

#N's PIME '99



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Transactions

Case Studies, Discussion Documents, Posters, Videos



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VIEWS OF THE YOUNG GENERATION



XA04C1300

THE YOUNG GENERATION AND COMMUNICATION WITH THE PUBLIC : FIRST FEED-BACK

Estelle GREVIN (SFEN, *EDF*) - Florence AVEZOU (SFEN, *COGEMA*)

ABSTRACT

The purpose of this non-professional paper is to describe the first steps being taken by the Young Generation network of the French Nuclear Society in the communication field, i.e. what they already have learned, and what actions they intend to conduct in the near future.

From experiences conducted in France in the recent past, we can build a map of public expectations as far as nuclear information is concerned. "What do they want to learn?", and "Do they really want to learn something about nuclear stuff ?" are the main questions.

From the numerous questions asked to COGEMA representatives at the "Foire de Paris" (Paris Fair) in 1998, we can identify five categories of public concerns.

1- Self-centred attitude :

- Health : radioactivity impact
- Local curiosity (neighbouring nuclear plant)

2- Unselfish curiosity

- General curiosity : what is nuclear?, what is nuclear future?
- Technological curiosity : visits, how does it work ?

3- Social Attitude :

- Economics : nuclear, reprocessing and recycling
- Politics : trade with Russia, non-proliferation, terrorism, comparison of French and others strategies...
- Environment : waste toxicity

4- Already developed awareness

- Precise and technological curiosity

5- And the category of people that have not asked any question should not be forgotten or set apart.

To the four first people profiles, to answer their questions means to fill a gap they feel exists in their "nuclear knowledge", and the challenge is really to find the right words, the right level of communication. From category 1 to category 4, the technical level of the answer must increase, and, profile 4 will need to consult an expert. For the others, whether they are self-centred or socially oriented is not the point, they expect simple explanations, in relation with their everyday life, because they recognise the fact that nuclear is part of it, and they just want to know better the actual consequences of this fact. Their concerns can probably always be translated into a simple and universal question : "what does nuclear change for what is significant in my life ?".

The fifth category did not come and ask. Does it mean these people are not interested in the subject ? Does it mean these people do not care about nuclear at all ? It certainly does not mean they have never heard of it ! It may mean they believed they would not understand the answers. It may mean they were simply afraid or ashamed...

And what is more innocent, what is more reassuring than a young person ? And in general, for all categories except number 4, for one reason or another, Joe Bloggs will probably not ask the same question depending on whether he is in front of a young person or not. And if not, he may not ask a question at all.

The first reason why a young person involved in nuclear would at first glance get a better note in credibility is precisely the fact that he or she is working in this field, and has therefore probably chosen it. And he, or she has chosen it recently, at a time when nuclear is a very controversial subject, unlike twenty years ago, when it was certainly more gratifying to work in this field. We live also at a time when environmental concerns are much stronger.

"And a young person that knows all that has even so chosen to jump on board the nuclear boat ?"

Secondly, everybody will agree on a natural human reaction which is that one is less intimidated in front of a young person than in front of an older person, and shyness and fear of being criticised are also much smaller.

However if young people are a relevant choice for contacts, what do they have to say, and do they have the knowledge to answer ? They are probably not the "experts" that are going to answer questions from category 4, but since young nuclear staff have entered the nuclear world recently, they remember perfectly their nuclear "training period" and can easily put themselves in the position of the public, use simple wording, understandable images, universal comparisons...

The same applies also when dealing with journalists and ecologists. Young people coming back from Kyoto and more recently from Buenos Aires all got the impression that it was easier for them to get in touch with ecologists, because they have basically the same concerns and are somehow complementary.

The attraction for journalists comes probably from the pleasant surprise of coming face to face with young representatives of the nuclear industry which is a quite recent phenomenon, and from hearing new nuclear messages.

While the young generation is probably less motivated than the first nuclear generations by the technological challenges - simply because it has already been a success, and to maintain technological know-how is a challenge, but not an actual source of motivation -, and the economical challenge is de facto present in everyday nuclear life, the young generation becomes naturally involved in what could be called the new nuclear challenge, that is, nuclear communication.

And building new messages has already started : "tell the truth and do not hide the drawbacks, demystify nuclear, treat nuclear as a relevant part of the energy mix and not as a goal, promote energy... and certainly make nuclear understandable and make nuclear information fit with public expectations"... are the guidelines of the young generation communication strategy.

Also, thinking and talking simply can be done in a very fashionable way. Why not try to adopt the communication style people like so much in everyday life : we are talking here about scoops ! To make people interested in your activity, give them something they can tell at home, something they can easily remember, something everybody would understand, something everybody will believe, and something that will breed a surprise feeling. French people probably all remember the EDF "nuclear drill" or hair-dryer in a TV commercial a few years ago. We can also quote the example of a small book from Framatome called "Arguments" which is built on the same idea, maybe a little bit too partial...

In concrete terms, the communication actions planned by the young generation of the French nuclear society in order to promote nuclear are :

- to go on promoting the role of the young people in the communication field
- to open its information activities to a larger public, not only the students interested in the nuclear field, which already belong to the society, but also to anybody, schools, young politicians, ecologists, journalists, and the general public, through large scale events like the Paris Fair.

That presupposes that the young people involved are sufficiently aware, and prepared to argue. So let us suppose nuclear companies want to have their industry field appreciated by the public, then they should give young people the means to help.



XA04C1301

Links to Young People - Multimedia and the Internet

Marie Dufková
Czech Power Company

The popularity of computer multimedia, CD ROM and, in particular, the Internet among young people is unparalleled. Therefore, we make use of such tools for communication with this important target group. Following up ÈEZ's educational programme which achieved results we are proud of, we issued a multimedia sequence informing about nuclear power. Over twelve hundred CD-ROM discs carrying this programme were sold in two years, and in addition, several thousand visitors at exhibitions and in information centres of Czech nuclear power plants had the opportunity to watch the programme.

Since the last year, ÈEZ has been displaying Internet pages presenting basic information about our nuclear power plants at Dukovany and Temelín; topical information is updated weekly (e.g. progress in construction of the Temelín plant, summary information concerning the construction of this plant as submitted to governmental authorities, response and answers to antinuclear activists' criticisms, ...). The ÈEZ home page is linked with the home pages of the nuclear power plants themselves.

Two new multimedia programmes are to be released by the end of 1998: presentation of the ÈEZ utility company, and Multimedia Power Encyclopaedia. Both titles will be linked to the Internet, as well as to the company intranet which is accessible to ÈEZ personnel. The multimedia encyclopaedia is an extension of the textual Power Encyclopaedia, which has been issued within our youth education programme.

We are making efforts for all of our multimedia products to be interlinked and to complement each other suitably.

Surveys and statistical data indicate that the ÈEZ home page on the Internet is the most frequently visited page among the pages of Czech industrial companies.

**HANDLING MINOR
INCIDENTS**

—

**PREVENTING A
MOLEHILL BECOMING
A MOUNTAIN**



XA04C1302

PUBLIC TRUST : STRUGGLE AND REGAIN

by
Tadao Aoki
Monju Construction Office
Japan Nuclear Cycle Development Institute

1. Introduction

The after-effect of Monju and Tokai accidents has been much larger than expected. It struck PNC a fierce blow and the damage did not stop there but extended to the nuclear community at large. As a result, PNC was reformed into a new corporate, Japan Nuclear Cycle Development Institute (JNC).

JNC has been given a new body but its mind must be cultivated so as to be able to regain public trust.

2. Accidents and their aftermath

On December 8, 1995, non-radioactive sodium leaked from the secondary main piping at a rate of 50g/s through the temperature sensor due to the breakaway of the tip of the well-tube. The leak lasted almost four hours and sodium aerosol spread in a large area. Although the cleanup work of a largely spread sodium aerosol took us several months, the thermally-affected area was confined within the cone formed by 3.5-m diameter base circle and 4-m high apex directly under the failed sensor.

A year and three months later, on March 11, 1997, a fire broke out in drums filled with bituminized product in a cell at the Bituminization Facility of the Tokai Reprocessing Plant. Later at night, an explosion took place damaging the cell, releasing radioactive smoke outside of the building and exposing 37 workers with minor dose of radiation.

These accidents are classified as "Level 3" for Tokai and "Level 1" for Monju based on International Nuclear Event Scale (INES). They are minor incidents. Then, what made a mountain out of a molehill ?

It was all caused by PNC's mishandling information such as the delay in releasing the first report on the accident, accident cover-up by editing the video with the damaged scene left out before making it public and a false description in the formal accident report transmitted to the authorities. Worst of all, the mistake made at Monju was repeated at Tokai. The press jumped on this and the public was scandalized at PNC, resulting in the unexpectedly large negative public reaction toward PNC and also Japan's nuclear power program. Science & Technology Agency (STA) set up the PNC Reform Committee in April 1997 and, after having studied the Committee Report, decided to reform PNC into a new corporate body in October 1998.

In order to reflect public opinion to a national nuclear program, Japan Atomic Energy Commission (AEC) initiated Round Table Discussion, inviting experts from non-nuclear as well as nuclear fields and general public as panelists. This is open to the public and held at central and sometimes local cities for convenience.

Right after the Monju accident, the anti-nuclear group quickly moved to solicit the public to sign a petition against the restart of Monju and collected 219,000 signatures within the Fukui prefecture of 850,000 residents. Several municipalities in and around the Fukui prefecture also voted against the restart. The governor of the Fukui prefecture refuses to discuss about the restart until the Japanese government clarifies the position

of the Monju project in the long-term program for nuclear power development and obtain national consensus.

3. Struggle to regain public trust - a case of Monju

After five and a half years of construction work, Monju began pre-operation tests in May 1991, achieved initial criticality in April 1994 and the first connection to the grid in August 1995. And the accident in December 1995. Until then, we had confidence, perhaps over-confidence, and we took it for granted that the public was always with us.

Our struggle began - struggle to regain the public trust.

(1) Improvement of safety measures and emergency management

We spent a year for the cause-investigation of the sodium leak and another year for the total safety checkup of the plant with emphasis on the integrity of the sodium boundaries. Based on the findings, we proposed the improvement measures. The final report was submitted to STA in May 1998.

As for emergency management, a special task manager was appointed to control the line of command in an emergency with a very efficient incident reporting network to release information without delay.

(2) Cultivation of a new corporate culture

PNC's Ethical Code of Conduct has been created to seek a new corporate culture which is to be 1) trusted by society, 2) open and contributive to society and 3) worth working for.

(3) Open information

A PNC public information policy was enacted whereby the public could have easy access to all the information except those related to the protection of nuclear materials and commercial secrets.

(4) Public communication

This is the area we neglected in the past and now we are putting maximum efforts in. We are promoting different campaign in this area.

- "Door-to-door visit"

Trying to reach out to as many people as possible, a number of our staffs are making house visits now and then, besides mailing leaflets and news-letters regularly.

- "Public meeting"

Fukui prefecture has 35 cities, towns and villages. We are setting up a meeting, usually in the evening for convenience, at least once at each place and report the public the results of the cause-investigation, the total safety checkup and the improvement measures proposal. Women staffs are very active in this campaign, making difficult subjects easy to understand for the audience.

- "Come-and-see"

The most fruitful dialogue has been achieved by this campaign which takes from 1.5 to 2 hours including orientation, a visit to the accident spot and Q&A session. Again, women staffs come to the front here. Monju is open to the visitors seven days a week. More than 30,000 people visited Monju in this campaign.

- Weekly press conference

Every Friday afternoon, Monju staffs visit the local press center and make a weekly report on the activities at Monju.

4. From PNC to JNC

A PNC reform bill was presented before the Diet on February 10 and passed almost unanimously on October 13, 1998. According to the new law, PNC starts afresh as a new corporate called "Japan Nuclear Cycle Development Institute" to carry out the following three projects:

- 1) FBRs and their related nuclear fuel cycle
- 2) advanced nuclear fuel cycle technology, and
- 3) LWR reprocessing research with high level radioactive waste treatment and disposal

During the discussion in the Diet, they requested PNC the following conditions to be fulfilled before being transformed into a new organization:

- to enhance safety measures and emergency management:
- to improve corporate culture, and
- to enlarge public information.

5. Conclusion

JNC was inaugurated on October 1, 1998. But we are not yet full-fledged members of JNC until we regain the public trust. When will it be ? It will be the day when we obtain the "go sign" for Monju startup. Our struggle may continue for some time.



XA04C1303

Communication Report Regarding the Incident on The Residual Heat Removal System at The Nuclear Power Plant of Civaux May 12, 1998

Philippe Chadeyron, EDF Production Transport, CNPE de Civaux

What Happened Technically?

The RRA (Residual Heat Removal System) of unit 1 had a leak of 280m³ while the reactor was shut down for a period of 5 days, for normal start up tests. The leak was caused by a crack in a weld on a pipe of 25cm in diameter. The liquid was completely contained within the Reactor Building containment; absolutely nothing leaked outside of the Reactor Building. This incident was classed level 2 on the INES scale.

The Context

The incident on the RRA system of Civaux 1 on May 12, 1998 occurred during a period both Locally and Nationally that did not facilitate Media Management.

On the national level, May 12, 1998 corresponded to the release of a report - with extended news coverage - by the Director of the DSIN (National Safety Authorities) on the transportation of used fuel.

On the local level, the incident occurred while unit 1 was in the process of start up tests (at 50% power) and caused a shock in local confidence; the public was not prepared for an eventual incident, even with the recent campaign around the distribution of Iodine tablets. The community had an image of the Power Plant as a worksite. On the other hand, the length abnormally long of the construction, permitted us to reinforce certain messages, notably the Nuclear Power Plant «The Most Modern In The World». The context of this event that we may judge as atypical has certain considerations which inevitably limit the range of experience feedback. However, the nature of the incident and its Media Management remains instructive.

The Communication Immediately following the Incident: The Efforts Toward Transparency Are Rewarding

The number of repercussions in the regional and national press are significant: Close to 200 articles to date, numerous radio and TV coverage, with a period of « crisis » concentrated over approximately six weeks. (The first two weeks are calm enough).

At 7:30 in the morning of May 13th, the first press release was issued. At 2:00 pm a second press release was sent; indicating the level on the INES Scale (2). Speed and transparency in the distribution of information was insured. The site had a sense of accomplishment faced with the media's reaction and their request for immediate and transparent information.

During the days and weeks that followed, while keeping up with the state of events, numerous press releases (nine up to August 11th) and press conferences (three up to June 15th) were offered.

Two days after the incident we understood better its extent and evaluated better its technical consequences and psychological potential on the inhabitants of the region. A post incident communication plan was proposed by the site, to respond to initial worries and initial rumors. Elected Officials, the President of the Local Information Commission of Civaux, the Prefecture, Health Officials, Teachers and the other traditional lines of communication had been the object of continuous quality information.

The public at large was given specific attention and an information leaflet was created and distributed in the mailboxes of 19 surrounding towns concerned by a potential evacuation plan. EDF personnel and Unions were regularly informed through several speeches by the Plant Manager.

Two weeks after the incident, bad planning in the distribution of information provoked a media crisis that continued throughout the month of June. More than twenty organisations positioned themselves against the NPP, and criticized its non transparency. The theme «Information and Transparency» becomes a subject in and of itself. The Nuclear field will be judged each time in this area, which could be almost more important than the incident itself

The Areas For Improvement In terms of Communication

The first Press Release must not be positioned as an alibi. This could overshadow the efforts made towards a more global view.

The importance in the «Choice of Words»:

Nuclear vocabulary uses words that are natural to the Nuclear Industry, but may cause fear to the mass population (*contamination*), (compared to the consequences of the dose rates, which are minor. Here we are talking about a dose rate equivalent to one percent of the annual rate). Transparency requires one to give numbers, but it does not require the use of words which have a negative connotation, (i.e. *contamination*), except if necessary

The Idea of a Target Audience used to relay information does not completely work.

The Media plays its role, but how many read or listen, and is it enough?

The Elected Officials do not relay the information, and criticize via the media, the insufficient amount of information.

Above all, the local population does not have direct contact with EDF, and it expects information from the source.

Logically it seems that:

The question of holding public meetings, despite the risks, should be systematically asked.

The distribution of a News Flash directly from the NPP to the surrounding inhabitants via the mail in the two days following an incident is necessary. The project of creating the leaflet overshadowed the idea of creating a News Flash. Reinforcing the communication team would permit the implementation of all these ambitious but necessary projects.

It seems necessary to enlarge the geographic zone of the public at large as well as the officials compared to our usual action.

The Problems Surrounding A Spokesperson :

Naming the Plant Manager as «Spokesperson» seems like an easy solution, in reality it is not necessarily a good one.

1. Giving this role directly to the Plant Manager automatically gives the idea that the incident is very serious; the first step creates the perception of the crisis.
2. Giving this role to the Plant Manager, creates difficulties in changing the message. For example:
 - * In the case of technical evolution.
 - * In the case of eventual misinformation by the Plant Manager, directly connected to changes in the data.

In these cases you run a serious risk of prematurely weakening the position of the Plant Manager.

On the contrary, if the Deputy Plant Manager (i.e.) is the spokesperson the effects of an error are less serious and correctable by the Plant Manager.

3. Finally and probably the most important: place the Plant Manager out of the confusion, by limiting the pressure caused by the incident and the media. This should permit better crisis management.

To Deny or not Deny

In a Crisis situation several organisations use media to communicate, they sometimes do not hesitate to give misinformation. During the incident on the RRA System, the NPP decided not to deny in writing any misinformation in the hopes that it would not enter into controversy. Meanwhile, making press calls to rectify the worse misinformation in person was more effective and created awareness amongst journalists in

Stopping a Crisis

A crisis can last forever. Your Strategy should foresee a deadline. For Civaux this deadline was created by a Press Conference «Assessment» in Poitiers in the presence of the Prefect of the region, the Director of the DSIN (Safety Authorities), EDF Direction and the Plant Manager.

Conclusion

A few months after the incident, hindsight helps, we can say that the media management of the RRA incident on, May 12th was in the image of its technical management, that is to say well mastered, and outside of the incident itself close to perfect. Obviously, the work we did during crisis exercises reaped its rewards.

What is missing to advance to the next level?

Maybe a bit of psychology, to attempt to surmise what a leak of radioactive water could represent in the public's eyes as well as the Media's who ignore the «safety culture» (back-up trains etc.) and who still have fresh in their memories the Tchernobyl accident.

The vital Experience Feedback we collected and that of the Nuclear Industry since it exists incident after incident, even if immeasurable progress has been made (Civaux is a good example) our technical culture remains a hinderence towards a good estimation of the emotional level that such an incident can cause.

Otherwise said, we still have progress to make on measuring the impact of an incident, not on the technical consequences nor the seriousness, but on the psychological impact it may have on the public.

Beyond the crisis, this incident also showed how essential it is to dare talking about incidents and Safety Culture before intervening. The intimate enemy of Nuclear Energy is above all the relative ignorance in which the population finds itself We still have work to do...

Annex

Some good Practices to Remember ...

- * The speed with which the first press release is sent (very important for the perception of the population to the transparency of the site).
- * Numerous press conferences (remember the response is always in comparison with the investment). It insures press coverage up to three times more than a press release and permits the journalist to single themselves out.
- * Information leaflet with its large distribution, toll free number and personal responses...
- * Quick and continuous information distribution to elected officials, CLI (Commission Local d'Information - Local Information Commission) and the NPP Civaux staff and unions.
- * Good communication with Paris Headquarters.
- * Information Flash distributed in each mailbox within a 5 to 10 km radius.
- * Public Meetings (depending on the nature of the incident).
- * Special meetings «Elected Officials» (invite high level elected officials).
- * An information package targeted towards the Medical profession (signed by the NPP doctor).
- * Information on the WEB.



XA04C1304

SOMETHING FROM NOTHING – AND HOW TO TURN SOMETHING INTO NOTHING.

Bob Fenton
Chief Press Officer, British Energy

I thought for my presentation I would look at two incidents that I have had to deal with recently, looking at the way the stories developed, how we handled them and what the end result was. The first incident relates to a small fire in a turbine pedestal – quickly put out by station staff using a fire extinguisher. The second looks at the impact of leaking around 200,000 litres of red diesel oil next door to a site of special scientific interest and the habitat of several rare species of plant and animal life.

So which of these two incidents caused us the most problems? Well they both did – and the second one still is – but for very different reasons.

