INFORMING THE PUBLIC ABOUT NUCLEAR ENERGY

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Abstract

When the Karlsruhe Nuclear Research Center was founded in 1956, it soon became apparent that the population of the neighboring communities had to be informed about nuclear energy in an unbiased, objective way. Those discussions centered chiefly around arguments of radiation protection. The experience gained from our public relations activities in those years was used and continued by the Nuclear Engineering School of the Karlsruhe Nuclear Research Center, e.g., in special courses run for the information and education of teachers and journalists who passed this information on as opinion leaders. In a similar way it was possible to discuss the objections against siting of the first nuclear power stations in Germany with the population in the environment of those sites.

It was not until the controversy imported from the United States, which can be described simply by the names of Gofman, Tamplin and Sternglass, that organized groups of the population turned up who were against the use of nuclear power. This at the same time made the arguments more emotional, expanding them into problems of energy policy and sociological questions under the headings of "environmental protection". This different situation must be taken into account in public relations activities.

Our experience from numerous and varied discussions with action groups against nuclear power has clearly shown that big rallies and use of the mass media can result only in general information and education of the public. More complex subjects with discussions pro and con, which arise when it comes to the establishment of a nuclear plant, need early and specific approaches to homogeneous groups. These contacts should always be supported by arguments of fact and should cover only a limited subject.

Introduction

The resumption of nuclear research in the Federal Republic of Germany after the conclusion of the Paris Treaties of 1955 suffered from the severe burden of atomic energy: the bombs of Hiroshima and Nagasaki. This primarily created a sceptic attitude relative to the establishment of research facilities for the peaceful utilization of nuclear energy.

"Paleozoic" - 1955 - 1960

For the same reason the establishment of the Karlsruhe Nuclear Research Center in 1956 highlighted the necessity of factual information and education about nuclear energy of the population in the communities in the vicinity. The possibility of visiting the plants under construction, experimental lectures about health physics and nuclear technology in schools and institutions for adult education created the first contacts. Study tours of foreign nuclear research facilities, for instance Saclay near Paris in France and Mol near Brussels Belgium, were organized for special groups. This habit introduced in the early years of the Karlsruhe Nuclear Research Center of making the facilities of the Center accessible to all the interested parties at any time was retained in the years to come. At present approximately 15 000 visitors, in groups and individually visit the Karlsruhe Nuclear Research Center; they can get all the information they want, and the staff of the Center are available for discussions with them.

When the Karlsruhe Nuclear Research Center was founded, most of the questions asked by the population referred to radiation protection and radiation exposure of the environment. Most of these questions indicated a genuine concern. In a few cases, however, questions with respect to radiation protection and safety were just a pretence covering up for economic interests. These opponents were afraid that the establishment of a Research Center could cause the workers employed in their small local industries to change to jobs in the Research Center which would offer better pay.

At the earlier meetings informing about nuclear energy homogeneous groups, such as teachers, members of municipal councils, members of agricultural associations, etc. were preferably approached.

"Mesozoic" - 1960 - 1968

In the early sixties the establishment and the expansion of a Nuclear Engineering School at the Karlsruhe Nuclear Research Center made it possible to pass on information about nuclear research and the peaceful uses of nuclear energy to the public through courses and information meetings. Experience gathered in the early years was thus made use of and expanded.

Besides purely technical courses in radiochemistry or reactor technology, radiobiology and health physics, special courses were organized for specialized teachers in secondary schools from all over the Federal Republic of Germany. In this way it was possible to use teachers as "opinion multipliers" and make use of their educational possibilities and capabilities in order to pass on factual information to the younger generation to be trained in an understandable way.

In those years more and more reports were found in the press which unintentionally gave wrong information. In most cases this indicated an insufficient amount of technical knowledge with many journalists. Consequently, journalists were invited to attend brief courses at the Nuclear Engineering School where experts talked about specific selfcontained subjects, such as "biological and medical problems in the utilization of nuclear power", "reactors of the future", "reprocessing of fuels", or "nuclear safeguard methods".

Both groups, teachers and journalists, greatly helped in the publicity of nuclear knowledge through their capacity as "opinion leaders". In this way problems of radiation protection and safety were discussed, thus preparing a critical public.

These same years saw the construction of the demonstration nuclear power stations of Obrigheim and Gundremmingen in Germany, which gave rise to a thorough discussion with the population in the areas of these plants about problems of site selection. Proper Commissioning then proceeded without any major interruptions.

