogs. His entire book report read, "I now really know more about frogs than I ever wanted to know."

Let me make one other comment here as we begin. This is the 14th Air Cleaning Conference. To be honest with you, I worry when I seen the 14th meeting on a particular specialty topic. I trust this is not simply a continuing club; people getting together to exchange friendships. That's beneficial, but I hope also we're making some progress. As I review, following the meeting, the results of this conference, I will be looking for results. I'll be looking for conclusions. I'll be looking for things that we may have accomplished in the past 14 meetings. I hope to be able to find some.

Another comment I'd like to make: previous conferences in this series have been sponsored by the American Nuclear Society. Air cleaning is a very serious matter in the nuclear fuel cycle. For one particular reactor type, I made an estimate a few years ago that, in our analysis of the potential environmental impact of the one particular reactor type, we were choosing to not take credit for a safety margin factor of somewhere between 10^6 and 10^{22} . As we all know, there is considerable public concern over nuclear power. If we're failing to take credit for factors between 10^6 and 10^{22} , maybe we'd better start looking for them so that in our representations to the public, we can show that not only are reactors safe by current conservative evaluations, but when looked at rationally, this really is a good way to supply the energy needs of our country.

I hope this conference also marks a turning point, in the sense that ERDA is not the same as the AEC. ERDA is involved with the full range of energy development. We must be concerned in any form of energy generation, that what we develop is satisfactory from an environmental point of view.

I hope this meeting does reflect, at least to some extent, that we are worried not only about the nuclear aspect of air cleaning, but air cleaning in its broader context of energy supply.

Again, our welcome. We're happy to have you here. I'm sure you will enjoy Sun Valley and I hope you learn something. I hope we all learn something from this conference. Thank you.

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ERDA WELCOME

Dr. Martin B. Biles, Director
Division of Safety, Standards, and Compliance
U.S. Energy Research and Development Administration

On behalf of the U.S. Energy Research and Development Administration, it is my pleasure to welcome you at this 14th Air Cleaning Conference. In extending this welcome, I would like to make special note of the many foreign guests present and wish them a particularly warm personal welcome. It is gratifying to see this large turnout, which exemplifies the importance of your activities.

These air cleaning conferences began at Harvard University in June 1951 under the auspices of the AEC. Since the last air cleaning conference in August 1974 in San Francisco, the AEC has been abolished and two new agencies were established--the Nuclear Regulatory Commission and the Energy Research and Development Administration. ERDA was formed to bring together and to direct Federal activities in the research and development of all energy sources, non-nuclear as well as nuclear. This is, therefore, the first air cleaning conference sponsored by ERDA.

Since their inception, these air cleaning conferences have served as a forum for exchange of new developments in air cleaning, with the published proceedings representing the most up-to-date literature available on the subject. The accomplishments in air cleaning during this period are far too numerous to mention, but are well reflected in the proceedings. The unique characteristic of the air cleaning conferences was to address the reported research considered most essential to nuclear facilities and their related support activities. Certainly, there are still problems remaining in nuclear air cleaning, but I think we should now begin to consider the needs of the non-nuclear energy technologies in view of the broad responsibilities of ERDA.

In the non-nuclear area the problem of air cleaning of present coal and oil fired plants is with us now, particularly with regard to scrubbers. I am not sure that we even know the magnitude of the air cleaning problems facing us with sources such as coal gasification and oil shale development. How to handle the carcinogenic compounds in the coal gasification products is an interesting challenge. Also, some of the geothermal fields produce sulphurous gases that require control. These problems will test our engineering ingenuity and research technology. The engineering knowledge developed under nuclear air cleaning may be relevant and applicable to the air cleaning needs of the non-nuclear field. I invite Dr. First and you to include air cleaning related to non-nuclear activities in future air cleaning conferences.

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In the nuclear area, the success of the commercialization of the LMFBR will depend heavily on the performance and reliability of the air cleaning systems in the demonstration CRFBR now under design, as well as the success of ongoing laboratory research. The capture and the storage of noble gases, particularly krypton 85, when necessary will be a challenge. In the long term, as fusion is developed, the containment and control of tritium will be challenging.

As in the past, the basic objective of this conference is the exchange of information. What is to be discussed here are the accomplishments and developments since our last air cleaning conference. The program is full and interesting. The meeting should be a certain success.

In closing, I would like to express our appreciation for the efforts of Dr. First and those who have helped him to organize this meeting, including the program committee and the Idaho Operations Office. Thank you.