The first incident happened in January 1997 at Heysham One power station on the Lancashire coast. At 10:15 on the morning of Tuesday January 7, reactor one at the station (there are two) was manually shut down as a precaution after the fire alarm system indicated a small fire in the station's turbine hall – a non-nuclear part of the plant. Some lagging material around an oil bearing had started to smolder, setting off the smoke detection system.

A site fire muster was called and, as is routine with all fires at our station, the civil fire brigade were called to the site. In the meantime two members of the station fire-fighting team attended the incident taking with them a selection of fire extinguishers. After assessing what the situation was they quickly put out the fire using a dry powder extinguisher and returned to the control room at 10:45 to confirm that the fire was out.

The fire brigade arrived after the fire had been put out, but carried out a cursory investigation all the same. They departed soon afterwards having confirmed that the fire had been dealt with efficiently. They didn't even bother to unpack their vehicles, just walked in, had a look around and left again. No problems.

In the UK, and I suspect in many other countries as well, the fire service routinely brief the local media about their activities. And in any case to a local journalist the site of a couple of fire engines hurtling along the road, lights and sirens blazing, is potentially a good story. So it was no surprise to us when the local evening paper – the Lancashire Evening Post – rang to get details of what had happened at the site.

The following day – Wednesday – the Post carried a small news story – no more than a couple of paragraphs detailing the event, pointing out that the fire had occurred on a non-nuclear part of the station, that it was out before the fire brigade arrived, and that there was no danger to either plant or people. We were even able to tell them that we expected to restart the reactor in about 5 days following an internal inquiry into how the fire had started.

End of story? Unfortunately not.

On Wednesday the local radio station picked up the story and asked for an interview with someone from the site. We were happy to oblige, and again pointed out that this was a small issue with no long term consequences. Once again we highlighted the fact the fire occurred in a conventional part of the plant, and that there was no danger to the general public or anyone else for that matter.

End of story? Again, no.

As a result of the radio broadcast, a local reporter for the Press Association – the biggest news agency in England – filed a story which appeared on the wires under the heading ‘Blaze at Nuclear Power Plant’. The writer somehow managed to ignore a couple of facts, namely:

1. There was no blaze, just a smoldering bit of lagging
2. It was put out by station staff before the fire brigade arrived
3. Nuclear safety was not an issue
4. The whole thing had happened two days before he filed his story

Still, why let the facts get in the way of a good story.

And this is where the fun really started. Just about every large news organisation in Britain subscribes to the Press Association service, so this story flashed its way around the country. Of course we rang the Press Association to correct their story but by then the cat was well and truly out of the bag and we were quickly inundated with an avalanche of telephone enquiries to our press office.

The calls flooded in, national newspapers, national radio and TV stations clamored for comment and interview. They all wanted to know all about this huge conflagration that was engulfing Heysham and its nuclear power plants. Calls came from the USA, from France, from Scandinavia and from just across the water – Ireland.

Thanks to some fairly overstated reporting – and I do not know of any journalist who has ever been sacked for exaggeration – the Irish foreign minister, Mr Emmet Stagg rang his opposite number in the UK government demanding to know why he had not been informed of this incident and asking for a full report.

Of course we simply knocked down every story that came our way, but it still created quite a stir. In all we handled over 150 calls on the Thursday and Friday – two or three days after the fire had been put out. It was a classic case of something from nothing, but serves to highlight how quickly a story can take off if you are not ready for it.

So compare this with the second incident that happened, and is indeed still happening, at Dungeness B power station in the south east of England.

I should just say that because this case is still the subject of legal action I cannot go into all the details, but can go through the actions we have taken to minimise the impact the story has in the press.

For those that don’t know the station Dungeness B is our closest station to London – it’s about 80 miles south of the capital – and sits in the middle of the biggest area of natural shingle anywhere in Europe. It is surrounded by a national nature reserve and a site of special scientific interest. It is home to several rare species of flora and fauna as well as some animals, insects and birds that are not found in other parts of the country. It also has a large drinking water aquifer running right through the heart of the site.

So not a good place to loose close to 200,000 litres of red diesel oil, but that is exactly what we did. As I said, this is still the subject of legal action back home, so I cannot go into great details about the cause – this is probably not the right place to do that anyway. Simply though, we lost the oil through a hole in a pipeline that was buried in a trench. This oil seeped directly into the ground, there was no visible trace on the surface of the shingle and no oil has got into the sea.

Obviously this has all the hallmarks of a horror story as far as we were concerned. The fact that the station is so close to London didn’t help – the regional TV company is based in the city – so were looking at having to try to defend the undefendable in the full glare of the national spotlight.

We decided the best way to try to head this off was to make the story old news, even before it got into the papers. We told our local residents about the spill by including an item in the regular two-weekly newsletter that goes out from all our sites. This newsletter also goes to local media outlets, so were also keeping them in the picture all the time.

We invited councilors and other opinion formers to the site to show them the remediation operation that was – and still is – recovering the oil. We updated our local liaison council at every meeting – holding nothing back about the likely cause of the leak, but majoring on the extensive operation taking place outside the station.

Contact with key journalists on local newspapers was stepped up. We fed them enumerate stories about things going on at the plant, sponsorships, human interest, environmental anything to help break down the image of a monolithic grey block at the end of a road

When the story broke nationally in September – nine months after we started telling people about it – it was because the Environment Agency had instigated legal proceedings against the company. Although there was some negative TV coverage it was quickly dealt with – 90 seconds on regional TV on one evening. The local press covered the issue of the summons, but then also pointed out the efforts that were being made to recover the situation. Although they had not run the story before it was old news – everyone knew what had happened, so there was little point devoting acres of newsprint to it.

During the intervening period between the issue of the summons and the first court hearing we briefed extensively on the recovery operation- over 80,000 litres of oil had been recovered by Christmas – so we made sure everyone knew that. We prepared easy to follow diagrams, took photographs, shot TV quality footage all showing the efforts made to get the oil back out of the ground.

We set up special TV training programs for the director who would be forced into the media spotlight when the case came to court. Lines were written and rehearsed, the impact of his words were assessed by a neutral audience to make sure he was giving the right impression and was providing credible answers to some very real questioning.

By the time we went to court in early January we were confident that any pictures that would be used by the media – whether print or on TV – would be ours. We were dictating what could be seen, things were running to our media agenda.

As it turned out the hearing in January was not conclusive and the matter will go before a higher court later this year. In the meantime we will continue doing what we are doing as far as the media are concerned. Hopefully when the matter is dealt with you won't hear about it – if you do I hope it's from me and not from some huge splash story in the international press!

To sum up: sometimes it can be the smaller, seemingly inconsequential stories that trip you up. Remember what may seem insignificant to you, may be a real issue outside of your company. With an opportunity to do a little planning and pre briefing even seeming huge stories can be effectively managed and their impact on the media minimised.

NUCLEAR POWER — WHAT'S IT WORTH?



XA04C1305

FINANCIAL ANALYSTS AND THEIR OPINION ABOUT NUCLEAR

Patrick H. DE VOS
Company Spokesman and Investor Relations Manager
ELECTRABEL, Brussels

This article is to be considered as an introductory note to the presentation
at PIME-Avignon.

1. ELECTRABEL COMPANY PORTRAIT

Electrabel is a Belgian utility with business activities ranging from electricity generation and transmission (market share 88 %) to direct distribution of electricity to industrial customers. It also distributes electricity and gas to small and medium enterprises and households through the mixed intermunicipal companies for energy distribution (85 % market share for electricity and 89 % market share for gas).

The distribution of TV- and radio signals in Belgium exceeds a 98 % market penetration. Electrabel holds a 53 % market share in this business through mixed intermunicipal companies.

Electrabel has also a developing steam-sales business and operates a 10 % market share in water distribution.

Electrabel operates a diversified power stations portfolio with a total installed capacity of 15,000 MW and which includes seven nuclear reactors for a total generating capacity of 5,713 MW. These nuclear power stations are also known as highly reliable and efficient. In 1998 they generated a 55.2.1 % of total electricity production in Belgium. Gaseous fuels (natural gas) contributed for 22.9 % to total power generation output. Production based on coal and recoverable energy accounts for 16.7 %. Renewables account for 1.8 %, and fuel oil for only 2.8 %.

Electrabel is listed at the Brussels stock market and ranks among the three highest market capitalisations.

The industrial group Tractebel controls 40 % of the 54,472,758 shares, and the municipalities hold 5 %. The free float is up to 55 %.

In addition, Electrabel shares are quoted on the Luxembourg and Amsterdam Stock Exchanges. They are traded on the London SEAQ market, Berlin and Frankfurt, and figure on the Eurolist system.

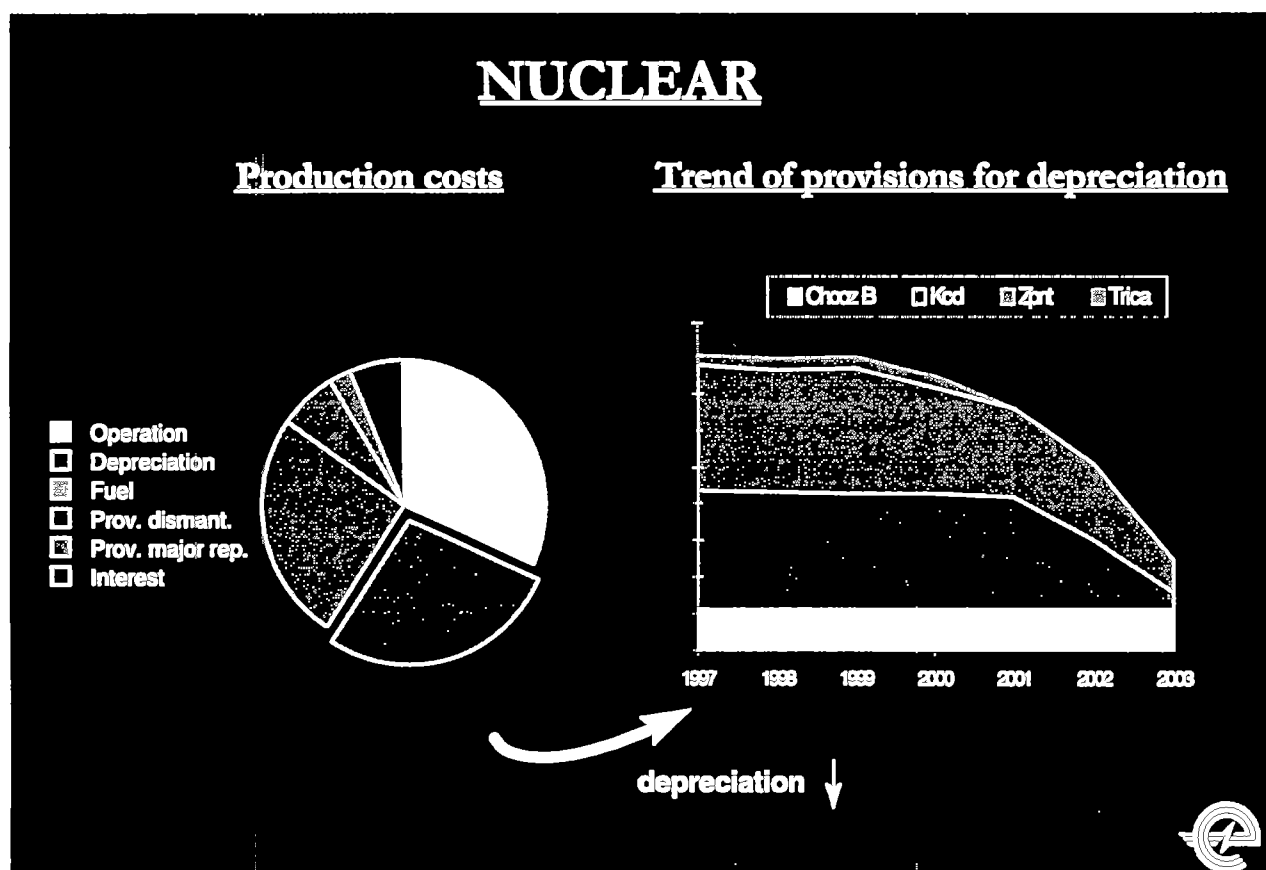
Furthermore, Electrabel is listed on the euro Stoxx 50 index.

ELECTRABEL NUCLEAR POWER STATIONS

NUCLEAR

	Year	MW	Δ MW	Invest.	Overhaul (10-yearly)	Avail. (%)
■ Doel 1	1975	392.5			1985	82.9
■ Tihange 1	1975	962	99 (1996)	SG (1995)	1985	81.5
■ Doel 2	1975	392.5			1985	77.9
■ Doel 3	1982	1006	106 (1996)	SG (1993)	1993	85.9
■ Tihange 2	1983	960	66 (1996)		1993	86.1
■ Doel 4	1985	985		SG (1996)	1996	80.1
■ Tihange 3	1985	1015		SG (1998)	1995	87.1

■ Chooz B	750 (25%)
■ Tricastin	458 (12.5%)



2. OBJECTIVES OF RELATIONS WITH INVESTORS

A company that is quoted on the Stock Exchange must arouse and maintain the interest of financial circles and retain their confidence. Interest and confidence are essential elements not only for supporting the share price but also for access to the capital markets at relatively attractive rates.

The objective of relationships with investment circles will therefore be twofold :

- to establish the company's financial credibility and
- to obtain an "objective" quotation.

The degree of this credibility can be measured from the progress of the share quotations on the Stock Exchange and from the rates at which loans can be obtained.

A good financial reputation can only be established on the basis of a good knowledge of the company's results and a good understanding of its short- and long-term strategy.

Our experience has led us to conclude that the financial analyst is more concerned with a detailed interpretation of the figures, while, because he can depend on an established financial analysis, the fund manager will be more interested in the short- and long-term strategy and will evaluate this strategy in accordance with the analysis of the country, that is to say its economic situation, the international position of the currency, and the economic and social policies of the countries affected by the company's activities.

3. COMMUNICATION POLICY

Electrabel opted for an integrated communication strategy, that is to say that the release of information relating to its image, both inside and outside the company, to the media and financial circles and even the marketing and logistics of communication must present a consistent message overall; it is only the language that is adapted to each target public.

Our communication policy aims mainly to provide **communication that is as objective as possible** in conjunction with our discussion partners, that is to say on the basis of a long-term professional relationship in a climate of mutual confidence.

How is this policy applied to "relations with investors" ?

We can distinguish two phases :

1. The initial phase (1990-1991)

In fact, before the activities of the private electricity companies were amalgamated in Electrabel on 10 July 1990, we launched a vast internal and external communication programme, starting from January 1990.

Since 10 July 1990 and more particularly the day after the establishment of Electrabel, our Chairman received about a hundred financial analysts and portfolio managers.

Since then, interest in Electrabel has never ceased to increase.

To begin with, we concentrated mainly on a general presentation of the company by explaining what is essential to our operation, that is to say Electrabel working as a private company with a public utility orientation in a remarkably firmly regulated market. We explained the figures in the annual report, of course, and we set out the short- and long-term strategy.

It should also be said that we never give specific communication as to the financial result expected. We confine ourselves to setting out our financial objectives.

2. When Electrabel was founded in 1990, but even more noticeably since 1992, we have observed a **phase of development** in both the quantity and the quality of our relations with investors.

We are now focussed on explaining how the company is facing the open European Market.

As regards the quality of our relations with investment circles, we note that their knowledge and understanding of our company are increasingly more detailed. Meetings are now characterized by detailed questions and answers sessions.

4. NATIONAL AND EUROPEAN BLUE CHIP

Together with nineteen other star-quality Belgian equities, Electrabel is part of the basket used to calculate the BEL 20 share index. It also forms part of the basket of fifty European star-quality shares from countries joining the European single currency, used to calculate the Dow Jones Euro Stoxx 50 index. Its representation in these indices explains why there is such international demand for Electrabel shares.

We frequently have investors from outside the Euro-zone and even from the United States. Our stock is well known in London, New York, Boston, Chicago, Berlin, Frankfurt, Genève, Glasgow and Edinburgh.

Solid as a rock

A certain degree of nervousness is sweeping over the share markets at the moment. The events in Asia and Latin America have even led people to talk of an economic crisis. In panic, people took refuge in Electrabel stock, which goes a long way towards explaining why the price has continued to rise.

ADVERTISING



XA04C1306

Come and see: Opening eyes, minds and dialogue

Taking stock in the fourth year of Swiss NPP advertising

Dr. Peter Hählen
Secretary General
Swiss Association for Atomic Energy (SVA), Berne

- It is now clear that the "come and see" concept underlying the Swiss NPPs' TV advertising campaign, which started in 1995/96, really does work – even over a period of several years. This is not a trivial finding: other, recent, TV and print ad campaigns with more far-reaching nuclear messages (relating to waste management issues) provoked noisy and hostile political reactions.
- The concept of an extensively regionalised testimonial print ad campaign running "under the roof" of the national TV campaign works very well. However, it must be stressed that detailed knowledge of social, political and media related situations in the regions addressed is of paramount importance, and approaches have to be carefully adapted to these geographically widely varying conditions.
- The invitation to dialogue, with its natural openness, is well received by the public and by opinion leaders, in particular by journalists – something which is observed every time the campaign starts in a new region.
- The aim of the programme, namely to give the Swiss NPPs "a voice of their own", has been attained, despite a rather moderate budget. The fact that the Swiss NPPs speak out on their own, without reference to their superiors in the economic hierarchy, is accepted and even well received by both the media and the public.
- The principle of devoting at least half the budget to the direct costs of "placing" TV ads – in order to attain recognition in the face of the prevailing flood of information – has been proved to be the right one. Professional advertising efficiency controls carried out every year since the start of the campaign have confirmed that the NNP TV ads have been "noticed" by a reasonably high percentage of the public, compared to other TV ads shown at the same time.

- The budget of 2 million Swiss francs (roughly US\$ 2.7 million) per year, corresponding to almost 1 US\$ per private household or less than half a dollar per capita of the Swiss population, was very tight. The aim of the programme was reached only thanks to efficient management, and to the help of hired specialists with experience in highly-regionalised campaigns. (Switzerland has a maximum diameter of roughly 300 kilometers, and boasts some 7 million inhabitants, or about 3 million private households.)
- What little criticism there was of the quality of the TV ads came from the nuclear and electrical communities themselves. Some said the ads were too soft, others felt they were too hard. However, professional advertising efficiency control furnished the proof that the ads are carefully tuned to actual communication needs. No-one felt "hurt", and the ads were particularly well received by "moderate" opponents of nuclear energy.
- Next summer, following the end of the fourth yearly programme which is now underway, the regional testimonial print ad campaign which started in 1995/96 will have covered all of Switzerland. The independent voice of the NPPs has been clearly established. Now it is up to utility management to decide whether NPP advertising will be continued and whether NPPs will in fact raise their newly-found voice in the forthcoming political debates about nuclear energy, which will follow the end of the 10-year constitutional moratorium in the year 2000.

* * *



XA04C1307

'ADVERTISING IS MAGIC'

Louise Haskins, Corporate Publicity Manager, BNFL, England

Now in its fourth year, BNFL's advertising strategy continues to evolve and build upon the communication achievements of previous years. The case study this year will reflect upon progress so far and will concentrate specifically on the 1998 campaign development.

It will begin by briefly reiterating the role we believe advertising plays in the communications mix and by recapping on the theoretical framework upon which the strategy continues to be based.

Last year, I presented a case study on the development of BNFL's second television advertisement and supporting media. This year, I will present opinion research data which indicates that BNFL has, indeed, begun to detach itself from the contentious debate which surrounds the nuclear industry in general. Verbatim comments from respondents demonstrate that BNFL is now being perceived more widely within the UK as a successful corporate entity.

The presentation will concentrate on the decision-making and research process which led us to select the content of our third advertising campaign. One key consideration being the impact of BNFL's merger with Magnox Electric plc and how their activity was incorporated into the overall advertising strategy.

Having established key image characteristics through describing BNFL's scientific achievements and, more recently, BNFL's fuel recycling capabilities, the presentation will outline why this time we have opted for a 'total capability' advertisement whilst endeavouring to retain the five key image criteria which are at the heart of the strategy. Specific areas covered will include our clearance of the advertisement through the UK's advertising regulatory bodies (the Broadcast Advertising Clearance Centre (BACC) and the Independent Television Commission (ITC)). This in itself will demonstrate the importance of gaining detailed substantiation and legal clearance of the advertising claims made.