"Neozoic" - 1969 - ....

Since 1969 greatly exaggerated reports have also appeared in

the press of the Federal Republic of Germany questioning the arguments of nuclear safety of nuclear power stations and thus creating unrest even among the experts. This controversy, which was imported from the USA and can be outlined by mentioning the names of Gofman, Tamplin and Sternglass, resulted in the organized association of a few groups of the population opposing the application of nuclear power. Although this nuclear controversy and its extension from the USA to Europe, especially to the Federal Republic of Germany, had been recognized by a few experts, the scope and the possible effects had not been correctly assessed and the rate at which this phenomenon spread had been underestimated by industry.

Two factors, most of all, influenced the generation and the extent of the controversy: A generally improving environmental consciousness among broad groups of the population coupled with a certain hostility towards technology or a reduction of faith in technology.

It was necessary to take account of the representation of the problems in a popular book written by a number of experts in which anybody could be able to find factual information on the subject. For this purpose, Deutsche Verlagsanstalt of Stuttgart in early 1970 published a book entitled "Kernenergie - Nutzen und Risiko" [1]. However, it was evident from the outset that a nonfiction book would not be sufficient. Sensational reporting had to be attacked by other means. For this purpose, almost simultaneously a "collection of arguments and counterarguments" [2] was published by the Swiss Association for Atomic Energy and a volume entitled "Kernfragen" [3] by the German Atomic Forum.

Switzerland was early to recognize the direction in which the conflict threatened to move, as a consequence of the reaction of certain groups of the public to the reactor incident at Lucens (January 1969).

At an information and discussion meeting organized in Bern in the fall of 1970 by the Swiss Association for Atomic Energy the situation was indicated. Many German observers experienced their first encounter at this meeting with groups discussing only on an emotional basis. Indeed, dealing with reactor safety and radiation protection at a public forum in this way was a successful venture

with the Swiss population which seemed to be used to democratic discussions. Afterwards, the technical questions discussed were published in a generally understandable form and made available to the interested general public.

Development of Arguments

The development of arguments in discussion meetings during those years can be classified as follows:

- During an initial phase there was a generally factual, objective discussion with the interested public which mostly had a limited background knowledge.

- As a second phase organized groups expanded the arguments to other areas (emergency cooling, frequency of cancer, etc.). The discussions became more difficult. Talks with the "atomic opponents" require experts in the respective fields, such as reactor technology or medicine. This phase is the era of sensational stories, examplified by the name of Mary H. Weik. However, scientific and technical articles are able to convert most of the sceptics from their former negative opinions about the peaceful uses of atomic energy.

- The third phase is determined essentially by the general efforts towards environmental protection. This made the arguments more emotional, extending them under the heading of "environmental protection". Their often hysteric expression leads away from problems of reactor technology and radiation protection or safety to global problems of the future such as "thermal pollution," landscaping and aesthetics, problems of energy policy and sociology. Especially the latter points are supported by political groups operating with the keywords of "changes of the system" against the profit maximization of utilities." This confronts potential reactor operators with a very complex set of questions in this third phase. One example of the emotional, distorted description presented by an action group against nuclear power stations is shown in Fig. 1. Such action-associations do not want any factually correct information, such as Fig. 2, a photomounting of the cooling tower for the nuclear power station at Gösgen, Switzerland.

