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The other day I came across a booklet published by the most vocal anti-nuclear movement in Sweden - the People's Campaign against Nuclear Power. The booklet bore the title "That's Why Nuclear Power Must Be Abolished - a collection of arguments". Let me quote some of them:

- Per kWh the acidifying emissions (SO_2 , NO_x) from nuclear power are the same² as from coal fired plants. (That is because the production of uranium requires enormous amounts of fossile fuel).

It takes several hundred million years for the radioactivity of spent fuel to decay. The radioactive substances in low and medium level waste are exactly the same - just more diluted. Don't be fooled by the presence of shoe covers - they don't change the half-life!

- In a reprocessing plant a critical mass can occur. The ensuing nuclear explosion could have the same devastating effect as an atomic bomb.
- Not only Russia hushes up nuclear power accidents, like that in the Urals in the fifties. After 30 years it has been revealed that a fire occurred in 1957 at Windscale. Put under hard pressure the British Government now admits that the radioactive emissions were tremendous - about a thousand times greater than reported for Harrisburg!
- A SOCIETY BASED ON DEMOCRATIC DECISION-MAKING MUST MAKE SURE THAT THE PUBLIC GETS A TRUE PICTURE OF REALITY. IF WE GET INCORRECT INFORMATION, WE WILL MAKE THE WRONG DECISIONS FOR THE FUTURE.

The last statement is the only one I can agree with!

Analysing the arguments of the anti-nuclear movement in general, one is suprized to find that they are mostly of a pseudo-scientific nature. There is no hesitation to talk about "half-life", "kilowatt-hours" or "critical mass", let alone "Down's syndrome" or "childhood leukemia". Obviously, "facts" are believed to impress more than ideological arguments. Judging from the success of the anti-nuclear movement, the hypothesis is correct.

I am therefore puzzled by the scepticism against matter-of-fact, scientific information that is sometimes voiced in our own ranks. My own work has long been dictated by the belief that it is that kind of information that will in the end win the battle.

There are of course difficulties. Firstly, our information lacks the doomsday note and drama that catches the attention of the media and the public. Here, while the anti-nuclear message has the character of a virus, ours might instead be considered a vaccine - it does not cause much commotion when administered but has an extended protective effect. We are helped by the fact that most anti-nuclear arguments are variations of a few predictable themes: radiation, accidents, waste, proliferation, and economy. Continually bombarding media representatives, educators and administrators with easily accessible and stringent information on these issues hopefully makes the recipients less inclined to take the anti-nuclear messages at their face value.

There is another difficulty: the frequent need for quick response. Although the themes are old, a new variation may spring up overnight. A well founded refutation usually requires both expert knowledge and some research. To meet this difficulty we maintain a broad preparedness through a group of experts representing many disciplines and organizations. However, the basic problem of speed remains.

Let me give one example. Just before Christmas, an old disturbance at Biblis A made headlines in the Swedish media as an "accident and near catastrophe", held secret by the German

utility. Our organization for international experience feedback could immediately supply an incident report, demonstrating that the alleged secrecy was exaggerated. However, to clarify the margins to a real accident, communication with the German safety authorities was necessary. Finally, evaluating the relevance for Swedish PWRs took some brooding over design drawings for Ringhals. It took about two weeks before the rather reassuring information had been put in a digestible form and distributed. Despite the delay, our news-letter has hopefully contributed to dispelling the ghost of Biblis from the Swedish debate.

A third difficulty I want to mention is that of credibility. The political science department of the University of Gothenburg (Professor Jörgen Westerståhl et al) has ranked the credibility of different informants with the public. Not surprisingly, the credibility of industry was low (although not as low as that of journalists!). University scientists/engineers enjoy by far the greatest credibility. At the same time Westerståhl showed that 70 % of the group are pro-nuclear. An obvious task is therefore to enroll these independent scientists in the debate.

Let me now describe how we try to meet the conditions described above.

The KSU is owned jointly by the four Swedish nuclear utilities. Its main responsibilities are operator training and feedback of foreign operating experience. The small company enjoys a measure of independence with respect to the plant owners, and is not burdened with the bureaucracy of the large companies. Our mandate for information grew out of the role we played after the Chernobyl accident. Our work is complementary to that of the traditional information departments of the utilities (and our budget orders of magnitude smaller).

Consequently our methods are somewhat unorthodox. The backbone of our activity is the so-called Analysis Group. It consists of nine people, hand-picked for their broad professional background and long experience, combined with a demonstrated interest in communicating their knowledge. Among us is e.g a chemist and fuels expert, a professor of radiooncology and the head of a nuclear safety department. Most members come from organizations other than the

KSU - eg the nuclear plants, the State Power Board, ABB Atom and a university - so the information work is done voluntarily besides a different job and requires a great deal of dedication. A key person is the secretary and editor, the only non-scientist in the group, who instead has media knowledge, editorial experience and unbounded enthusiasm.

The Analysis Group holds scheduled telephone conferences once a week. Items on the agenda are, in addition to special events, media coverage and political developments. We discuss action plans and divide different tasks between us. These tasks may be contacting other experts, searching the literature, watching a relevant TV-program or formulating a newspaper article or newsletter.

Our regular communication channel with the outside world is a newsletter called "Background". A Background is issued when an event calls for information or when the debate shows that the public is ill informed. Examples are the recent licensing of containment filters at the Swedish plants, the Legasov "memoars" after Chernobyl, or the Biblis incident already mentioned. A Background may also be issued on a more general subject where information is needed, e.g risk assessment, the biological effects of radiation, or recent developments in nuclear technology. A guiding principle is that our material should be strictly factual, and correct to the best of our knowledge. The recipients are decision makers and moulders of public opinion (media, political organizations, trade unions, parliamentary committees, educators etc). Another important category is the staff of the nuclear industry, whose morale often tends to be undermined by the public debate. The demand for our newsletters is steadily growing.

As a scientific body, the Analysis Group has been able to establish a network of experts outside the nuclear industry. Many scientists outside our field are deeply concerned about the abuse of science in the debate, and are willing to contribute. We provide these persons with press clippings, research reports, media contacts and our own information material. They, in turn, offer their expert advice and often enter the debate. The network includes medical doctors, biologists, physicists, economists and political scientists.

During its one year of existence the Analysis Group has acquired the reputation of a reference group. Its services are demanded by many pro-nuclear or neutral organizations, such as trade unions and political parties. We are also called upon by our own industry for assistance in preparing statements.

Our future role is hard to foresee. The next two years will be critical for Swedish energy policy. The Government has declared its intention to phase out two well-functioning nuclear plants in 1995-96 in order to prove its uncompromising adherence to the abandonment of all nuclear power by 2010. Optimists have read a proviso into the Government statement, i.e that it must be shown by the end of 1990 that alternative energy forms will be available and that the societal costs are surmountable. There is a growing conviction that these conditions cannot be met, in particular since there is a parliamentary decision to prohibit increased carbon dioxide emissions.

It may therefore be expected that the energy debate will be intensified up to the end of 1990, and that the information problem must be given highest priority for yet some time.