Finally, we will share our experiences of each production phase, not least, the final round of focus group research and the basis upon which the media schedule is finalised, prior to the first broadcast of the new television advertisement in January 1998. The success of any advertising activity is indicated ultimately by the opinion research tracking we conduct through independent research specialists MORI. Equally, we believe that to maximise its impact, the messages should be reinforced at every appropriate opportunity whether it be to an external audience or, as importantly, to our own employees. The presentation will identify the ways in which we plan to achieve maximum continuity across all communications activity.

The case study, which will include a selection of slides and video clips, aims to follow-on from the insights of previous years. We hope it demonstrates the crucial role advertising can play in the ever challenging and sophisticated communications field we all operate within.



XA04C1308

P.R. and Advertising Campaign
„Let us stop smoking together“
/Pøestáváme kouøit - zkuste to také/

Michal Kacena, CEZ, a. s., Czech Republic

CEZ and its position - I

- The main supplier of electricity in the CR
- 72 % of production from coal
22 % of people agree to continue
- 25 % of production from nuclear
55 % of people agree to continue
(But! It is much more political sensitive.)

CEZ and its position - II

- In 1998 a huge six-year ecological programme went to its finish
- Pollution from coal power plants were going to fall at least 10 times
- The air was becoming clearer.
- CEZ wanted to persuade the public about its success and positive changes

Communication targets

- To point the succesful finishing of the ecological program and its good results
- To improve the company image
- To change the public view on a pollution issue

Communication problems

- How to make the technical topic interesting and understandable to a general public?
- How to avoid a criticism and contra-productivity of the advertising?
(costs of advertising x prices of electricity)
(simplicity of information x technical true)

The solution

- To give the information a social „added value“:
(We - our power plants - are going to stop smoking. We know it is not easy, so that we want to motivate and help you - try it yourself together with us. „Let us stop smoking together!“
- To combine the advertising and P.R. activities:
- the competition, sponsorship and co-operation with doctors, both informative and emotive publicity.

Timing

- Beginning:
November 97 - January 98
(International Non-smoking Day)

- Reminding:
May - June 98
- Finishing:
November - December 98
(International Non-smoking Day again)

Opening action - happening „The apple instead of the cigarette“

- 15 000 people directly invited to the stop-smoking competition
- The main message and the social benefit of the campaign communicated in media

The informative brochure

- Information about the ecological program
- Doctor's advises how to stop smoking
- An application for the competition
Made in co-operation with the State Healthcare Institute (SHI) /*Státní zdravotní ústav*/

Initial press advertising /*následují popisky k obrázku inzerátu*/

The main claim

The graphic symbol

The information about ecological program and appel to try stop smoking together with CEZ

The information about the competition

The official partner (SHI)

Other forms of activities in the first step

TV spot

billboards

posters

radio advertisement

press interviews and articles

Reminding press advertising /*následují popisky k obrázku inzerátu*/

The same main claim

New information about the progress in the ecological program

Advertising the second round of the stop-smoking competition

Finishing press advertising /*následují popisky k obrázku inzerátu*/

The new main claim: „The 46-billion-crown ecological program successfully finished! Desulphurised! /*Odsířeno!*/

The same graphic symbol

The information about results of the ecological program and the stop-smoking competition

Other forms of activities in the last step

- The official ending of the program at the Melnik coal power plant
- The official ending of the competition

- billboards
- radio advertisement
- press interviews, supplements and other publicity

Results - I

- 45 % of people remembered the campaign
- 80 % of them understood and remembered the main company's message
- 18,000 people took a part in the competition
- 6,500 people stopped smoking on account of the campaign

• **Results - II** /graf/

„CEZ has good ecological programmes.“ - the difference between agreement and disagreement

Results - III

- The public view on the pollution issue has changed:
- The media's focus moved from power plant chimneys to the car exhaust pipes and other „small polluters“.

Results - IV

The campaign won several awards:

- the 2nd place in the CZ APRA competition 97
- the 2nd place in the TV spot competition
- the 3rd place in the image advertisement competition

Conclusions

- Now CEZ can continue with the communication about its activities and plans on the new level.
- The inspiration for the communication about nuclear power plants: „NPPs do not smoke at all. Let us think about it together!“



XA04C1309

Can Marketing Increase the Legitimacy and Acceptance of Nuclear Waste Management?

*Osmo Kurki, Manager for Communication
POSIVA OY, Finland*

In Finland the most important decision concerning the nuclear waste management is a decision in principle. The decision in principle of the Council of State is needed for the final disposal of nuclear waste. Decision is made by the Finnish Government and then approved or rejected by the Finnish Parliament.

According to Posiva's plan we are going to apply for the decision this spring. If we succeed, a site for the final disposal will be chosen and all investigations concentrated to the selected area. For now we have four candidate areas.

The decision will be political - it is a fact. To be able to get the decision in principle approved requires that at least half of the 200 representatives of the parliament vote yes.

To get acceptance both in national and municipal levels is an exceptionally hard task. All possible communication and marketing mixes are needed in order to reach the goal. During Posiva's brief history three national marketing campaigns have been made. The results have been encouraging.

Swedish nuclear transport vessel M/S Sigyn has played an essential part in all our national marketing campaigns. An exhibition onboard has visited several harbours in Finland.

This year Posiva's marketing event was divided in three parts

- Advertising campaign
- Sigyn's visit to Helsinki, the capital city of Finland
- Expert seminars

All parts were linked to each other.

We launched the campaign three weeks before Sigyn's visit. Main message was: "Not everyone has to be highly precise with their facts. We must." The main goal of the advertisements published in national magazines and newspapers was to increase the publicity of Posiva and the Finnish solution for the nuclear waste management. At the same time we hoped to create public debate and open discussion, which is always needed in a democratic society before important national decisions. We also used movie advertising. A humoristic approach, which is always a demanding genre, was chosen.

The results of the Campaign

In the main target group, Finnish decision makers, the campaign was noticed quite well ñ every other person noticed the advertisements. Of all the Finnish citizens every third person noticed the ads. Based on advertising, people saw Posiva as a modern and open organisation which investigates best solutions for nuclear waste management.

Over 70 % thought that Posiva's campaign was better than the average public information campaigns. Also the opponents of nuclear power shared this view.

There were some negative reactions though. The most critical were people who were actively antinuclear or pro-nuclear. Environmental activists thought that the campaign underestimated the fears of the average people and was a bit chauvinistic.

The second phase of the campaign was Sigyn's visit to Helsinki harbour. The four-days nuclear waste management exhibition onboard was seen by over 4 000 visitors. The exhibition was created by swedish SKB but complemented by finnish parts and expert guidance. Almost everyone at Posiva worked as a guide. SKB's excellent exhibition got the attention it deserved.

At the time of the visit two expert seminars with international topics were organized. Representatives of media were also invited to the seminars.

During a two-week period there were over 200 articles, ten TV appearances and over 20 radio interviews concerning the seminars, Sigyn's visit and Posiva's advertising campaign. Over 80% of the stories were positive or neutral from Posiva's point of view.

After Sigyn's visit a Gallup poll was made. According to the Gallup every other Finn saw geological disposal of nucwaste as a reasonable solution. If the only alternative for the final disposal were prolonged interim storage, 62 % would prefer geological disposal.

Finnish Parliament members were also asked the same question. 150 members were reached and 103 of those were pro final disposal. 19 were against and the rest were indecisive.

I may now answer the question presented in the heading of this paper. The answer is a clear yes. Marketing can indeed increase the legitimacy and acceptance of nuclear waste management. But we have to keep in mind that marketing is only one part of Posiva's communication mix. Traditional communication is still the most important.

The situation in Finland looks very promising for the time being. In a few years time we will see whether our nuclear waste management will proceed according to the timetable - as it has this far, for almost 20 years. Next steps will be the selection of site in 2000, the construction of final disposal repository in 2010 and the beginning of final disposal in 2020.



XA04C1310

Social Advertising and Radio-Ecological Education as New Principles of Advertising Campaign

by Julia Stonogina,
RADON-PRESS, Moscow, Russia

Probably everyone would name commercial interest and high costs as the basic features of advertising campaign.

A budgetary-financed state-owned company, which fulfills government orders, does not need an advertising campaign, as it does not have to look for clients and sales markets. But if for the current social and economic reasons, a state-owned company stops receiving the required budgetary finance, it is facing an increasingly difficult task of attracting attention to its activity. If the Company is involved in hazardous production, there is a risk that it will start polluting the environment, instead of cleaning it. When the government reduced financing *Radon's* activity of radio-ecological monitoring and radioactive waste disposal, the company was confronted with two problems. The first one was to convince the government and parliament in the necessity of keeping the volumes of finance for the disposal of low and intermediate radioactive waste at the same level. The second is as follows: the scientists are well-aware of the danger the public is experiencing due to the fact that radioactive waste is not disposed in full in Central Russia. The control over the disposal of low and intermediate radioactive waste is becoming less strict. Lately, accidents among the civil population showing the lack of any knowledge relating to radiation danger (such as accidental contacts with radioactive objects, living in apartments with an increased radiation background, etc.) have become more frequent.

In 1998 *Radon* decided to conduct the public information campaign in radio-ecology.

The program consists of several key areas, which include close contacts with journalists, primarily with TV reporters, relating to the above-mentioned topic. This approach helped to promote the idea of public radiation safety to TV screens. From July to December 1998, TV clips about radioactive pollution in new residential districts located on former waste grounds and dumps came out on a weekly basis. Thus, the new dwellers became well aware of potential danger and could protect themselves against it. We also gave priority to the stories about an increased radiation background or high concentrations of radon or mercury in children's care centers and schools. We hoped that it would make the parents be more careful in choosing the places where their children had to spend a lot of time. The third popular topic with the reporters was the city markets during radiological checks of products, such as mushrooms, berries, meat, etc.

We have provided the reporters with ample opportunities to visit the facilities and escort emergency and monitoring teams to the sites of accidents. We have had to help to arrange the shooting of similar plots. For example, it took us a long time to receive the permission from the Central Bank and commercial banks to shoot the

radioactive decontamination of radioactive money kept in their vaults. We managed to convince the banks that it would not ruin their image. Quite on the contrary, it would show their social responsibility, as such money quite often goes directly to the public. Similar clips shown by the central TV channels (for example, NTV) attracted attention of foreign TV companies accredited in Moscow, who asked us to help do more shootings.

At first, *Radon* conducted these activities free of charge, as public and journalists were quite interested in them. But we realized that it was not enough. That is why *Radon* decided to conduct the campaign that would include social advertising shows and printing materials for the public. The funds allocated for this purpose are not that small for a budget-financed company.

Four play clips try to solve two tasks: to describe what is radiation and to tell the viewers about the rules of radiation safety for the consumers (radiation in consumer goods). Conducting the campaign we relied on *Radon's* statistical data (those produced by emergency services). We tried to avoid the scientific style and to make the clips funny and even parody-like (especially the talk-show) to attract TV viewers. A Russian crew headed by the young producer Mikhail Segal produced the clips.

The environmental public information TV campaign is unique in Russia. We do not know other Russian companies involved in similar information campaigns addressed to the general public. *Green Peace* information clips on the Russian TV are more likely to advertise the organization itself, instead of presenting the problem.

Since 1999, the clips are aired by the leading Russian TV companies, such as RTR, ORT, NTV, Culture, TV-Center Moscow TV Company. Moreover, the campaign is also conducted in the regions (for example, in Central Russia) through STS, AST and Ren-TV circuit agencies offering the products to be aired by the regional TV-stations. We also suggested that the telephones of the local state agencies responsible for the public radiation safety in the regions should be placed as the running lines.

The clip ends with the graphic information, which includes the contact telephones. Those who give a call may receive additional information and specially prepared materials, which include the general information on radiation and radioactivity, advice, useful organizations and contact telephones.

The third area of the public educational campaign is the ecological bulletin, which highlights radiation safety and other environmental issues of a big city. The bulletin is distributed in the government and public organizations, 50 newspapers and magazines, which use its materials for their own publications.

Evidently, a similar campaign cannot but attract attention of the respective government structures. We announce about the existing danger and we make our best to improve the situation. We hope that the government will respond to this announcement in the form of increased funding. Thus, we have a commercial interest in attracting the largest client: the government. We are spending much money to achieve this purpose. In addition to the two above-mentioned features of an advertising campaign, a significant new one arises: public benefit.

**IT'S NOT
WHAT YOU SAY,
IT'S HOW YOU SAY IT**



XA04C1311

Experts disconnected by media and politicians

Accurate and trustworthy information by experts – *an urgent mission*

Hans Ehdwall, Nuclear Safety and Training centre, KSU
Agneta Rising, Vattenfall, Ringhals

The Nuclear Power Analysis Group in Sweden

Sweden was one of the first countries outside the Soviet Union to be affected in 1986 by fall-out from the Chernobyl accident, which created an acute demand for correct information about reactor safety and effects of ionising radiation.

A precursor to the *Swedish Nuclear Training and Safety Centre, KSU*, assumed in 1986 an important role in informing the general public, by using established press channels, by issuing newsletters, booklets and videotapes, and by sending mobile measuring units to the contaminated regions in Sweden.

What started as an acute effort, has since then continued as a permanent activity, as the Chernobyl accident re-opened the nuclear issue as a subject of political controversy in Sweden. As on previous occasions in the debate about nuclear power, the arguments in the public and political debate were largely of scientific or technical nature, and very often grossly erroneous. Such technical false conceptions have often found their way to leading decisions-makers in politics and mass media.

Corrections and refutations of this kind often require considerable expert knowledge, a scientific attitude but also a pedagogic interest. Often time-consuming research into particular issues is needed. The traditional information departments at the utilities are not very well equipped to handle such situations.

The Analysis Group on nuclear power, attached to KSU, has therefore, on behalf of the utilities, been given the responsibility to generate factual information on nuclear power issues that might arise in the media or in the political and public debate.

The communication mandate of the Analysis Group covers nuclear safety, the effects of ionising radiation, and comparative risk assessments. It does not include economy, energy requirements, nuclear waste or utility policy issues. Within its mandate the Analysis Group has a freedom to operate with independence and on its own merits.

Public debate

The Analysis Group disseminates its material mainly to key recipients – decision-makers and moulders of public opinion such as politicians, journalists who cover energy issues, energy experts and the education community. One important task is to take an active part in the public debate in newspapers, radio and TV.

Other important targets are the utilities themselves, whose staff often is exposed to unsettling accusations and rumours on issues outside their personal experience.

It is important that all information from the Analysis Group is generated with great accuracy and based on a scientific approach, but in a form that can easily be understood. Furthermore it need to be presented at the right time without delay. This can only be reconciled by means of broad competence, available on short notice, and an almost continuous exchange of ideas between the experts in the group.

The Analysis Group consists of a few persons employed by KSU and a group of expert consultants. In total there are now 10 members of the Group and they come from within and outside the nuclear power industry. The Group represents long-standing experience of nuclear power plant operation, reactor safety analysis, fuel cycle issues, health physics, and radiation biology, as well as of editorial work. Most of the members have full time jobs beside their engagement in the Group.

The members are chosen on their personal merits rather than as representatives of the organisations.

The Analysis Group convenes weekly by telephone to discuss current events and decide on appropriate measures. Its main communication channels are the newsletter „Bakgrund“ („Back-ground“) and fact sheets, which are issued in response to questions arising in the debate. A tool, which has been growing in importance during 1998, is the homepage, www.apec.se.

The Group also receives requests for status report and lectures on technical issues from administrators, political organisations, trade unions etc.

The Swedish Nuclear Power Analysis Group is well known and established in the Swedish political debate on nuclear issues. Many representatives of mass media, the scientific establishment, of political parties and trade unions, have a great confidence in material published by the Analysis Group.

Opinion polls

Since 1987 the Analysis Group has arranged opinion polls on the nuclear issue. Some of the questions have been used in long series, which is looked upon as the standard opinion poll series about the nuclear power policy in Sweden.

Today the nuclear power in Sweden is still an open question. While the politicians maintain that they are simply reacting to „public unease“, opinion polls clearly demonstrate that, in reality, this unease is not a widespread phenomenon. Swedes place nuclear power very low down on the list of issues, which evoke a sense of anxiety. A clear majority, women included, wants to postpone the nuclear phase-out.

Despite the positive attitude towards nuclear power, the general public has consistently underestimated the positive attitude of researchers – probably because they have been silent in the debate but also because the mass media has not actively investigated their views. Such observations have been published in the US (1), Germany (2) and Sweden (3).

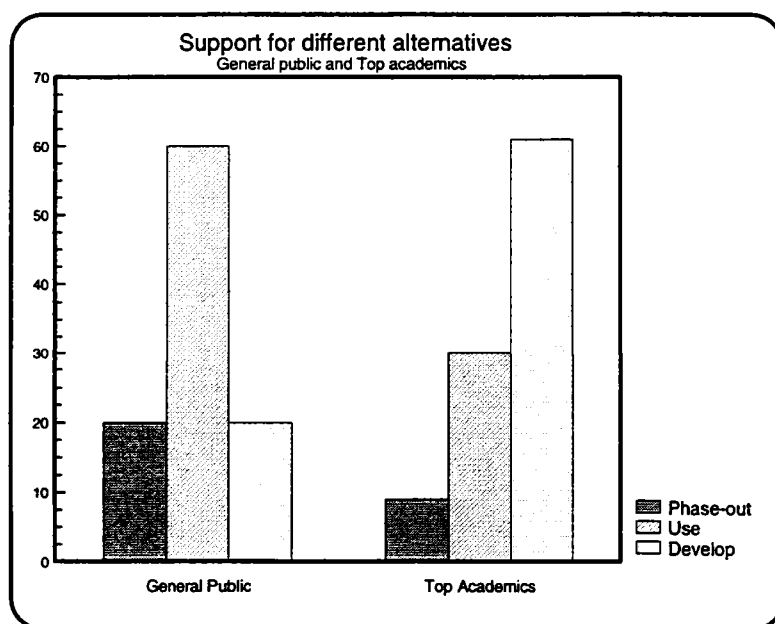
Experts disconnected by media and politicians

In a recently published Swedish opinion poll among independent experts in science and technology (3) it was shown that 91% want to use the existing reactors as long as they fulfil the safety requirements. The independent experts are very positive to nuclear power, but this is not known to the public.

In the report, the general public's opinion on nuclear was compared to that of independent experts. The authors, Professor Jörgen Westerståhl and Assistant Professor Folke Johansson, University of Gothenburg, also analysed the Swedish energy policy in the light of the fact that the Swedish nuclear power programme was built up through a close co-operation between politicians, scientists and the industry. The politicians who have now decided to start phasing-out nuclear power are acting of their own.

To find out the attitude to nuclear power among the independent experts the poll was made at Swedish universities. All full professors at the science and engineering faculties/universities, in all 627 persons, got a questionnaire. The answer frequency was 60%.

The diagram below shows the main results of the study. The support for nuclear power is good from the general public, but the independent experts, the top academics are extremely positive, especially to further development of nuclear power.



In another part of the study it is shown that the general public has high confidence in experts and low confidence in government and politicians. **But the general public has a false perception of the experts' opinion on nuclear.** The general public believes that only 31% of the experts want to „develop nuclear and if needed to build new reactors“, but in the real world 61 % of the experts support the development of new nuclear power units. The general public believes that most of the experts, 56%,

want to „use nuclear until the existing reactors are closed because of safety reasons“, but in reality only 30 % of the experts had that opinion.

The report discusses reasons for the general public's misperception of the attitude by the experts to nuclear power. It is shown in the report that the main reason for this is that the media conveys the wrong message that the experts are not very positive to nuclear power.

When it comes to information about energy and nuclear power, 87% of the general public has very high/rather high confidence in experts in natural science and technology. Members of the government only get 36% confidence and politicians in general as low as 21%. The authors state, that is serious for the society that the general public does not know the expert's view on nuclear. This leaves the nuclear arena open to political party tactics.

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XA04C1312

Gödel's Theorem and Leapfrog

**by Mark Anthony Lloyd
Executive Chairman
The Achievement Management Group
South Africa**

The ability to generate electricity from nuclear sources derives from the same human need as that which gave rise to the invention of the wheel, the first deliberate use of fire and the first harnessing of an ox to a plough - the need for technology. The first human who turned from hunting to ploughing began to change the Earth's environment. He was the first agricultural pollutant. We could not undo him, even if we wanted to. For us he is a hero, not a criminal, because he represents the beginnings of civilisation.