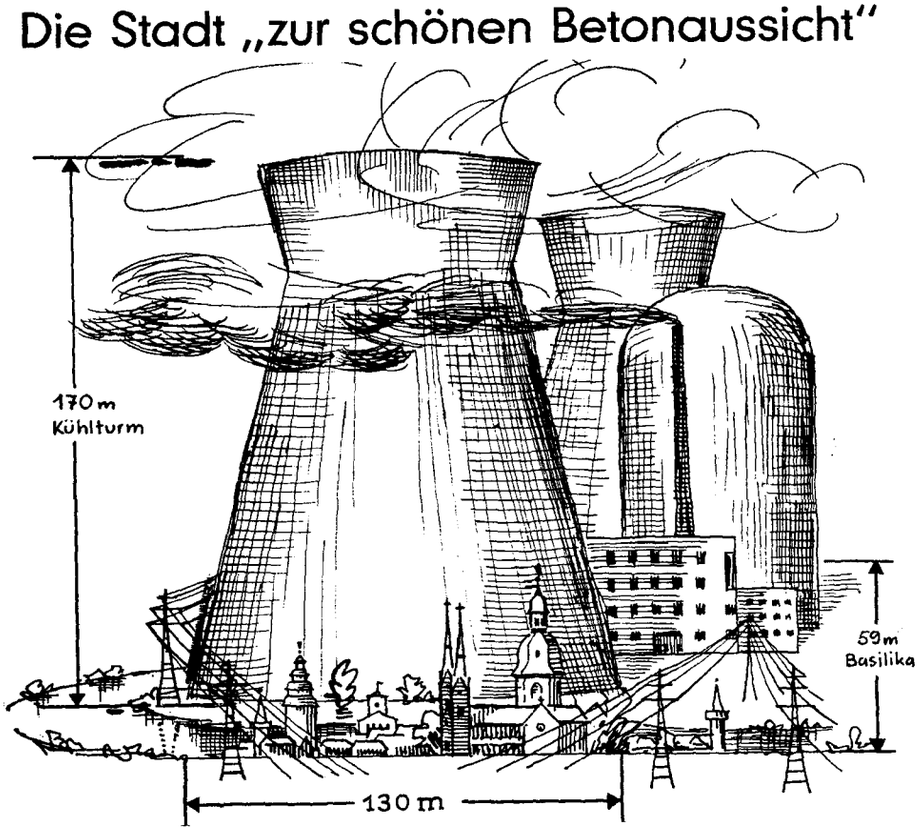

Fig. 1: Cooling towers, sketch of an action against nuclear power stations

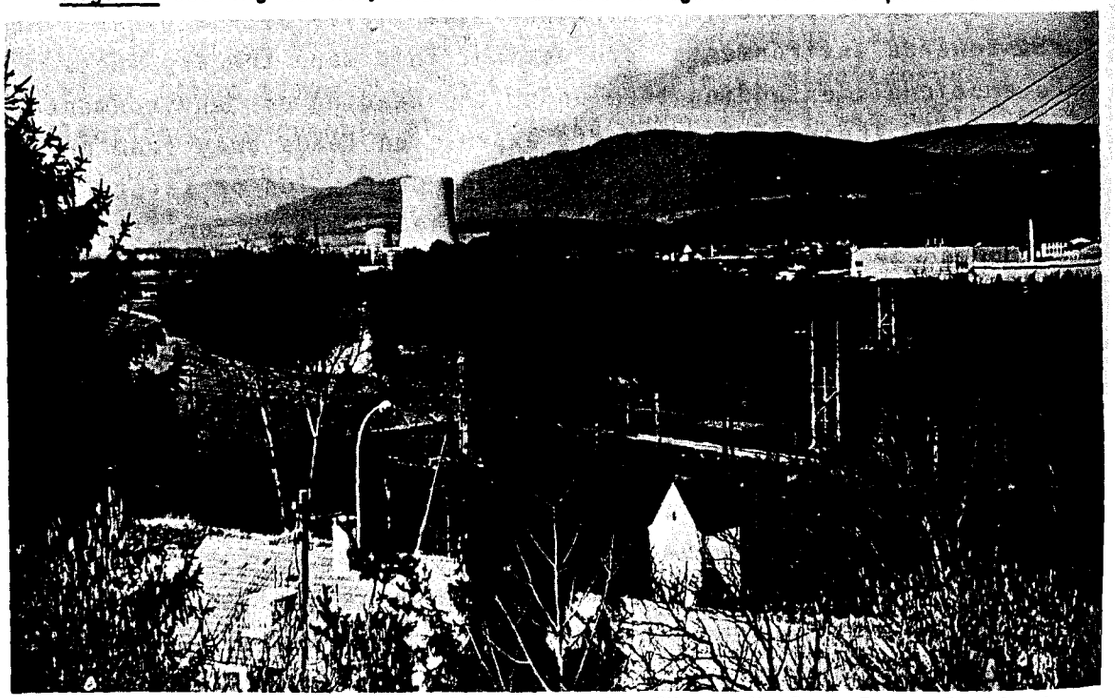

Fig. 2: Photomounting of the cooling tower for Gösgen Nuclear Power Station/ Switzerland (Courtesy Motor Columbus, Baden/Switzerland)

The success of a specific approach of the public can be well studied by the example of the nuclear power station of Neckarwestheim Germany, now under construction.