We in the nuclear power industry consider ourselves to be at the forefront of civilised progress. We form a highly structured, highly regulated society with clear, rigid rules about how to operate a nuclear facility. We know how the atom is split; we seem to know everything there is to know about the effects of radiation; and our range of precautions is vast. We are reasonable, rational people with reasonable, rational intentions.

Yet, all too often, even we ourselves don't believe our public relations statements about nuclear power. Why is this?

Let us approach the question by considering Gödel's Theorem.

Gödel's Theorem is extremely complicated mathematically, but for our purposes can be simplified to the maxim that one cannot validate a system from within that system - just as one cannot measure the outer dimensions of a house while one is confined to the inside of the kitchen.

Scientists, especially those in the fields of astronomy and nuclear physics, have long realised the implications of Gödel's Theorem. The experimenting scientist can no longer be considered to have an entirely detached, objective overview of his experiment: he himself is one of the many variables that may affect that experiment.

As the physicist Joe Rosen puts it, "Objective reality, which science guides us to believe in, itself lies beyond the domain of science... because it cannot be proven."

What the physicists have known all along, we communicators for the nuclear industry have yet to discover. We have forgotten that we too are "confined to the inside of the kitchen" - that we too belong to the human race and are as emotionally frail as those to whom we communicate.

For human beings are emotional creatures. They are surging collections of psychological hungers wrapped up in a terribly thin layer of epidermis. The parts of human beings that are purely rational are minute, and deeply buried beneath a bewildering array of electrical impulses that tell us more about how cold or hungry we are than they do about how to split the atom.

How can we, as communicators, still use words like "minor" to define a certain class of nuclear accidents? In our "objective" opinions, the contamination from an accident may be minor. But in the emotional opinions of our fellow human beings, any contamination whatsoever may represent a disaster of life-threatening proportions. No communications methodology can claim to be objective, let alone effective, if it uses words like "minor" and "incident" to describe something that is emotionally terrifying.

So, if we are going to communicate about contamination, let us communicate plainly about it. Let us not communicate in the "objective" jargon that relies on terms like "minor incident". What does "minor incident" mean to the emotional public? That only two people died instead of seventy? If the contamination really is minor, its radiation levels are too low to harm people. Let us state plainly, then, that "radiation levels are too low to harm people".

The people to whom we must communicate look to us, who officially know everything about our industry, to comfort and reassure them. And we forget that we can only comfort them by addressing their emotional needs, not by demonstrating our chilling "objectivity".

Let us try something completely new in communication. Instead of looking for incremental rules which will help us marginally differentiate the way we communicate about minor or major incidents, let us leapfrog across "objectivity" to meaning and relevance. If we truly believe that nuclear energy is a good thing, this leap should not be difficult.

Finally, if we as communicators are not prepared to be meaningful and relevant - not prepared to leapfrog beyond weasel terms like "minor incident" - what does that say about the kinds of people we believe the nuclear community to be? Are nuclear people a group apart, divisible from the rest of the human race by their evil?

In fact the nuclear community is a living, laughing, normal part of a whole society; and is moreover a good contributor to the technological progress that society demands. When we ourselves recognise this, we will start to communicate nuclear issues in the same language as the rest of society. We will start to speak plainly and convincingly, and our conviction will leapfrog our audience into being able to believe us.



XA04C1313

Leave your logo at the door :

A (Internet) discussion group with a difference
on
the interaction between nuclear and fiction

Alain Michel – The Copper Beech / Le Hêtre Pourpre
Claire Maden and Ted Mole – Uranium Institute

The Apocalypse Syndrome

Remember at last year's PIME we presented a brief analysis of the image of nuclear activities in fiction that was mostly a catastrophe picture: exploding reactors, stupid and selfish managers, proliferating bandits, etc. We concluded that these images certainly had an influence on people's opinion and thus on politicians' decisions.

We felt that against emotions, a rational attitude presenting technical reports was no solution. We asked whether we should help writers or film makers to disseminate stories on what would happen without nuclear: stories of overpopulated towns without electricity or whole country blackouts. Would that be an efficient attitude ?

We had more questions than answers. Thus we suggested that a seriously organised study of the potential of a well-planned program of fictions would be needed. A small group started working and soon found out that the first thing to do was, as usual, to collect the information on what had been published and previous work done to analyse the situation.

The need to create a Forum

To collect data, we thought an Internet Forum would be the most immediately efficient solution. Thus the site of the Uranium Institute hosted „The Primary Circuit, the Internet pub that feeds your mind“. The idea was to have a discussion site for ideas on nuclear energy, the arts (particularly literature) and public perception. From the first days, we announced that „unfortunately you'll have to bring your own drinks but a real get together with real drinks is planned for PIME'99 in Avignon“. So there we are ...

We wanted to investigate the treatment of nuclear energy in literature and cinema, to focus as much as possible on the civil applications of nuclear energy while „at the same time trying not to stifle or suppress anything which contributors may feel relevant“.

We insisted and still do that the purpose was to have a forum for „individual not for corporate views“, thus the motto: „leave your logo at the door“. The question we are dealing with is more related to emotions than anything else: corporations have no emotions. The Internet and emails still allow fast and personal exchange.

The first steps

The largest body of nuclear related literature is that now known as Survivalist fiction. These works describe what will happen „after the bomb“; they are an immediate fallout from Hiroshima and Nagasaki bombings. There are dozens of such books and films: should we include them in our study ?

Although we – in the nuclear industry – would like to forget our dreadful origins, the public does not. The separation between military applications and „Atoms for Peace“ was never a fact in people's mind. It was one of our numerous communication mistakes to avoid talking about this situation. While these books should not form the core of our studies, they are an inescapable context. The bibliography does exist (Paul Brians – *Nuclear Holocausts: Atomic War in Fiction* – 1986). The impact of this literature has, among others, been studied in a remarkable book : *The Rhetoric of Antinuclear Fiction, Persuasive Strategies in Novels and Films* (Patrick Mannix – Lewisburg 1992).

We have not found such a bibliography for works of fiction related to nuclear energy or corresponding studies on the perception of the public and the influence of fiction. It remains to be done. We thought we could collect titles, bibliographic data and opinions in the Pub. We obtained some and a preliminary list will be distributed during the PIME 99 conference.

We also found that some more fundamental existing studies could be related to our preoccupation. An example is *Fantasy , the Bomb and the Greening of Britain: Romantic protest 1945-1980* (Meredith Veldman – Cambridge (USA) 1994). The book charts the development of the green movement in the UK and shows the chain of connections, which take it back through CND, pacifism and early socialism to the anti-industrial Romantics of the late 18th century.

In nuclear communications, we have always accepted the supremacy of enlightenment, leading to an over-dependence on reason, forgetting the importance of imagination and emotions in our present so-called post-modern society. We need to understand the roots of post-modernism which can be found already in the early 19th century works of Blake or Morris, stressing over-dependence on reason and heavy industrialisation as the cause of many social evils.

The roots of the antinuclear emotions are deep in our hearts. Fiction which paints technology and science as evil, depraved or anti-human has been around at least since the early 19th century and as technology and science have advanced so that fiction has developed, punctuated by occasional works which sought to give a more positive image. Using fiction to plant new emotions that would convince people to „love“ nuclear is not a clear and easy task. Finding paths may be supported by some „lateral thinking“, using examples outside the nuclear world. Studies like *International Relations on Film* (Robert Gregg – Boulder 1998) may give us ideas.

Another important fact that appeared clearly to us was that the impact of small allusions, brief paragraphs or a far-fetched but present background in otherwise non nuclear stories, have probably a greater impact than most fiction entirely related to nuclear energy. Who read *Burning the Apostle* (Bill Granger – 1993), the story of a failed attempt to burn and explode a nuclear plant in the USA ? But the way plutonium, reactors and nuclear radioactivity form a dangerous background to *Cause of Death* (Patricia Cornwell – 1996) influences far more people as the author is such a popular thrilling novel writer. And there are more people dreaming of the

fantastic maddening effects radioactivity could have because they have seen *Godzilla*, than people enjoying fruits, shrimps or pepper delivered fresh and clean to their homes if they were told in nice stories how they were irradiated.

Where do we go from here ?

Until now, the Pub has not been a success. Not many visitors opened the door and entered in the discussion. Possibly in such an emotional subject, virtuality is not favourable. Also, like for any human group, people will not join if they are not invited and it takes time to inform them that a new pub is open.

Is this method adequate to start a discussion ? A difficulty is that to make it lively, participants have to come frequently. Most of the potential participants are loaded with professional work and the rest of the time, they like to do something different. To reach them, it would probably be more efficient to use some newsletter, „circular“ email for example.

Thus in 1999, we will circulate list of books on those subjects to anyone who gives us an email address. What do we expect in return ? We want to know if you read any of them and what you personally think about them. We hope that it will encourage the participants to give us new titles, especially fiction that has nothing to do with nuclear but expresses ideas on the subject. Those are most difficult to collect because you can only find them by chance. A very recent example: *Le Poulpe* is a French film, based on very popular novels and the whole story is a thriller around a mysterious boat with an unknown illegal cargo. Only at the end do we learn, incidentally, that the „cargo“ is irradiated African workers used to repair a damaged nuclear reactor core. It is never mentioned in reviews or publicity for this film.

The questions we ask are:

- How have fiction writers treated nuclear technology ? How has the coverage changed over the years as the industry has evolved ? How does this fit in with the coverage of science and technology in general ?
- Does such treatment influence perception of nuclear energy issues ?
- Does fiction reflect the issues of our industry, or broader issues that impact less directly ?
- Is the impact felt more in one generation than another ? Do books written years ago still have influence today ? What about films ? How do influences develop over time ?
- What has influence in different countries or cultures ? Are influences international ?

What we are trying to do is to get a clearer picture of the cultural context in which nuclear communicators have to operate. We might after collecting for some time, find new ways, less formal perhaps, to raise people's emotions that are more favourable to nuclear energy use. Because in the end, emotion plays a great role in our decisions. Listening to Jorge Semprun recently interviewed (TV5, 1.12.98) on World War II holocaust, we noted that „Le témoignage ne suffit pas: pour être cru, il faut passer par l'artifice de l'art“.

Now join our team as you are, leave your logo behind.



XA04C1314

Women and nuclear energy: in Asia and right next to us

Agneta Rising

President, Women in Nuclear (WIN)

Two missions will be described in this paper. The first is how one organisation in South Korea has build up a network with 8000 women and engaged them in informing schoolchildren on nuclear power. The organisation WIIN, Women Interested In Nuclear, is consisting of 15 local branches, they organise workshops and studytours for women, mostly housewives. There is in Korea by tradition a great engagement by the mothers in their children's education. After WIIN has educated the mothers they go to school, helping the teachers with information and background material on nuclear as well as taking an active part at the lectures.

WIIN is an associated organisation to WIN, Women in Nuclear. WIN is aiming at raising the understanding of nuclear and radiation and applied technologies. There are special communication programs designed to reach women with activities such as seminars, workshops and studytours. These programs are always designed taking into account different cultures. While the majority of the women in the general public have non-technical background, the emotional arguments against nuclear are quickly spread by international organisations through media and with modern communication tools.

The other mission is finding out what women, with a non-technical background, but still some connection to the nuclear industry think about nuclear and radiation. Which are their concerns and questions. This was done during a unique focus group, live with a big audience. The live focus group consisted of women with maybe a father or husband working in the nuclear industry, maybe living close to the nuclear industry or just started working as journalist with the nuclear sector. The first step in communicating is to listen. This was practised during this session and we as representatives of nuclear professionals got many questions as well as proposals on what is important to know about nuclear and radiation and in the process we came close to some of the important messages that was needed. Also how and in which way they wanted the answers to their questions was found during the dialogue. Thanks to the first live focus group some reflections and conclusions will be presented during PIME on communication with non-technical audiences.



XA04C1315

The Young and the Restless

Emmy Roos -- ETCetera Assessments LLP, USA

The Younger Generation

On December 13, 1997, the INSC published the "Report of the Younger Generation of Professionals within Nuclear Science and Technology". This report is the result of the discussions of a group of the Younger Generation (YG) of professionals in Nuclear Science and Technology. The discussions were conducted through e-mail during 1996 and 1997 and they represent a selection of viewpoints and concerns on well defined principle issues.

The Group was composed of under-35-year olds selected to represent wide global interests. The Group started by selecting a set of Nuclear Science and Technology topics within which discussion could be conducted. Each member of the group became a rapporteur for one topic. I was the rapporteur for the Global Public Acceptance topic. This paper is based on the conclusions on the discussions on the topic and the ideas that emanated from it.

Global Public Acceptance

The major conclusion in the Global Public Acceptance section of the report was that the industry needed to provide information to the public on all aspects of nuclear science and technology. We should do this, not because we cannot afford not-to, but because we have a passion for nuclear energy and we want to share this passion with the public.

Public Understanding, let alone Public Acceptance, can only be created through Public Attention. But public attention in a world with an overload of daily information, is a matter of survival of the fittest, or the most passionate. I could hold a select and lonely press conference to distribute a leaflet on radiation and how it is part of our habitual environment. Alternatively, I could go to the weekly local market, to show the public what radiation is, by attracting by-passers to make their own cloud chambers and take them home. Taking the message to the public shows more passion than asking them to come to a conference.

Our opponents are very good at getting public attention. I just need to say the magic word Greenpeace and we all immediately think of "Save the Whales", "Stop Nuclear Power", and "Remember Chernobyl." What message would be recognizable in promoting Nuclear Science and Technology?

We recognize their statements because:

1. they are a globally recognizable organization operating under one name;
2. they are very passionate about their statements: they even chain themselves on train rails, or chase boats in rubber canoes to make their point, and;
3. they are uniform in their message: whatever the anti-nuclear action is or wherever it takes place, they always use the same words: "Stop Nuclear Power".

However, when looking for a similar magic word or phrase in the nuclear industry, it is very difficult to find one. One could settle for "Our nuclear society" as the magic phrase, but it does not leave an equally strong message FOR nuclear energy. Does this mean that the nuclear industry is as boring as my high school science teacher -- whom I always suspected of having died 2 years BEFORE I had him as a science teacher?

The nuclear industry seems to have all the required ingredients: occasional pro-nuclear events, openness towards the press, politicians and the public, leaflets, brochures, and invitations for company visits. The only thing we lack is a recipe for success: and that recipe is a Global Pro-nuclear Campaign Organization.

- The organization should be passionate and willing to go to the public. We need to add spice to our ingredients. Baking an apple pie at home will never get any public attention or make it to the news, because, just like (nuclear) energy, baking is part of our daily life and not really interesting. If, however, a group of people bakes a giant apple pie in the town's market place, to break the world record, you will have public attention.
- It should be uniform in its message. Every nuclear organization and every firm has its own way of phrasing its ideas. At best, they are just slightly different, at worst, they are each other's opposite. Furthermore, all of these different messages try, separately, to compete with one giant uniform anti-nuclear message. In trying to do that, we are truly "fighting windmills"
- It should have a name that people recognize, all over the world. It should be simple, but certainly not another acronym. It should be funky, catchy and easy to remember. How about "Radiant", or "Sunshine"?
- The organization should represent a few key thoughts in the public's mind.
- It must be self-supporting through sponsorships and members. To make such an organization work, it is important that the group is shown to be independent from existing nuclear industries.
- It should target the young public. The young public is a very important group, especially since they are the main target group of anti-nuclear organizations. "Young" is - of course - everyone who is young at heart and willing to see change.

The organization would consist of an international head-office, and national and/or regional offices that operate as franchises. The international office would supervise the organization and would be responsible for coordinating international campaigns, carrying out international events and coordinating a uniform global message. The franchises would contribute financially to the international organization, run national and local campaigns, participate in international campaigns by passing on the main organization's message, and contribute to new campaign development. It should convey the same message time and again

The strength of the organization would come from the people involved in it, its members and its global recognition. The people involved in it can easily be found, because there are a lot of "young and restless" people in the nuclear industry that are willing to volunteer time and enthusiasm such an effort. The members would be gathered through schools, youth

organizations, etc. The international reach would be accomplished through the combined strength of national/regional offices.

The young generation is vital in creating such an organization, because the way to attract young people is through young people and there are a lot of "young and restless" people out there that are willing to put a lot of effort in such an organization.

Main Goals

The organization's main goal would be to promote all aspects of nuclear science and technology as necessary to society's health, well being and development. This would include the following activities:

1. *Public Communication* - through regular newsletters to members, a website, public displays (in zoos, libraries, train-stations...), summer camps for kids, contests, a nuclear game, etc.
2. *Media Contacts* - by actively becoming the first available resource for nuclear information in every town and city,
3. *Governmental Relations* - in keeping decision makers and their staff aware of the benefits of nuclear science and technology,
4. *Campaigning* - through the organization of sports, entertainment, and cultural events;
5. *Fundraising* - by creating a membership through advertising, taking part in public events, parties, and the sales of products etc.
6. *Providing an Activist Message* whenever and wherever possible. This means attending public interest meetings and the like and proclaiming the message.

A proposal for the formation of such a group will be presented at the coming International Conference of the Younger Generation that is being planned for Bratislava, Slovakia, in 2,000. The new millennium is an appropriate time to do things differently.

Conclusion

Public understanding, let alone public acceptance, can only be accomplished by getting public interest and public attention first. The industry's attempt to get public interest is divided, formal and dull. It is based, not on passion, but on a business rationale. It offers, therefore, no real competition to the passionate and consistent efforts of anti-nuclear global organizations like Greenpeace. However, if Greenpeace can do it, there is no reason (no excuse) that we, the pro-nukes cannot do it as well.

Don't get mad, get even ... with passion. and we intend to.

WORKSHOP HANDLING THE MEDIA



MEDIA TRAINING – THE BRITISH ENERGY WAY....

BOB FENTON - Chief Press Officer
British Energy

How do you prepare someone for their first experience in front of a television camera? Where do you start, and how do you ensure that you get your points across as best you can? The answer, as with most things, lies in planning and preparation. The person who arrives at the TV studio without thinking through what he is going to say, or what points he wants to make will find the experience daunting to say the least.

During the course of the presentation we will look at:

- What to consider before agreeing to an interview in the first place
- Your role at the interview
- The various types of interview
- How you set about preparing yourself
- Techniques to use during the interview

We shall also consider the changing nature of the media and the pressures that are placed upon a reporter to get the story back to base.

Workshop: Handling the Media – Basic Training for Newcomers and the Young Generation

Statement: Understanding the Working of Journalism and Acting Accordingly May Help to Avoid Information Disasters.

Otto Wildgruber, Communications Consultant
Am Tiefenweg 12, D-91077 Dormitz



XA04C1317

For business, there is good reason not to tell everything. For journalists, there is good reason to report almost everything. Especially, if they can frame a story of big business against the powerless citizen.

Besides other industries, the nuclear industry has been an awarding target for politically inspired quests for gaining power.

One of the reasons for attacking this industry is its inability to think in political terms, its desire to educate everyone – even those who are not at all interested in knowing the facts. Therefore, this branch promoted the goals of its opponents. If someone doubts this statement, I would recommend to look at the present situation: despite costly "information campaigns", the opposition is still gaining ground. Why do we see almost no changes but another silly approach – a lot of efforts to please our enemies?

Why is it so easy to condemn industry? Why arrived our enemies, the enemies of the average citizen, at powerful frames like "business interest sacrifices human interests"?

Just to give you an idea on how this framing works, I want to distract you from your daily business and draw your attention to a completely different industrial branch – the airplane manufacturers. They too are "big business" and , therefore, prone to suffer from attacks of the "good-doers", the "all-knowing" new totalitarians.

In his novel "Airframe", Michael Crichton put it convincingly - I quote:

"So a good frame had nothing to do with the past. Fred Barker's damning list of prior incidents was actually a problem, because it drew attention to the fading, boring past. She'd have to find a way around it - give it a mention and go on.

What she was looking for was a way to shape the story so that it unfolded now, in a pattern that the viewer could follow. The best frames engaged the viewer by presenting the story as conflict between good and bad, a morality story. Because the audience got that. If you framed a story that way, you got instant acceptance. You were speaking their language.

But because the story also had to unfold quickly, this morality tale had to hang from a series of hooks that did not need to be explained. Things the audience already knew to be true. They already knew big corporations were corrupt, their leaders greedy sexist pigs. You didn't have to prove that; you just had to mention it. They already knew that government bureaucracies were inept and lazy. You didn't have to prove that, either. And they already knew that products were cynically manufactured with no concern for consumer safety.

From such agreed-upon elements, she must construct her morality story.

A fast-moving morality story, happening now."

Unquote.

This was exactly the pattern after which three recent stories unfolded: Monju, Sellafield and transport of spent fuel. Three stories which tremendously damaged the reputation of the nuclear industry.

Reporters are not interested in context. They are interested in a story. To reveal that business had hidden something - especially if that can be linked to radiation - is almost always worth a story, regardless of its real significance. This all the more as the freedom of expression makes it almost impossible to hold journalists responsible for damage.

I quote once again from Crichton's novel. Quote:

"This situation sounds very lopsided. We make a superb product, and all the objective measures of its performance demonstrate that it's safe and reliable. We've spent years developing and testing it. We've got an irrefutable track record. But you're saying a television crew can come in, hang around a day or two, and trash our product on national TV. And when they do, they have no responsibility for their acts, and we have no way to recover damages."

Unquote.

In my almost 25 years of experience in PR-work, I heard a lot of complaints about the media. The trouble is that a great deal of industry people have only a faint idea on how the media work – and many journalists have only a rudimentary understanding of business. Therefore, misunderstandings – on both sides – are bound to happen.

I do hope that this workshop will contribute to an improved understanding of the media which could improve our standing in the media.

First remark: medium is not medium – there are huge differences between:

- Print media
- Radio
- Television, and
- Internet

Each of these different media has its own characteristics, and therefore, needs to be approached in a different way. I think, Bob Fenton will briefly address this topic.

Some common characteristics are:

1. Political correctness of the topic is important. Being politically incorrect will in the long run dry up many information sources, and have other unpleasant consequences.
2. Frames and hooks of the story should not need explanations but fit into zeitgeist beliefs.
3. The story shall contribute to the bottom line of making good copy.
4. Alarmist news get more attention from the audience than reassuring ones.
5. Actuality is of great importance.
6. Most journalists are educated to not believe in business.
7. Facts almost don't matter. If you don't believe, listen to what Terrence Corcoran reported in Financial Post on December, 26, 1998: (The Canadian environment minister) Ms. Stewart said that, 'as minister of the environment, I am very worried about global warming,' which for a politician isn't saying much. Politicians are habitually 'very worried' about one thing or another. The trouble starts when they use their power to fix problems they're worried about, even if the problems don't exist. Ms. Stewart said she's prepared to do exactly that. 'No matter if the science is all phony,' she said, 'there are collateral environmental benefits.' In another statement quoted by the Herald, Ms. Stewart gave another reason for adopting the religion of global warming. 'Climate change [provides] the greatest chance to bring about justice and equality in the world.' Here she gets closer to the core motivation of some of the leading global warming activists. Where socialism's

attempt at a global redistribution of wealth ended in economic catastrophe, global warming is being wheeled in as the next new economic crusade.

The most powerful medium today is still television. Therefore, I want to make you acquaint with some remarks based on Marshall McLuhan's statements on the electronic media. I found these remarks in the book "McLuhan's Children: The Greenpeace Message And The Media" by Stephen Dale. Here we go:

"Add to this the fact that important decisions are increasingly being made not by elected governments but by international tribunals sheltered from public pressure and the democratic process, and McLuhan's "global village" begins to look like the fiefdom of transnational corporate power, from which voices of dissent have been banished. While citizen groups continue petitioning increasingly weak national powers, the real decisions are being made outside the national arena."

"McLuhan's central belief was that any new technology - operating as an appendage to the human body - changes both the people who use the technology and the world it operates in."

"Bob Hunter, a founder of Greenpeace, says: "One of McLuhan's big lines was 'It was time for intellectuals to get out of the ivory tower and into the control tower,' and the control tower seemed to us to be the studio and the newsroom.""

"Greenpeace's success at inserting its own bottom-up environmental message into the global flow of TV news is not only testament to the organization's practical cunning, but a validation of McLuhan's view (which is clearly supported by the evidence presented by journalist Roger Bolton) that electric media are driven so much by their technological characteristics that content-selection becomes an almost unconscious process."

"But such interpretations are probably only half the story: the idea that the technology itself is in the driver's seat - exerting influence on format, style, and therefore on content - seems to be borne out by the experience of Greenpeace, which placed its bets on McLuhan's more mechanistic, less ideological interpretation of the medium, and seems to have come up a winner."

"When McLuhan wrote that 'the medium is the message,' he meant partly that television (among other electronic media) is not so much a vehicle for conveying information or expressing particular thoughts as it is a self-contained and dominating entity whose intrinsic characteristics rearrange how we process information, realign old relationships, and totally skew our view of the social landscape."

"What followed was a classic exposition of the relative powers of television versus print cultures - indisputable proof of McLuhan's assertion that in a battle between the direct, visual assault of television, and the cerebral, expository processes of print, television would win every time."

"This parallels the attitude of their mentor, McLuhan, who often noted the electronic media's capacity for breaking down the tradition of Western logical thinking but who, once again, refrained from passing judgement on that trend."

"McLuhan believed that Western society was falling back into an acoustic space as it was being bombarded with random information and impressions, transported through the electronic media simultaneously and in no particular sequence. This sensory deluge, McLuhan believed, was re-creating in Western society a mode of perception that had existed in preliterate times - in a time when tribal people received information from nature using all of their senses and perceptual faculties; in a time before humanity came to favour intellect and the visual sense that drew information up off the page, to the exclusion of other senses."

"Thall (an assistant to McLuhan) ... he reminds me that, after all, the medium is the message, so content is entirely beside the point. It's what the technological process does to us and says to us that's important. 'The content, McLuhan used to say, is like the juicy bit of meat carried by the burglar to distract the watchdog of the mind. McLuhan was the first to find that the media have no content; the user is the content.'"

So far Stephen Dale.

Given this situation, what can we do to avoid unnecessary damage to our reputation and huge expenses in trying to set the record straight?

First of all, our industry finally has to recognize that - regarding information policy - not the beliefs of CEOs but the experience and knowledge of PR people count.

A Greenpeace statement reads: "We don't let the campaigners talk to the agencies," says this engaging and energetic woman with short, straight-cropped brown hair and a surprising sense of calm. "Because the campaigners will say, 'It's a wonderful, fantastic, amazing action,' and of course it isn't - it's a banner hanging on a tree or something. So we're a filtering system, and the agencies really appreciate that. Otherwise they just have mad people talking to them all the time. It's really crucial that they have someone to talk television language: have you got all the right shots, cutaways, what's on there, where are you shooting from? You know, a proper conversation. But a campaigner doesn't know the difference between a high-8 and a Beta, so it's hopeless."

Secondly, PR people can only do their job if they are informed about everything which could affect the reputation of the company. In reality, this means to have the chief PR officer on the board of directors. And, the chief PR officer has to make the final decisions about the information policy - no one else!

Thirdly, we must pay much more attention to the problem of hidden messages. What do I mean by that? I will give you a few examples:

- "We have to improve the safety of nuclear facilities" translates into "the existing facilities are not safe enough".
- Prof. Carlo Rubbia's proposal for an innovative reactor to burn nuclear waste translates into "Otherwise, nuclear waste cannot be disposed of safely".
- Explaining the barrier system of a NPP instead of explaining the basic consideration - make the chain as long as reasonable - translates into "Such a lot of precautionary measures, and still not 100 percent safe - hell, that must be really dangerous".
- Inviting prominent opponents to our conferences or public meetings translates into "The opponents really must have made some points - otherwise these arrogant industry people would not waste their time by listening to them."

There are a lot more of such examples. But the few should suffice to make clear what I mean by "hidden messages".

Fourthly, we have to become more skillful in bringing across our messages in the print media. In this respect we can learn a lot from good science journalists. Deborah Blum, professor of journalism at the University of Wisconsin-Madison, said in her testimony before the US House Science Committee on May 14, 1998. I quote:

"Science and engineering have to be approachable. We have to translate jargon, simplify when appropriate, use analogies when they work. When I'm doing this - I'll check the fairness of my analogies with the researchers involved. I wrote a story once about the apparent discovery of an peculiar high-energy physics particle, tentatively dubbed the leptiquark. I framed the whole story in terms of physics playing the building blocks and the shock effect when suddenly a mysterious block turned up in the bucket. I ran this by the physicist in charge of the experiment and he was perfectly happy with that comparison.

I try to make things vivid but I don't write down or condescend to readers. Most people are smart enough to get these concepts. My responsibility is to make sure that my translation is good enough to get the basic point across, not to beat the reader to death with technical details which are not necessary to understanding.

The second point of that story is that science journalists - like political journalists - should be confident and comfortable in approaching their sources. This is a serious problem, especially for those not trained in science journalism. We've had too much a legacy in this country of

science-is-hard and you're-not smart-enough to get it. We can't afford to repeat that lesson in newspapers."

Unquote.

Fifthly, we should forget the silly approach "don't wake up the sleeping dogs". The recent case with the contaminated transport casks should have convinced even the greatest skeptic that holding back information that could be sold as having some impact on the public at large will – sooner or later – end up in a disaster. This is especially important as on one side industry's opponents are increasingly part of governments, and on the other side disgruntled employees are a natural consequence in a stagnant or even declining industrial branch.

Sixthly, instead of trying to answer every question we should start to question the soundness of the proposals of our opponents.

Seventhly, we should agree upon a dozen of convincing arguments for nuclear power, and then repeat them time and again. Constant repeating is an indispensable element of politics, and nuclear power is already since quite a time a political and not a scientific issue. If you do not believe that this will work I would recommend to look at the gas-industry. Or, if you like a negative example – look at the PVC-industry.

Eighthly, get to know your opponents. Not in order to fight them but in order to learn from them, and to ignore them in the public – whenever possible.

Ninthly, we have to become much more professional – especially in the field of television. It is a disgrace that TV stations are well-stocked with footage of our opponents but lack good material from our side. Maybe, providing good footage could become an additional task of NucNet.

Tenthly, we should recognize that success depends to a great deal on the capability to see things from the point of view of those we want to address. That is also true for Internet appearances.

Let me conclude with a strong statement. If the nuclear industry does not make decisive changes in its information policy, it will experience much more information disasters of the kind I mentioned in the beginning.

Thank you for your attention to this lengthy statement. I hope it provided enough food for thought to make this workshop a lively and fruitful one.

**INSIDE OUT
COMMUNICATIONS**

—

**COMMUNICATING
WITH OUR OWN STAFF**



XA04C1318

TURNING UP THE POWER OF INTERNAL COMMUNICATIONS

Andrew Craven-Howe, UKAEA, Harwell

Introduction

Of all the things that separate human beings from the rest of the animal world it is that we are addicted to communication. When we are deprived of human interaction we show visible, and often permanent, signs of distress.

There can be few areas of human endeavour which are not reliant on high levels of communication which I will define as the creation of understanding.

It is not uncommon for people in our profession to spend up to half of each working day in two-way conversation with colleagues.

Beyond the office we see that everyone is an avid consumer of passive communication. Despite watching more television with each passing year, most of us read more now than any generation that has preceded us.

The communicator's dilemma

A common questions asked in any organisation - especially when budgets are being set is: *why do we need internal communication?* And there are the more worrying ones: *I don't see why we can't cut the size of the company newspaper, we never seem to get the workers on our side.*

Defining our objectives - what we can do and what we can't

The greater the number of people any given communications method tries to reach, the weaker is its ability to change people's opinions. The medium with the greatest reach for more than three decades, but necessarily remote, is television. And certainly the inverse law works in the macro world of TV where programme makers find it easy to entertain, to add to their audiences' levels of knowledge and build on already-held beliefs. It is quite another thing to persuade a television viewer to change opinion.

By comparison we operate in something of a micro arena but we are faced with a similar problems. We hear a lot nowadays of company mission, strategic vision and corporate values and without doubt the most successful organisations are those where its employees understand where they are going. But we cannot expect our communications tools alone us to deliver a workforce to that position.

What we can do - when we do it well - is provide a substrate mapping out corporate objectives, explaining our companies' values, and providing a link between individual beliefs and those of the organisation. We are not a substitute for equitable compensation, appropriate resources and industry-standard working conditions. In other words the media we use are just that - message carriers. If the beliefs aren't there from the start, there's little a suite of

communications tools can do to change things. As communicators, we can only start to show excellence when the other pieces of the jig-saw are in place.

However, if you are fortunate to work in a company where its activities and policies match the public statements, then belief in those statements by the workforce will come naturally, and you will be left with the job you can do best - that is, reinforcing the attitudes already shared by your audiences who are receptive because they believe in what you say.

Management messages vs. 'soft stories - getting the balance right

The main task of the in-house magazine, the electronic team letters etc. is to deliver management messages. In order to make these messages digestible we need to use our skills to keep interest high. This requires using different media, exploiting attractive colour, exciting design and the use of stories which in themselves contribute little to corporate messages, but act as a confirmation that the company is 'walking the talk'.

Working as a team - meeting the special needs of colleagues in remote outposts

It is probable that most of us in this room work for large, complex and diversified organisations. Nowhere are there more concerns about company direction than in the small offices and plants sometimes hundreds of kilometres from the headquarters. Special care needs to be taken of these colleagues. It is here that feelings of being forgotten can begin. A loss of direction goes hand in hand with a reduction of satisfaction and productivity - and in our industry this can also lead to a lowering of safety.

The communicators' QA suite

Is the medium the message? That is what Marshall McLuhan believed when he wrote about mass communication technologies more than twenty years ago.

My view is somewhat different. Ideally the medium is invisible - just acting as a transparent vehicle for audiences to understand the company's messages and re-affirm their belief in the company's values.

A single message for the entire organisation, but a different medium for each audience

We know the messages already - or should do. But if we have to maximise understanding - often of complex issues - then before we start we need to be able to match different media with the different needs of our audiences.

A QA culture for all internal systems

Effective communication is a two-way street. If you are explaining something complicated to a colleague or friend, without realising it you will be looking for signs of comprehension and hopefully agreement. If they don't come, you ask: "*So how do you see that working in your situation?*" No matter how good your intuition, you can never know how effective your communications are without building in a system of checks and balances. More than that, people don't like to be preached at, and expect to have a voice to tell you how you're doing.

Hopefully each of us works in organisations fully experienced in quality assurance systems. It is essential we stay in that loop and use every tool at our disposal to quantify our effectiveness.

Making external audit systems work for you

Inserting a questionnaire into a company newspaper can be less than useless. Passive systems are notorious for generating low response rates - usually incapable of delivering a cross-section of opinion. Moreover, this kind of system tends to be biased and develop dumbbell effects. In other words it is more attractive to those who have strong opinions - those who want to praise your efforts - which is good - and those who are resentful or disaffected - which isn't so fine.

Seriously neither is good. Emotional reactions are valid, but they are often affected by circumstances outside your control. And anyway, aren't moderately-held views just as important? Possibly more so if they are held by people who are thoughtful and less affected by any private agenda.

Responding to criticism

Unless you are a superhero, you will always find criticism. There will always be those who have a view on how you can improve. Whether you take their advice or not, ignoring it is not an option. If they have gone to the trouble of telling you how you are doing, you need to react promptly and honestly. It is your job as a professional to take a judgement on the views expressed in a survey - or whatever method you are happy with. Describe the response - in detail - in the next edition of your magazine. Praise the good ideas, acknowledge the opinions held by the majority; explain unexpected results and describe the changes you will make in response to your audiences.

Conclusion

As your organisation's internal communications professional you will achieve excellence when:

- the interests of internal communications are directly represented in your organisation's executive team,
- you personally have the confidence of senior management
- senior management fully understands that in-house communications cannot make up for poor leadership.
- everyone's understands what communications can do well and what it should not be expected to do
- management messages are made attractive
- individual groups of employees recognise that their special needs are taken care of
- resources are committed to undertake regular quality assurance programmes
- you can demonstrate that you are prepared to act on what your audiences tell you



XA04C1319

Internal communication at Bohunice NPPs

Dobroslav Dobák, Slovenské elektrárne - Bohunice NPPs

Communication is the base of everyday existence of a modern person and every company.

It is not easy to work in this area in changing „eastern“ country. Many tools, which are used are in the mind of people connected with „propaganda“. I would like to share our experience with you.

The goal of an internal communication is to spread and provide continuous current of objective information between the management of Bohunice NPPs and its personnel and between the personnel itself. Communication with the Bohunice NPPs employees helps to get acquainted with their opinions and ideas concerning the subsidiary and nuclear power industry.

A place in the Bohunice NPPs QA system

In December 1998 Bohunice NPPs have finished elaboration of QA documentation in 2 levels.

In the overall QA structure there are 22 sections in which activities directly connected with nuclear safety are included. In the 2nd of them there are some aspects of IC

- event reporting system, which is requested by law and regulations
- regular organisation of management meetings with the staff on various levels.

Another 8 sections are in the overall QA structure, not directly influencing nuclear safety, covered by so called systematic procedures. One of the section deals with Public relations and a separate procedure describes internal communication.

Internal communication is used for:

- reinforcing confidence of employees in company activities
- informing and training the company employees by providing true and not misleading information
- monitoring and strategic messages spreading
- reinforcing feeling of fellowship between the personnel and the company

The tools of internal communication used at Bohunice NPPs are:

1. Site newspaper

The internal periodical at Bohunice NPPs is a Site newspaper called „Bohunice“ which is issued once a month. There are two Slovenské elektrárne, plc. subsidiaries at the Bohunice site. Besides Bohunice NPPs it is subsidiary for NPP decommissioning and treatment of Rad-waste and spent fuel and they also participate in the periodical..

The content of the periodical consists of:

- up-to-date information from Bohunice NPPs activities, information on electrical energy and heat generation, information from the company management
- contributions from activities of various divisions of Bohunice NPPs
- articles on nuclear energy in the world
- articles, quizzes (for example Health safety and protection at work) oriented on Safety culture
- different news like contribution from sport events, social activities, out of work activities of the employees, etc.
- short reports, life jubilees, information from trade unions
- introduction of specialised sections activities and interesting employees
- lights, crosswords for free time

The periodical is distributed among all divisions of both subsidiaries. In addition to that it is sent to chosen editor's offices, institutions, Nuclear Installations and retired people who used to work for Bohunice NPPs.

2. Press monitoring

It is carried out daily and it represents a daily set of information about energy, especially nuclear energy. Informations that could have influence on Bohunice NPPs activity are included as well. The information is in a printed form distributed to the management and through sections to employees. Selected articles are postered or put into the computer network.

3. Computer network

In a Bohunice NPPs computer network special file employees can find:

- information on planned and performed visits
- information on events prepared by Bohunice NPPs Information Centre
- news on nuclear energy from NucNet
- information, announcements, invitations from Slovenské elektrárne subsidiaries
- information from Slovak Television Teletext about energy sector
- news referring to a nuclear energy industry

4. Notice boards

Bohunice NPPs visitors and employees can read new information on notice boards situated at all three entrance halls of Bohunice NPPs. The information is about different Bohunice NPPs activities and it is up-dated weekly.

The information contains:

- information from the management
- news on Bohunice NPPs activities
- photo documentation from Bohunice NPPs visits
- information on electrical energy and heat generation

- the most up-to-date news from the press monitoring
- articles on nuclear energy in the world
- invitations for different events organised by the Bohunice NPPs Information Centre

5. News letter

It is issued every month and it contains:

- information on NPP V-1 and V-2 units operation
- information on electrical energy and heat production
- radiation safety - assessment of Bohunice NPPs impact on the environment of the surrounding area during a particular month
- Bohunice NPPs operational news, maintenance news
- significant visits and events at Bohunice NPPs

Information letter is sent to chosen editor's offices, institutions, energy installation facilities, mayors of surrounding villages and towns.

6. Bohunice NPPs open days

The Information Centre of Bohunice NPPs has started to organise the event for Bohunice NPPs employees and their family members called „The open day“. The exceptional value of this event is that children of the employees, who are above 6, can enter the machine room and the main control room of the power plant and they can visit a working place of their parents. The programme is divided to presentation / lecture separately for children and adults. After completion of an introductory programme and refreshment a raffle takes place and children can bring nice presents home. The most interesting part of the programme is an excursion during which the Information Centre lecturers and power plant employees show visitors equipment in the plant. Children are the happiest ones because they could see a working place of their parents. And parents can start, if not having been before, to be proud to work at Bohunice NPPs.