A large number of hearings were arranged within a very short period at which all the subjects could be finalized in a discussion. The villages in the community, general practitioners, journalists, etc. were invited for discussions.

Even observers not directly linked with the proposed plant, such as clerical organizations, used the opportunity and asked for a discussion between leading members of the project and opponents.

The positive outcome of this informative action in the case of the Neckarwestheim Nuclear Power Station is partly due to a native characteristic of the population of the area: they are realistic and sober people. The problems were really finalized in a discussion, and die-hard opponents were not convinced of the contrary, but the credibility of their arguments was greatly shaken in the eyes of the majority.

The situation is quite different in another siting discussion at Breisach on Kaiserstuhl, a well known winegrowing area near the Southern Black Forest.

Contrary to Neckarwestheim, which mostly covered the symptoms listed under phases 1 and 2 above, the Breisach discussion clearly highlighted the arguments of phase 3. Less specific problems of nuclear power plants were discussed rather than general problems of environmental protection: Cooling processes with wet or dry cooling towers, meteorological effects on winegrowing at a distance of a few kilometers, protection of the landscape, and in particular, the necessity of this nuclear power plant from the point of view of energy policy.

As far as the method used by the nuclear opponents is concerned, it can be said:

Local groupings like to cluster around locally well known personalities, such as the doctor, representatives of the community, chairmen of some associations, etc. who have previously shown their interest in public affairs.

The press of the organized opponent groups is well versed in the art of lending credibility to their arguments by quoting from well known experts. Objections raised in the way of stories even sometimes catch well versed experts by surprise.

Observations have shown that our opponents like to quote foreign technical literature. In Germany American literature is quoted, whilst in the United States, as far as we know, it also applies vice versa. Linguistic incompetency and the inability to follow the quotation often kill any answers that might be given, which weakness is played upon quite consciously by the opponent. In this way any quotation taken out of its context, even if it is a quotation from a well known expert - preferably Nobel prize winners are quoted here - disturbs the listener. He is ashamed of his lack of information and no longer participates in the discussion.

Experiences

This changed situation must be borne in mind in public relations work. Our experience from numerous and varied discussions with individuals and committee actions against nuclear power has shown quite clearly that large-scale meetings and the use of the mass media will be able to produce only a general information and education of the public. Events of this kind are not the right way of explaining even to an interested public more complex situations, such as the problem of the risk probability, in sufficiently accurate mathematical terms, to make the population risk conscious or to explain problems of cost benefit relations. Alternative thinking when it comes to problem solutions often verges in the well known German quotation of St. Florian: "St. Florian, pass by my house, hit others."

Good results were experienced with homogeneous groups in which one specific subject was discussed at a time. Such groups consisted for instance of physicians, teachers, students, municipal councillors and the leaders of local government groups.

In the light of personal experience gained in meetings of various kinds the authors would like to make the following recommendations:

- No excessive technical specialization.

- Simple, uncomplicated language without any sayings and without any technical terminology.
- Problems should be simplified to a permissible extent in order to meet the understanding of the respective target group.
- Meetings should consist of a brief introduction to the problem followed by a discussion.
- The subject to be discussed should be clearly defined before the meeting by mutual agreement among the groups.
- Organizing several small-scale discussions with greatly varying audiences is preferable to one large-scale meeting.

For each subject that is likely to be touched upon one well-trained expert should be available who has sufficient technical and formal knowledge of the problems.

Present Activities

In the light of the overall situation, the management of "Gesellschaft für Kernforschung" advised by the Scientific and Technical Council decided, to establish a department within the health physics division responsible for "Nuclear Power and the Public." This new department is to engage in the discussion between the public and environmental committees and nuclear power. It is to help return the controversy from the emotional, aggressive atmosphere which seems to be preferred, or even sought, by many environmental action committees back into a sober factual atmosphere which will be the only basis for fruitful work in the field of peaceful utilization of nuclear power.

The activities to be pursued by the department will be the observation and critical evaluation of public hearings and the scanning and assessment of all those publications which deal with the subjects of environmental protection in general, and nuclear power and technology in particular.

Other important duties of the department are the informing of all interested parties on the current state of discussion between nuclear technology and environmental committees, which time and again maintain that they represent the public at large; crystallize the controversies and their arguments and finally, make avail-

able to the public factual information about nuclear power and technology through publications and by actively participating in public discussions.

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