Bohunice - Mochovce

A special case of internal communication in frame of Slovenské elektrárne, plc. utility is the interface of Bohunice and Mochovce NPPs. One of the tools is the utility newspaper „Slovenská energetika“, which is monthly issued and sent to all SE employees. There is also a very close cooperation existing between PR departments at both NPPs, so fresh information is transferred to the staff. The management informs about the role of each plant in the Slovakia's energy sector on the level of the utility and NPP. More to that, Bohunice NPPs employees are actively participating in the works at Mochovce NPP. Many channels of providing information do exist and are used. Nevertheless, rumour caused by some announcements from political circles is difficult to handle.

Internal communication is only possible and effective if the management and staff are ready to communicate with each other !



XA04C1320

WINNING HEARTS AND MINDS

M R Drulia
Head of Public Affairs
BNFL Sellafield

1 Introduction

‘The greatest problem in communication is the illusion that it has been accomplished’ (George Bernard Shaw 1856 - 1950)

Over the past few decades we have seen major shifts in opinion as to what makes a business successful. The 1950’s and 1960’s saw a production focus whilst the 1970’s and 1980’s saw progressive change towards quality and ‘customer is king’ as key business drivers. A popular view now suggests that the next step change will be towards internal marketing, based on the concept that, in the future, winning employee support will be seen as the single biggest contributor to driving business performances.

2 Business Focus

Internal communication is a business process and should be recognised as such at executive level. It requires inputs (enablers) and has outcomes. Successful communication can be defined as being when the outcomes of communication activity match the aims or intent. There are four key stages in the communication activity:

- (i) Defining the intent
- (ii) Agreeing the messages
- (iii) Delivery
- (iv) Assessing the impact

3 Audience Focus

Individuals need to move through stages of receptivity and ownership of an idea or message. Each stage on the curve in Appendix 1 is achieved as a result of well planned and executed communication.

4 Three Types of Communication

Each requiring a different style:

Reactive or rapid response communication
Communication providing information on general business issues
Campaign communications

5 Communication Principles

Underpinning 2, 3 and 4 above, six key principles for effective communication have been developed:

Be sure about the purpose of wanting to communicate.

Be clear who the target audience is and is not.

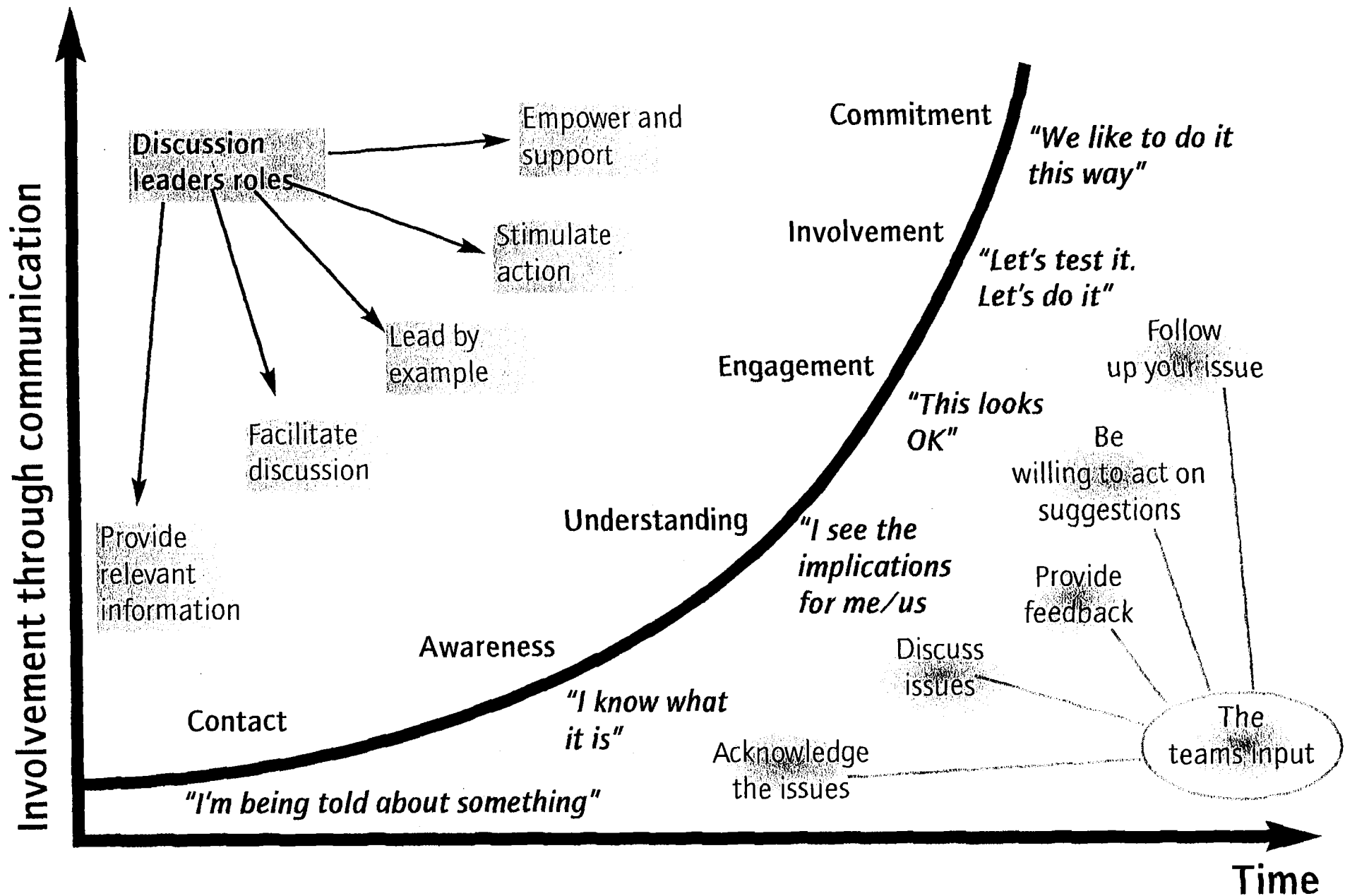
Develop the communication to match the needs of the audience and the type of message.

Test the communication on someone representative of the target audience.

Plan the communication delivery so that the audience is likely to be receptive and not under pressure from competing priorities.

Gather feedback and act on it.

In summary, to win hearts and minds you must understand the needs of your audience, the intent of your communication activity, adopt a suitable style and match your deeds to your words.



Your role in two-way communication

TRANSPORT
—
MOUNTAIN OR
MOLEHILL?



XA04C1321

The so-called "Castor-Crisis": Transport of spent nuclear fuel elements and German "Angst"

How to prevent the public relations catastrophe

Dr. Werner Süss, Bayernwerk, Munich

1. "Castor-Crisis" - The Real Facts

- the background: radioactive contamination on the surface of transport containers for spent nuclear fuel elements
- legal aspects: transport limit values and notification obligations
- health aspects: radioactive contamination and ionising radiation
- the news media: divergence between technical facts and public perception

2. "Castor-Crisis" - The Reactions

2.1 Technical measures

- "action plan" of the Federal Ministry for Environment Protection and Reactor Safety
- IT-based European Information and Report System for the transport of nuclear combustibles ⇒ "Transparent Transport Procedures"
- optimisation of decontamination procedures and transport organisation
- simplification of logistics, clearer responsibilities

2.2 Communications measures

- defense strategy: "we made a mistake..."
- information campaign: "we owe you some answers..."
- regaining credibility: public testimonials of employees in newspaper ads, brochures etc.
- regaining credibility: neutral investigation of all relevant circumstances by KPMG

3. "Castor-Crisis" - The Lessons

- internal crisis management: improved co-ordination at company and branch level
- pro-active strategy: "The benefits of nuclear energy" (avoidance of CO₂-emissions)
- limits of communications
- communications efforts for nuclear energy - the European context



XA04C1322

LONG ISLAND TO LIMERICK, NUCLEAR FUEL TRANSFER

Bill Jones
PECO Energy Company

The issue: How to move 33 shipments of radioactive nuclear fuel--200 tons of enriched uranium pellets--on rail cars through the heart of Philadelphia, without upsetting politicians, the media and anti-nuclear activists, after a similar plan to move the fuel through New York City had been rejected in a political disaster.

The answer: Strategic Communications Planning.

The setting: Philadelphia Electric Company (now PECO Energy) was to be paid \$50 million (US) by the Long Island Power Authority (LIPA) to take nuclear fuel rods from Long Island's Shoreham nuclear station, which was being shut down. The financial bottom line was \$120 million, because besides the \$50 million payment to PECO for taking the fuel away, the Company's ratepayers would benefit from receiving \$70 million worth of free nuclear fuel.

That was the good news. The bad news was how to transport the fuel from Long Island to PECO Energy's Limerick nuclear plant, 35 miles northwest of Philadelphia. When the deal was announced in February, 1993, LIPA's intent was to transport the fuel on freight cars through New York City, across a portion of New York State, then down through northern Pennsylvania to Limerick.

At PECO Energy's department of Corporate and Public Affairs, we instinctively knew that plan was in serious trouble from the beginning. New York City has had a long history of aggressive opposition to such shipments, and Mayor Dinkins and the entire City Council were up for reelection. To us, it was clear: the fuel eventually would have to come right through Philadelphia. It was also clear that to manage a potentially explosive issue like this we had to get well out in front of the information curve, or get run over by our own nuclear train.

Research is quite clear that in risk management situations like this, the side that gets out front with the most credible information inevitably wins. That is exactly what we set out to do.

The first and most important information we had to convey to our publics was the indestructibility of the 70-ton shipping container. What better way than by putting together a video showing dramatic crash tests of similar containers being run into the side of a mountain at 80 mph on a jet-assisted flatbed tractor trailer, and being broadsided by a diesel locomotive also traveling at 80 mph?

In making the video, in-house, we took advantage of research showing that in risk and crisis management communications, female spokespersons are considerably more credible than males. Both our technical and community relations spokespersons were women.

As it turned out, our supporters and critics agreed, this video--and the more than 300 copies we distributed--was instrumental in helping us achieve our objective. "The Video," as it became known, became the centerpiece of a packet containing industry brochures, flyers, Q&A pieces, and scientific information all relating to the country's safe record of transporting used nuclear fuel over the past 25 years.

Then we targeted our audiences: state environmental, radiation protection, emergency management, law enforcement and transportation officials in New York, New Jersey, Delaware and Pennsylvania; the U.S. Coast Guard; the Mayor, City Council and police, fire and emergency management personnel in Philadelphia; Pennsylvania state legislators in our service territory; elected and appointed officials from every municipality along the potential 35-mile train route from Philadelphia to Limerick, and editorial boards of all newspapers covering the region.

As we were quietly targeting the Philadelphia region, the anti-nuclear forces were preparing for battle 90 miles away in New York City. On April 22, 1993, LIPA, which did not have a strategic communications plan, was scheduled to present its transportation plan, in public session, to the New York City Council. That morning the New York Times broke the story, complete with a map of the fuel's route through the city. A firestorm of political and anti-nuclear opposition erupted in the media. One headline proclaimed community fear of "The Little Engine That Glowed." The LIPA plan was already doomed.

During the summer, while LIPA was still exploring alternate routes through New York, a specially trained PECO information team spread out to brief our targeted audience throughout the Philadelphia region. We were convinced that the fuel would have to be barged from New York to Philadelphia through the Atlantic Ocean and up the Delaware River, then transported by train through the city and its suburbs to Limerick.

We quietly briefed more than 200 key elected and appointed officials and newspaper editorial boards on the shipments' possible route through Philadelphia. With each visit we left an information packet and the video. To maintain media credibility, in late August and Early September we revisited the media, telling them there was a growing probability the fuel would be coming through Philadelphia.

When the media tried to find shock and opposition from politicians and municipal, county and state officials, there was virtually none. We had been there first. Almost to a person, officials' reaction was calm, rational and objective. The resultant positive media coverage, and editorial endorsement from several newspapers, was instrumental in muting constituent concern and, thus, political opposition.

Yet, one small group of Philadelphia City Council members threatened to hold public hearings and to block the shipment. Again by plan, we preempted Council's proposed hearings by holding our own public information sessions at a local hotel. Again following risk management research, there was no podium, no microphones. No forum for political posturing or for hysterics by the anti-nuclear activists. Just a series of information and display booths around the room at which we calmly answered questions, gave out literature, and, of, course, showed "The Video" on a continuous loop.

Again, media coverage was balanced and objective, and, as we had planned, the TV news couldn't resist showing the video crash scenes over and over again.

On September, 14, 1993, we made it official: the fuel would be coming through Philadelphia by the end of the month. To the media, it was a non-event. They had been reporting the probability for weeks. On September 15, activists on Council made one last ditch effort to hold public hearings and delay the shipments. The motion was defeated.

It was time for the last part of our plan. Rather than try to keep the initial fuel train ride through the city a secret to minimize possible disruptions, we made it a one-time media event. And a media event it was. Three reporters rode on the midnight train with PECO Energy's chairman and CEO, Joseph F. Paquette, Jr. TV followed and filmed the three-hour journey. Area radio stations and the Associated Press were kept updated by periodic cellular phone reports from PECO Energy media reps aboard the train.

The Philadelphia Daily News headline, over a dateline, Aboard The Nuclear Fuel Train, and a first-person account from the reporter who rode the train, said it all: "CITY SLEEPS, NUKE CAR ROLLS." In fact, there wasn't a single protester along the route.

After that first shipment, the fuel train, as we had planned, became a non event. The final 32 shipments progressed without a single line of type in a newspaper or a word of mention on radio or TV. The project was concluded without incident on Sunday, June 5, 1994, at 4:30 a.m. as the last shipment made its way through the security gates at Limerick. We put out a short news release, which was dutifully reported, generally somewhere deep in the paper.

A \$120 million corporate transaction had been completed, successfully, by a major US utility, thanks, to a considerable degree, to strategic communications planning and execution. There had been no increase in staff or budget, and minimal expenditures for travel and information packet and video tape production and duplication.

One final, significant measure of our success was formal and genuine recognition and thanks by the Company's Nuclear Generation Group, for our instrumental role in getting the fuel through. We were pleased with the recognition, obviously. But it was simply strategic communications planning that carried the day. And that is our job.



XA04C1323

TRANSPORT - MOUNTAIN OR MOLEHILL?**THE TRANSPORT OF SPENT FUEL -
HOW A MINOR INCIDENT BECAME A MAJOR ISSUE**

by Karen Daifuku
Electricité de France

On May 6, 1998 the national newspaper "Libération" published a story revealing that some of the spent fuel casks shipped from Electricité de France's NPPs would arrive at Cogema's rail terminal at Valognes with some surface contamination at levels above the authorized limits. Even though the contamination never represented a health hazard to either the population or to the operatives due to its very low levels, the story turned into a communication crisis for the nuclear industry.

Mainly the **criticism** centered over the perception that there is a **lack of openness** in the nuclear industry. In terms of communication, the main **error** committed by Electricité de France and others involved, including the safety regulator, was **poor judgment**. When these measures showed inconsistencies, they were overlooked due to the very low levels of contamination. And yet, when they were reported by the press, it appeared as though there was a conspiracy to hide the truth. The following explain the facts, the pitfalls, and the lessons learned so far, and the reforms which are being considered at Electricité de France, within the French nuclear industry and particularly the institutional reforms which will affect the entire governmental oversight of the nuclear energy system.

Where **progress needs to be made**, is in the **anticipation** of potentially sensitive topics or small incidents which opponents can seize. Some of the **solutions** are to set a better **system of monitoring events** in order to anticipate rather than be in a position of damage control. It is also a question of being able to **prioritize the information**. Being **transparent and open is a must**, however, it does not mean necessarily reporting everything without prior evaluation. Because, the risks of **saturating the media without prioritizing events or following-up can and will lead to confusion**, misunderstandings and a crisis waiting to happen.

In terms of the media, first, the information was reported by the French news wire on April 27, 1998 where it was stated that Mrs. Voynet, Minister for the Environment was not satisfied with the nuclear industry's explanations concerning the levels of contamination on the rail cars use to ship spent fuel from nuclear power plant to the La Hague (France) reprocessing center. Nine days later, the French national newspaper "Libération" had a damaging article based on a report furnished by Mycle Schneider of the Word Information Service on Energy (WISE), a well-know anti-nuclear group, as well as an interview with the Minister of Environment Dominique Voynet where she placed Electricité de France in the "hot seat". Until that story, few papers had picked-up the story from the news wire. It was not, until that point, a significant event.

However, in the news articles that were published within the following two months, Electricité de France was seen by the media as the main culprit. Thus, the company's image was deeply affected.

Overall, Electricité de France's **policy of openness was totally discredited by the media due to the "silence" observed** by the company on the issue of the contaminated transportation of spent fuel in not reporting the contamination levels to either the railroad company, or to the general public. The media did not accept Electricité de France's explanation, that as the level of contamination on the rail cars did not present any health hazards, the company did not think it necessary to communicate. In view of the press, Electricité de France has to be totally transparent at all times and does not have the right to determine when and how transparent it should be. By acting the way it did, Electricité de France has ruined its carefully built image. One positive point though, is that once the story was out, senior executives were very quick in taking responsibility by going on national television with "mea culpas". The fact that Electricité de France quickly admitted its mistakes can and should help in the rebuilding of a positive image, provided the company demonstrates it has learned from its errors and rebuilds good relationships with the media. This crisis shows the fragility of such a relationship.

The other major consequence, which goes beyond the damage to the company's image, is the what this communication's crisis did to the image of nuclear energy. **The media gave the impression that the nuclear industry works in secrecy and manipulates public opinion.** This has helped expand the idea fostered by the government and environmental groups that there should be an **independent body to monitor the nuclear industry**. The investigations of the contamination problem also revealed that the regulator had been somewhat lax in inspections. As a result a parliamentary commission concluded that it was time to make some reforms in the system.

A **consensus** has been established around themes that were mentioned by the Minister of the Environment Dominique Voynet, that is **openness** and the **credibility** of all those involved in the nuclear industry. They are **necessary and virtually obligatory for the "survival" of nuclear energy** as seen by the press.

When all the factors are examined, it seems clear, with hindsight, that it was a communications crisis waiting to happen. For instance, some people were intent in making the contamination a major issue when in fact when the story first broke on the news wires, few newspapers and television networks picked it up. It was not until the cover story in "Libération" and with the content of a confidential report was revealed that Electricité de France was put in a defensive position with little room to maneuver. The debate was quickly centered around the question of openness and re-focused the debate on the future of nuclear energy. It is important for Electricité de France to know one's opposition, providing clear information. But this communication crisis also showed **how important networking is**, at all levels, but especially the continuous effort Electricité de France needs to make towards journalists, not only in **keeping channels of communications open**, but also better **explain situations which can be complex**, requiring that a **technical problems should be exposed in lay terms**. In this particular example, at the local level, power plant managers did just that in their respective regions with local elected officials. The benefits of such actions were immediately tangible because they were then reassured that the contamination levels were insignificant even though they were above the authorize levels and never posed a threat to the population.

As of July 6, 1998, **the transport of spent fuel has gradually resumed in France**. As of the end of 1998, **all of France's operating nuclear power plants have shipped spent fuel from**

their sites to Cogema's reprocessing center at La Hague. The French regulator and safety authority DSIN and OPRI have made systematic controls on every site before shipment began.

Last July, Jean-Yves Le Déaut, Chairman of the Parliamentary Commission for Scientific and Technological Choices issued a report which suggests that **a law that compels the nuclear industry to be transparent and open is necessary in order to achieve true credibility with the legislature and ensure its durability**. The report also recommended the **creation of a independent agency** (non-governmental, non-industry sponsored) for radiological protection and nuclear safety. This agency would include the areas of expertise handled up until now by the Institute of Nuclear Safety and Protection (IPSN) and the Office for Radiological Protection (OPRI).

As a result, on December 9, 1998, the French Government endorsed most of Mr. Le Déaut's recommendations by announcing the **creation of an independent nuclear regulatory agency** and the **authorization to build two underground laboratories for the research on disposal of high-level and long-lived waste**. The regulatory agency will be lead by five members, three of which will be named by the government and one each by the Senate and National Assembly respectively. There will also be a government representative named by the Environment Minister. However, contrary to Mr. Le Déaut's recommendations, radiological protection will be the responsibility of OPRI, under the Ministry of Health, whose budget will be doubled. IPSN will become an independent government agency and sever its ties with the French Atomic Energy Commission (CEA). These decisions are expected to be voted on in Parliament during the first trimester of 1999. It is expected that other decisions will follow, including some on waste storage.

In conclusion, despite the best laid out plans, events can take one by surprise as illustrated in the transport of spent fuel issue. So, it is now a question of **anticipating** better, putting in place an improved **alert system**, monitoring events and being able to make the proper analysis in order to prevent benign situations from getting out of hand. **Adaptation to an ever evolving environment** is another important factor. **Knowing your opposition**, not just those that are familiar like clearly identified foes such as environmental groups, but also groups or individuals that can be in the mainstream of society, including members of the government.

Last, but not least, experience has showed that **openness is the key to a relationship of trust** at all levels, with the general public, politicians and the media. It does not mean total disclosure at all times because of the risk of overwhelming one's target audience with information without them being able to either **evaluate its importance** or sometimes fully comprehend it if it is complex. As for the media, it is crucial to built a strong relationship with journalists. It is a painstaking operation not only necessary but crucial. **Following-up** is a must as it permits to make sure there are no misunderstandings and helps put information into the proper perspective.

**NUCLEAR
SUBSIDIARIES**

—

**THE BLACK SHEEP OF
THE FAMILY**



XA04C1324

“GROUP VALUE FORESIGHT“ - TREATING THE NUCLEAR INTEREST IN IVO GROUP COMMUNICATIONS

IVO Group
Corporate Communications
Marke Heininen-Ojanperä

Fortum is a new international energy group formed through the combination of the **IVO Group** and the **Neste Group**, two Finnish industrial groups with extensive operations in the energy sector in the Nordic countries and certain other countries throughout the world.

IVO Group uses almost all fuels to generate electricity: nuclear, hydro, gas, oil, coal, peat, biomass, municipal waste, wind and solar. The main capacity is generated by nuclear, coal and water but gas, particularly in cogeneration, has been expected to grow. The major challenge in communicating is to find a balanced way of dealing with this variety so that the messages will be open and objective and, at the same time, not harming unnecessarily any of the generation forms in business terms. Moreover, new business procedures are welcome.

- The majority of the communicating issues deal with either competition or environmental questions under the threat of bad publicity and more strict regulatory controls.
- The competition framework in the IVO's Nordic energy market is probably the most progressive in the world with lots of cross-border power trade and a fully operable real-time power exchange (Nordpool).
- IVO enters the market from its home-base in Finland with the richest variety of generation concepts and fuels as compared to any of its major competitors.
- Almost 80 % of IVO's capacity in Scandinavian countries, however, is composed of hydro and nuclear generation along with high-efficiency cogeneration (CHP) that are all beneficial even in terms of the most demanding climate change challenge.
- In general, the majority of energy-related emissions and harmful substances in Finland are received from sources outside the market area i.e. rest of the Europe.

New demands - new messages in the market

However, all forms of generation have been openly communicated in order to promote any new investment and secure the old installations. To fit these communications to IVO Group's strategy formulations and any foreseeable, alternative regulative environment, a process entitled “Group Value Foresight“ (EEV) was founded. This process gives crucial support in defining the core policies and messages of the Group.

- The traditional way of dealing with new regulatory pressures was quite reactive, slow and it was seldom innovative.
- The emerging, new demand and customer based market condition required new proactive ways of dealing with corporate communications.
- Especially the key corporate messages had to be rethought and formulated accordingly.

Futures anticipation encouraged

The process is today partly based on broad, multidisciplinary futures studies and scenario work executed earlier as a set of special R&D projects since the mid-eighties to support corporate strategy and to understand general change, technological opportunities, stakeholder expectations, public energy policy formulations and pertinent, new market regulation.

- IVO was fortunate enough to prepare for the coming upheaval of the market condition through accommodating lots of systematic scenario exercises early as a core of R&D and business planning. Futures thinking was strongly encouraged.
- Scenarios were also a widely celebrated form of foresight in Finland while the country and its public institutions were preparing for EC membership and sought new ways to overcome economic recession. This gave a lot of support for company-wise scenario exercises.

Group dynamics and networking

The outcome of the final, “structural scenarios“ and 1993 autumn experience of the Parliament rejecting the application of the fifth nuclear power plant coincided. These events resulted in establishing a working process consisting of several future-oriented executive working groups with a leading group related to the Corporate Board, all of them seeking to foresee new and existing businesses in relation to emerging public and regulatory pressures.

- After these „milestones“, the gap between scenario planning and business management still somewhat prevailing was treated with deeper concern by inviting the executives to become more involved in these anticipatory exercises.
- No formal structures e.g. departments were established but a set of loose ad hoc working groups started to scan weak signals and relate them to the earlier regulatory scenarios.

New richness of nuclear vocabulary

From the beginning, one of the working groups was responsible for defining the issues and sorting out the weak signals related to nuclear energy. In terms of corporate communications, special nuclear policies and messages have been worked out each year. For many reasons, the earlier nuclear policies and communication agendas have been unnecessarily strongly emphasising the nuclear option only.

- As a consequence, IVO has been gradually recognised as a broad-based power company operating much more else than the renowned -- and later renewed -- nuclear fleet at Loviisa.
- Internal speculations concerning nuclear lobbying and policy agendas were also somewhat more decentralised in the company with a resulting good motivations and better capacity to actually anticipate both stakeholder expectations and related fresh messages provided for the Board and key executives.
- Networking as a working method was welcome by the middle-management and among specialists, in particular.

- Broader preparedness to shape and formulate priority key messages concerning e.g. nuclear issues in changing conditions was established.
- As a final outcome, more sensitive and flexible communications can be guaranteed. Nuclear issues are no more emotional issues at least within the company. Consequently, rational expectations and communications in the open market begin to meet each other.

Today, the Group Value Foresight process, among others, has helped IVO to find the correct weighting of any nuclear issue and option in relation to other major forms of generation and related issues. The policies and messages have become more reasonable and more sensitive to changing situations in the market and in relation to public perception. There is less and less need for presenting the nuclear option in public with a quivering voice of offended authority.



XA04C1325

THE ROLE OF NUCLEAR POWER IN EXTERNAL AND INTERNAL COMMUNICATIONS AT SIEMENS

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Erlangen**

The nuclear business of Siemens

„Der Spiegel„ quotes Siemens CEO Heinrich von Pierer as saying that the nuclear business accounts for 2 percent of the business but for 95 percent of his troubles. He never made that statement, but it is true that the nuclear business at slightly above DM 2 billion contributes only 2 percent to Siemens' annual turnover. As far as the troubles are concerned, Mr. von Pierer would be all too happy if he had practically no other problems to handle. So far, the nuclear business has been showing quite a satisfactory level of profitability. But for the last decade its volume has stagnated while the fossil power business has expanded significantly. Whereas nuclear made up 75 percent of the power generation business in the 1970s and 1980s, it is now at a level of 20 percent.

A further noteworthy trend is that KWU managed to compensate its shrinking business volume in Germany by expanding abroad, mainly in the area of large modernization and safety upgrades so that over the last few years the foreign share of its nuclear business has grown to 50 percent. Contrary to the perception of some NGOs, it is not mainly the Russian-design reactors but Western reactors that provided KWU with more opportunities.

The structure of Corporate Communications

The communications organization at Siemens is rather complex. Matters related to the company as a whole are dealt with by the corporate headquarter in Munich. Topics related to the individual Business Group are handled at Group level. For this purpose, each of the 17 Groups has its Group communications organization responsible for internal and external communications – including, if appropriate, political relations. The Group's press office reports at the same time to the Group president and the corporate press office. In case of conflict, the matter has sometimes to be transferred to management level.

As a consequence of the political relevance of energy technology, KWU has a public relations department addressing a broad spectrum of stake holders, runs a quarterly magazine on energy and environmental policy called „Standpunkt„ („Viewpoint„) and has, with a staff of five, the largest press office of all Siemens Groups. These entities also contribute to the corporate media for internal and external communications.

The role of Siemens in the nuclear debate in Germany

When the nuclear controversy in Germany reached its first culmination in the mid-1970s, Kraftwerk Union, the forerunner of what is now the Siemens Power Generation Group

(KWU), automatically became a leading voice on the pro-nuclear side because, as turnkey contractor for most of Germany's NPPs, it had the deepest knowledge of the technology whereas the owner/operator side was and is organized in several utilities.

In 1975, Siemens hired the then general manager of Deutsches Atomforum, Dr. Werner Rudloff, and set up a department „Kernenergie und Öffentlichkeit, (Nuclear Power and the Public) which engaged in massive campaigning in the form of lectures, discussions and leaflets, participating with KWU experts in up to one thousand events per year. More than one hundred KWU experts got discussion training and spent many evenings and weekends in organized events or street discussions, with strong participation of works council members. KWU president Klaus Barthelt became a kind of „Mr. Nuclear, for the media, Siemens Supervisory Board president Bernhard Plettner wrote several booklets defending the merits of nuclear power.

The anti-nukes at that time consisted mainly of NGOs without major support in the parties represented in the Bundestag. Their roots were the peace movement and the APO movement of 1968. In spite of violent protest at several nuclear sites (Wyhl, Brokdorf, Grohnde), the Social-Democratic/Liberal government headed by Helmut Schmidt defended the expansion of the installed nuclear generating capacity, even during the critical years following the Harrisburg accident of 1979, and in 1982 gave their green light for the construction of the three so-called Convoy plants.

Til then, nuclear power had not really been a controversial issue within Siemens, neither at Board level nor among the ordinary „Siemens citizens,. KWU was one of the „cash cows,, of Siemens, and one could be proud of the outstanding safety of its NPPs.

But the situation was far from idyllic. In 1982, the Social-Democrats were already split on the issue of nuclear power, and this contributed to the collapse of the government coalition. Once in the opposition, SPD took a more and more fundamental anti-nuclear course, years before Chernobyl. The Greens had gained representation in the Bundestag and had occupied central environmental topics, challenging the leadership of SPD in certain political biotopes. The Chernobyl accident finally triggered the SPD party congress resolution of August 1996 to call for a nuclear phase-out within ten years.

The Chernobyl catastrophe caused a credibility gap for German authorities, utilities and Siemens likewise: How could one believe that nothing comparable could also happen in the West? The smallest common denominator for public opinion was found by the Christian-Democratic/Liberal government by calling nuclear a „transitory form of energy to be substituted as soon as possible,. In this way the undisturbed completion of the „Convoy plants, was assured. It took indeed years to convince the general public that the differences in reactor safety between East and West were not marginal but fundamental for reasons of design, maintenance and safety culture.

During the first years following the Chernobyl accident, many people at Siemens through all hierarchical levels started to consider KWU a burden for the image of Siemens. Doubts about the value of the nuclear option spread also within the company. Outside the company, the KWU engineers who had once been the spear-head of progress, now felt like pariahs, and their children suffered all kinds of insults and aggression from their school-mates and often enough from teachers, too.

Knowing that the future of the company was at stake, KWU set up, immediately after the Chernobyl accident, a task force that studied the physics of this reactor and made all their findings available to the external and internal public. As soon as the Soviet Union had decided to open itself to cooperation with the West and, in particular, since the unification of Germany, Siemens/KWU, in cooperation with the German Reactor Safety Institute (GRS),

analysed the safety deficiencies of the different generations of the VVER and proposed, in 1991, an international safety improvement program for VVERs which was submitted to the G7 meeting by the German government.

At that time, the present chairman and CEO of Siemens, Heinrich von Pierer, was KWU Group president. He proposed publicly to close as soon as possible the Chernobyl-type reactors and the first-generation VVERs. This clear language greatly helped to re-establish KWU's external and internal credibility as did the fact that KWU vigorously expanded its non-nuclear businesses and heavily invested in photovoltaics. On the other hand, it certainly did not please the Russians and therefore did not serve KWU's business interests in Russia. Nevertheless, Siemens/KWU managed in the following years to build up a broad-based cooperation with Minatom companies in the field of reactor safety and segments of the nuclear fuel cycle.

The Siemens boycott

In 1993, two anti-nuclear organizations in Germany, namely BUND and the German section of IPPNW, started campaigns against Siemens' commitment to nuclear energy hoping that a phase-out could be brought about if Siemens gave up its nuclear business. They called the public to boycott Siemens consumer goods, and IPPNW sent letters to all medical doctors requesting them not to buy Siemens medical equipment as long as Siemens didn't abandon nuclear technology. They speculated that economic pressure would force Siemens to give in on nuclear.

As a matter of fact, the boycott campaign had no measurable effect on the business of Siemens – an excellent proof that public opinion did not turn against Siemens' involvement in nuclear technology.

Siemens responded by holding a top level meeting with these organizations. The chairman of the Supervisory Board of Siemens, Hermann Franz, attended the meeting and explained why Siemens considered its involvement in nuclear technology ethically justified. Until today, Siemens maintains a dialogue with such organizations at various levels.

In the same way as with the German utilities, several anti-nuclear organizations use the annual shareholders assembly of Siemens as a rostrum for their critique of Siemens' business policy. Permanent topics are alleged safety deficiencies of NPPs built by Siemens, radiation exposure of Siemens employees, Siemens involvement in safety improvement of VVERs and R&D for new reactors instead of the promotion of energy saving and regenerative energies.

A special case is the anti-Siemens campaign of the Austrian organization „Global 2000,, demanding the abstention of Siemens from safety upgrades at the Mochovce and Bohunice NPPs in Slovakia. The situation in Austria is delicate. It is an official goal of the Austrian government to have a „nuclear-free Central Europe,,. The Austrian government has invested a lot of effort to prevent the completion of Mochovce. Siemens Austria is one of the largest foreign operations of Siemens, and it was therefore mandatory that the image of Siemens in Austria was not damaged. We managed to get the message across that Slovakia would complete Mochovce by all means and that it was in the interest of the citizens in East and West that Siemens, in a consortium with Framatome, brought Mochovce to an international safety standard. The German government gave political support and Hermes export credit guaranties.

At the beginning of the boycott campaign, the Siemens response was masterminded and administered by Corporate departments for public and political relations. Later on, the respective KWU departments were put in charge.

The internal audience: More a chance than a problem

Siemens employs worldwide more than 400,000 people, out of which 190,000 work in Germany. Assuming that everyone of them has closer contacts and credibility with, say, 50 people – relatives, friends, members of sports clubs and so on – the penetration of the Siemens work force could easily amount to 10 million out of 80 million. The employees are therefore the most important multipliers. Whether they defend the company policy or not is of critical relevance.

Siemens employees underly the same opinion trends regarding nuclear energy as the rest of the society, but with some exceptions: Most of them have a positive attitude towards technology and technological progress, trust the work of other segments of Siemens and identify themselves with their company.

Based on this understanding, the internal media have been used continuously to discuss the pros and cons of nuclear power, the company visions for energy technologies and the company strategy in the energy field. Every employee gets the monthly SiemensWelt, managers and communications people get a variety of newsletters, leaflets and handbooks describing the company policy and commenting on political trends related to areas of activity of Siemens. Nuclear energy and the Siemens boycott also figure on the agenda of seminars for managers. More recently, the intranet has been put to serve this purpose, too. Last but not least, the media transport Company messages to employees.

Siemens and the phase-out policy of the new Red-Green government

In its Coalition Agreement, the new red-green government established the goal to initiate an „irrevokable„ phase-out of nuclear power. In the same way as the utilities, Siemens acknowledges the primacy of politics but doesn't share the opinion of the government. In our view, this policy is in conflict with other goals to which the new government has assigned priority, in particular: reducing unemployment and curbing CO₂ production. We therefore believe that the phase-out policy cannot be maintained in the long run. Our aims are to keep damage to the existing fleet of NPPs in Germany to a minimum, to maintain our freedom of action in foreign markets and to keep the door open for new reactors.

Our basic message is: Nuclear power is a key element for sustainable development. It is one of the options we have to develop further and to pass on to the next generation – leaving it for them to decide to what extent they want to use it.

Conclusions

1. A „political„ technology like nuclear necessarily leads to a high profile in the public. As the No. 1 nuclear supplier in Germany Siemens doesn't have the option of a low profile.
2. As a consequence, the nuclear business gets unproportionate attention in the public. Siemens has to take this into account in order to assure its other business areas enough visibility.

3. For public relations on nuclear power, the internal audience is as important as the external one. Because of the large work-force of Siemens, internal communications have a significant multiplier effect for the external audience.
4. A broad spectrum of non-nuclear activities doesn't make a company like Siemens more vulnerable to public pressure than a mono-structured company. On the contrary: The high prestige gained in its other business fields makes it easier to defend the nuclear business as equally respectable, and the broad and balanced spectrum of energy technologies increases the credibility of its position on nuclear power.
5. Anti-nuclear groups have been unsuccessful in their efforts to bring about public pressure on Siemens to abandon nuclear technology. This is the best proof that there is no strong public opposition to nuclear energy.



XA04C1326

USED NUKES FOR SALE – ANYBODY INTERESTED?

Doug McRoberts, Director, Public Relations – British Energy

This presentation focuses on the rapidly-developing commercial nuclear generation scene in the context of wider changes in power station ownership in company structures. The following is a short point-by-point summary of the main topics. Further developments are expected between the preparation of this paper and the conference itself. The presentation will be audience-interactive – and the following points are therefore designed to provoke thought and discussion at Avignon.

□ 1950s – 1980s

Nobody was particularly interested in buying used nuclear power stations – everyone was building new ones. But a series of events – Browns Ferry and TMI (US), Swedish Referendum, Chernobyl, etc, caused particular problems. More importantly, objective appraisal of energy economics in the wake of political change, oil price moves, etc, caused a re-think on nuclear investment. We were seen to be too expensive – and in communications terms we were complacent until things went wrong. Then we were both arrogant and defensive....

□ 1989 – 1990 – UK Tries It....

As part of the electricity privatisation process, the UK Government initially included AGR and Magnox nuclear stations in the package. Serious financial scrutiny by the banks and analysts rapidly led to the withdrawal of Magnox – the older stations. Sustained lobbying and further economic appraisal then led to the withdrawal of the AGR stations. Meanwhile, in preparation for privatisation, the CEGB drastically cut its PWR investment programme. At its first market test, the nuclear industry fell at the first fence. Important to realise why – it wasn't anti-nuclear lobbying (even after Chernobyl) it was merchant bankers.

□ 1994 – 1996 UK Privatisation Round 2

Five years after the initial failure, the UK's more modern stations – 7 AGRs and the new Sizewell B PWR (first and last of its kind!) were performing so well in a competitive and mainly privatised sector, that the Government decided to try again. The pressure for privatisation came from the nuclear companies. With long term liabilities capped and decommissioning costs mastered – and with generation costs halved in 5 years – over 5 million potential investors said they *were* interested. One key factor was support from US merchant bankers Morgan Stanley who said „why not?“ Around the world private companies with nuclear stations were doing pretty well – the US, Sweden, Finland, Japan, Spain, etc. More sophisticated European investors said they would buy the world's first purely nuclear private company – and they did. US investors held back....

□ 1990s

The wider generation scene is changing rapidly. Politics in Eastern Europe, and economics in the west produced major changes. US utilities buy into the UK and elsewhere. Around Europe, the move towards electricity liberalisation gained strength. Nuclear begins to take its rightful place as part of this commercial scene.

□ 1997 – USA

AmerGen formed – a 50/50 UK/US partnership between British Energy and PECO Energy. Intention? To buy used nukes in the US. We didn't have to work hard to look for opportunities – in the developing US market, utilities across the country beat a path to our door to talk about selling us their assets. Why did they want to sell? Why did we want to buy what they don't want?

□ 1998 – USA

History is made. AmerGen announces the purchase of Three Mile Island 1. A good PWR with a newsworthy name – and a better future? The potential PR nightmare actually appeared as a good commercial news story.

□ 1998 – USA

The Pilgrim station becomes the second to change hands – and AmerGen didn't buy it. In an auction process Entergy emerge as the successful bidders. Meanwhile, the US NRC has recognised the reality that the energy scene will continue this way – and announces a streamlined re-licensing process. Who else is interested? Well there were rumours that Duke Power had expressed interest in buying British Energy in 1996....

□ What Next?

Expect more developments in the US as companies change their shape and nuclear specialists seize their market opportunities. Expect developments in Western Europe – with markets opening up against some political resistance, and countries such as Spain reviewing the place of commercial nuclear. Commercial companies, seeking opportunities, will form partnerships, take on O&M contracts and utilities opportunities offered by power swaps and even trading carbon permits as environmental concerns grow. There are real opportunities – and threats – for the nuclear generation industry.

□ The Future

Some plants will close – the ones which can't be sold (it's already happening in the US). Others will forge a better future through focused, private sector commercial management. Politics remains a crucial part of the equation – look at Germany, Sweden and Switzerland! But one thing is clear – there are now plenty of investors seriously interested in buying used nukes. You can find them advertised on the internet, the Financial Times and elsewhere – but the ones most liable to sell successfully are the ones which don't need to advertise....

□ **The Communications Challenge**

- Background – 105 reactors in USA
Over 100 reactors in Western Europe
Nuclear largest single electricity source in W/Europe
Expansion/development in Asia Pacific and Russia
- What will replace the US/European reactors?
- The drivers – Market developments
Industry/company structures
Share prices/investor priorities
Environment/energy legislation
- The challenge – as communicators, to recognise the whole industry will be on a radically different basis by 2010.
- Get involved in leading this process, rather than being driven by it.
- Think out of the box. Suggestions now welcome....

CAMPAIGNS AND STRATEGIES



XA04C1327

The Swiss Biotech Referendum: A Case Study of Science Communication

Thomas B. Cueni, Secretary General Interpharma¹

On June 7th, 1998, the Swiss citizens voted on a constitutional amendment, which could have jeopardised the future of biotechnological research in Switzerland. Scientists and opinion leaders around the world expected the referendum with great anxiety. 'Nature', in an editorial, had firmly stated that the Swiss way showed 'how not to run a country', the 'Economist', a week prior to the referendum, had written that the Swiss might be the only people in the world who decided on their own to forego a worldclass position in scientific research.

In fact, the Swiss did none of that. They rejected the constitutional amendment with an overwhelming majority of 67 per cent of the votes, and what started out as a dramatic threat to scientific research in Switzerland became a platform in favour of modern biotechnology. The presentation addresses

- some of the key features of the Swiss biotech campaign,
- analyses the success factors of the campaign,
- provides an insight in the most in-depth collection of data on public perception of biotechnology in the world, and
- draws conclusions as to what extent the Swiss experience can be of use in the way to communicate on modern science.

I. Key Features of the Biotech Campaign

Swiss scientists and the pharmaceutical industry have had their previous experience with referenda, in particular, in the area of animal testing. But the campaign on the biotech referendum, which asked for a complete ban on transgenic animals, a ban deliberate release of genetically modified organisms, and a ban on patenting of plants and animals, was special in several respects. In the past, animal testing referenda were always held from a local perspective. In the biotech debate, global issues played a major role: the debate on the patent for the Harvard Mouse, public apprehension about GMO food and the rapid development of gene technology in agriculture, and the cloning of Dolly and the international debate about transgressing ethical borders.

¹ Interpharma is the trade association of Swiss pharmaceutical research companies: Ares-Serono, Novartis, Roche

Furthermore, the debate addressed the trustworthiness of industry, scientists, and authorities. On April 1996, the activists supporting the initiative published advertisements in all the major Swiss newspapers. They showed the picture of a Ukrainian child born blind, and the headlines said: *"Nuclear energy is safe. The residual risk is infinitesimally small. This is what nuclear scientists claimed until April 26, 1986, the day of Chernobyl. Today, genetic engineers claim that the residual risk of gene technology is infinitesimally small, and we do not even know the risks yet."* To make their point, within a few days, they followed up with similar ads on BSE, and again the allusion was that scientific experts were not to be trusted. Thus, the activists were trying to repeat what had worked well in the debate on nuclear energy: discredit scientists, call in question the faith in modern technology, and play up fears about residual risks.

Behind the referendum was a rainbow coalition, which brought together several dozen organisations, including such well-known names as Greenpeace, WWF, and the Swiss Society for the Protection of the Environment, but also organic farmers, and traditional conservative groups such as the Association of Catholic Women. These groups were held together by a range of broad issues touching on

- anti-technology sentiments (the residual risk debate),
- anti-science feelings (the view that gene technology was transgressing borders and was interfering with god's creation),
- a biocentric view of ethics challenging traditional Christian values of a natural hierarchy of creatures,
- an increasingly emerging anti-industry feeling based on apprehension about the forces of globalisation.

For industry and scientists, the start of the referendum campaign was rough. Despite high acceptance of biomedical research, gene technology as a whole was perceived negatively. A first opinion poll, in January 1996, showed that only 25% of the Swiss saw gene technology as something positive, 62% reacted negatively. Furthermore, the only biomedical link to the referendum proposal was through two very controversial issues: patents (Harvard Mouse) and transgenic animals.

II. Success Factors

Despite the negative environment which, in 1997, was aggravated through the debate about Dolly, the controversy about labelling of GMO food, and the importation of the first GMO crops into Europe, the Swiss campaign was a huge success. The key success factors were:

- A very *consistent strategy* focusing on the strengths of modern biotechnology, resisting attempts to 'oversell', shifting discussion from a debate about gene technology, in general, to a debate about the shortcomings of the initiative, firmly

rejecting the extreme proposals of the initiative while endorsing a proper regulatory framework.

- *Coherent and consistent messages* throughout the campaign using medicine, research, jobs, and regulation ('Yes to regulation ñ No to Bans!') as the main themes.
- The ability to *mobilise a huge network of scientists* led by the 1996 Noble Laureate in Medicine, Rolf Zinkernagel.
- The presentation of a *credible alternative* to the initiative in the form a regulatory framework called 'Gene Lex'.

The most important success factor was probably the massive involvement of scientists. Never before had Swiss scientists been involved in a political debate to this extent. The shock and outrage about the demagogic use of Chernobyl and the understanding that this was the most serious threat ever to Switzerland as a leading centre of scientific research led to a previously unseen mobilisation. Within a week of the Chernobyl advertisements, 428 leading Swiss scientists, from Nobel laureate Werner Arber to the then not yet Nobel Laureate Rolf Zinkernagel had signed an open letter to the Swiss people. This mobilisation of scientists culminated in an impressive demonstration of solidarity: On April 28, 1998, seven weeks prior to the referendum, more than 5'000 researchers took the streets of Zurich and Geneva to protest against the threat to the future of research in Switzerland.

III. Public Perception

One of the assets of the Swiss campaign is the additional insight it provides into public perception of modern biotechnology. The leading institute for political market research, GfS in Bern, interviewed a total of about 15'000 Swiss citizens in the course of two and a half years. The data, which were collected on behalf of Interpharma, show:

- That the Swiss campaign led to a fundamental change in the Swiss view of modern biotechnology. By June 7, 1998, 51% of the Swiss had a positive view of gene technology, up from 25% in January 1996, and only 31% had a negative view, down from 62% in 1996. Thus, the balanced view of gene technology had become positive, probably the most dramatic result of the campaign.
- That Swiss citizens viewed biotechnology very pragmatically. The patent issue, which was very controversial at the beginning of the debate, became a non-issue over time. And whereas Swiss citizens remained ambivalent to plant genetic research as well as animal research, the support plant genetic research if it contributes to fighting world hunger or reduces the amount of agrochemicals used. In the animal area, they support testing of medicines and vaccines but react negatively to the quest of increased productivity ñ not surprising in an affluent society.

- In the food area, the survey shows a subtle but important difference between support for GMO food and tolerance of genetically modified food. Whereas only a minority of Swiss express an active willingness to buy GMO food, by a majority of four to one they oppose a ban on GMO food and state that they want to decide themselves whether to buy or not to buy GMO food.

Comparing the sociodemographics of the Swiss biotech campaign with the debate about other ecological and environmental issues in the eighties, a major change can be noticed. The biotech debate was different from the debate about nuclear energy because the young, the wealthy, the well informed with higher education, and the urban population all reacted more favourably to gene technology than the rest of the population. Thus, in contrast to previous assumptions that information overload may lead to increased resistance, the better-informed people were, the more favourable their reaction to biotechnology.

IV. Conclusion

The result of the Swiss referendum has convincingly shown that successful communication of modern science is possible if

- scientists, authorities, and the industry accept the challenge to cope with the demands of communicating with the public at large,
- there is a clear understanding that the public's needs may often be based on psychological rather than on logic scientific reasons,
- all participants in the dialogue are willing to forego scientific jargon for clear understandable language, i.e. understand that it is hardly the public's fault if messages do not get across,
- everybody accepts that dialogue, information, and education on modern science is a long-haul task.

The Swiss biotech referendum was seen as a major threat to Switzerland as a leading country of scientific research. However, something which many people inside and outside Switzerland expected with trepidation because of the possible spillover effect into other European countries, turned out to provide the most convincing case study of successful communication on modern science. What appeared to be a major threat provided a platform for strong public endorsement of genetic research in Switzerland!



XA04C1328

BARSEBÄCK NUCLEAR PLANT FEBRUARY -99

by Ann-Christin Buch
Barsebäck Kraft AB, Sweden

- OH of the plant Barsebäck Nuclear Power Plant is situated in the south of Sweden 19 km from Copenhagen in Denmark.
Barsebäck Kraft AB is a private company, parent company is Sydkraft AB.
Barsebäck data: 2 BWR-units, 615 MW each, 1975 and 1977
- OH of Sweden There are 4 nuclear power plants in Sweden with a total of 12 reactors, 9 BWR-units (ABB) and 3 PWR-units (Westinghouse).
- Further facts: www.sydkraft.se

The Threat of a Phase out of Barsebäck 1

- Current situation In December 1998 we are awaiting the decision of the Supreme Administrative Court in Sweden whether the decision of the Swedish government to close Barsebäck 1 is in accordance with the law. We have reason to believe our legal position is very strong. The Supreme Administrative court may even forward the case to the EC Court of Justice, since the case is unique.

See Feb 24 -98 below Barsebäck 1 should, according to the government decision, have been closed before the 1st of July 1998, but the Supreme Administrative Court ruled on Stay of Execution, after Barsebäck Kraft had applied for judicial review.

In parallel with the legal process Sydkraft, our parent company, continue a dialogue with the Government, which may result in an agreement between the two parts. In that case it will result in a co-operation between Sydkraft and Vattenfall (owned by the government), where the compensation for the loss of Barsebäck 1 will be shares in Ringhals Nuclear Power plant (Owned by the government via Vattenfall). Several agreements remains to be signed before Sydkraft agrees upon a voluntary settlement.

Background

- Referendum 1980 In 1980, due to the accident at Three Mile Island, there was a referendum in Sweden about the future of nuclear power. The result of the referendum was a decision to stop at the number of 12 reactor (another xx were planned) and let those operate for 25 years. The Swedish Parliament then took a resolution to

phase out Swedish nuclear power before 2010, provided certain conditions as to energy supply and economy were fulfilled.

4th of February 1997 On the 4th of February 1997 the Swedish Agreement of Energy was official. The political parties made an agreement on closing one of Sweden's 12 reactors before the end of 1998. Barsebäck 1, one of Sweden's oldest reactors, 19 kilometres from the capital of Denmark with a high symbolic value was chosen. To make the decision possible the Government had to create a new law.

10th of June 1997 The Swedish government voted through the proposition of the law

18th of December -97 The Swedish Parliament decided upon approving the law

23rd of February -98 Sydkraft lodged a complaint against the phase-out decision in Brussels. The decision is in contravention to the competition rules of the EC. Sydkraft later applies for Stay of Execution.

On the 14th of December 1998 the District Court of Stockholm says the Stay of Execution that the supreme Administrative Court has ruled on is sufficient legal protection for the moment (see below).

24th of Februari -98 An application of 160 pages for judicial review was sent to the Supreme Administrative Court concerning the government's decision to close down Barsebäck 1 by June 30 1998.

The decision is contrary to the Swedish constitution, the European convention and EC law. No environmental impact assessment is made. The proportionality principle does not allow the phasing out of private owned reactors, as long as there are government owned reactors in operation..

On the 14th of May 1998 the Supreme Administrative Court ruled on Stay of execution regarding the Government's decision, which means Barsebäck 1 has permission to operate until the legal process has come to an end.

Swedish opinion Opinion polls (Nov -97, March -98 and May -98) shows that about 80 percent of the Swedish population want to use nuclear power until the existing reactors have to be stopped for safety or economical reasons.
About 20 percent of these want to develop nuclear power.

Local opinion Average or high confidence in Barsebäck has 94 percent on the Swedish side and 74 percent in Copenhagen 1998.

OH

OH to show opinion for the last for years.

Information Activities

From February 1997 till August 1998 Barsebäck's personnel have executed several information activities to stress our message that Barsebäck is necessary for the environment, the jobs and the economy.

How to avoid shortage of personnel

- 5 years continuous guarantee of employment to everybody at the Barsebäck Plant
- Active and rapid denial of every false alarm about Barsebäck in media, very often by e-mail from the plant manager to stop circulation of rumours.
- Developing of competence, e g IT-education
- A strategy for the future in case of a definite decision
- Keep the dialogue up between personnel and their leaders
- A bonus system
- Activities to keep physical and mental health up
- Inviting creators of public opinion. e g politicians, to have a dialogue with personnel at Barsebäck

Enclosed at PIME: Facts about Barsebäck
Annual Report 1997
Press releases about the legal process (3)
Operating experience
from Swedish Nuclear Power Plants 1997



XA04C1329

COGEMA'S NATIONAL ADVERTISING CAMPAIGN CONCERNING NUCLEAR FUEL RECYCLING

by Christine GALLOT, Assistant Vice-President, Communication

Nuclear context: a topic of discussion

- amplified by the SPD/Ecologists victory in Germany
- relayed by the media
- ...at least until the European elections in June, 1999

Goals:

- speak out in an area where COGEMA has legitimacy and is expected
- take part in the discussion to support and defend an activity that is important for COGEMA

Targets:

- back up opinion relays by reaching the general public
- back COGEMA personnel

Advertising strategy:

- what is recommended for other industries (sorting and then recycling) is COGEMA's practice for spent fuel, with very significant advantages for the community in terms of economy and ecology

Crétion:

- compare spent nuclear fuel recycling with other recycling systems, which have a widely accepted principle and a positive image
- message on the economy of the cycle, the reduction in the volume and toxicity of the wastes, the conservation of natural resources and the contribution to the fight against the greenhouse effect
- interrogative tone and setting up a toll-free number

Pre-test: a highly positive public reaction

- a federating theme which sends back a positive image (« it is technical, clean, ecological, modern, not wasteful, comforting »)
- explicit creation and interrogative tone appreciated because the individual is allowed to find his own way
- the toll-free number seen as proof of transparency

Media plan: national and regional daily written press and magazine



XA04C1330

PUBLIC AND POLITICAL ISSUES IN RADWASTE MANAGEMENT: THE SPANISH APPROACH

by Jorge Lang-Lenton, ENRESA, Madrid, Spain

1. INTRODUCTION

ENRESA (Empresa Nacional de Residuos Radiactivos, S.A.), is a State-owned company, founded in 1984 and is responsible for radioactive waste management in Spain.

ENRESA's activities are carried out in accordance with a General Radioactive Waste Plan approved by the Spanish Government.

In Spain, as in most countries, the public is concerned about many of the activities involving radioactivity or radwaste management; this concern arises for different reasons, being one of them the lack of information on the matter. This situation often leads to an information misuse by certain politicians, green groups and media, which can increase the distrust of the public to responsible companies and institutions. At the root of both these problems there is also a lack of political consensus regarding projects and related activities. To gain public acceptance, it is necessary to develop a long-term information policy since, in the field of communication, results can only be achieved in the long term.

ENRESA is carrying out an on-going Communication Plan (CP), implemented successfully in the areas surrounding a low and intermediate level waste disposal site and a 500 Mw nuclear power station (Vandellós I) which is currently being dismantled. Implementation of this plan at national level is being accomplished stepwise.

This document deals with the most relevant issues relating to the radioactive waste situation in Spain and with the efforts made in communications.

2. RADIOACTIVE WASTE MANAGEMENT IN SPAIN

The Spanish Nuclear Power capacity amounts to 7.3 GWe, this implying a volume of some 200,000 m³ of low and intermediate level wastes (LILW), including wastes from the decommissioning of all the country's nuclear power plants to level 3, and 6,700 tm of heavy metal in the form of spent nuclear fuel.

A repository LLW/ILW became operational in October 1992, following awarding of the necessary license. The facility is of the near surface type with engineered barriers. Concrete is used as immobilisation matrix. The facility is capable of housing all the wastes to be generated in Spain until the 2nd decade of next century. The facility is located at El Cabril (Córdoba) on an old, 1,200 Ha uranium mining site which was used for the disposal of radioactive wastes in the 60's, in a disused uranium mine.

3. PUBLIC PERCEPTION

„Issues are not what they really are, but what they seem to be“ . This phrase is generally applicable to public opinion world-wide, and Spain is no exception.

The general public has scarce information on either radwaste management or on activities relating to radioactivity.

Over the last few years, anti-nuclear groups have adopted a general strategy designed to combat any activity carried out by ENRESA, the aim being to prevent waste management and, ultimately, to force the closure of the NPP s.

There are three important facts that influence public opinion:

- Any action carried out by green groups.
- Some political parties use radwaste management issues against the parties in power, at national, regional and local level.
- The sensationalist news media use radwaste management without any technical or scientific basis, presenting the risks as being higher than they really are.

In addition, people are usually frightened by anything relating to radioactivity, including natural radioactivity.

At the local level at which ENRESA carries out its work, the communication plan has been applied and the situation is reasonably quiet despite which, minor opposition still comes from some minority groups.

4. ENRESAS' S COMMUNICATION AND PUBLIC INFORMATION PLAN

The CP includes a number of different actions aimed at providing information to the general public. The main actions performed may be summarised as follows:

- Visits to Information Centres or facilities. ENRESA has built five information centres, one at El Cabril, one at Andújar (where an uranium mill was dismantled), one at Madrid Headquarters, one is a mobile centre presently placed at Vandellós site, and the fifth is located in the city of Córdoba. ENRESA receives 25.000 visitors a year. These centres provide comprehensive information on radioactive waste management.
- Supply of information to specialists journalist, politicians and other opinion leaders, at local and national level. This includes visits to facilities abroad.
- Organisation of courses on radwaste management for teachers, doctors, politicians, journalist, etc., at local and national level.
- Sponsorship of information events and special publications (seminars, courses, journals, magazines, etc.), educational support, etc. ENRESA sponsors associations of high prestige, such as the Red Cross, WWF, etc.
- Edition of three magazines at national and local level: these publications have a circulation of 7.000 copies, and are sent to publics of interest.

- Other editions: these are mainly books on radioactive waste management and brochures on general and topical matters relating to ENRESA's activities.
- Videotapes: Videotapes are used at the information centres to explain different items. There are also other videotapes on specific topics and research and development projects.
- Socio-economics issues: This section includes the following actions:
 - Studies on the socio-economic situation of the areas surrounding the sites.
 - Cooperation with Local Administrations with a view to optimising the resources generated by ENRESA.
 - Training programmes for people working on site. Identification of local companies and services, in order to use them during the building and operation of the facilities.

In addition, in December 1989 the Ministry of Industry and Energy, issued an Order granting a certain economic compensations to communities located around waste storage or disposal sites, depending on the distance, population, category and volume of the wastes considered.

Public relations. In this field, the following activities are being carried out:

- Periodic personal contacts and information to opinion leaders (political, economical, etc.)
- Meetings with local authorities from the areas surrounding the sites, on a yearly basis.

5. RESULTS

From the very beginning the situation regarding public opinion was one of clear opposition. At regional level, and particularly in the area surrounding the El Cabril site, both the general public and the opinion leaders were opposed to any action by ENRESA. This opposition included some anti-ENRESA demonstrations right in front of the main entrance to El Cabril. At national level politicians, journalists, etc., did not show much confidence in ENRESA's activities, and the information published in the newspapers was always negative. The CP was applied right from the start, and after some time public perception began to improve little by little.

The CP having now been applied for ten years, the situation is currently follows as:

- At regional level, the general public visiting the El Cabril facilities show confidence as regards ENRESA's activities because they see first hand the function of the plant during the visit. After the visit they feel that the work is performed professionally and carefully.

Most opinion leaders, such as politicians, teachers, etc., have received information, courses, etc., from ENRESA and they now respect the work carried out by ENRESA.

Finally, all interested journalists receive all the information they need directly from ENRESA. Nowadays, the information they receive about ENRESA is generally verified with ENRESA spokesmen. They frequently visit the El Cabril facilities, and sometimes facilities abroad. All the above allowed ENRESA to obtain the necessary licenses for El Cabril.

- At national level, ENRESA has gained the respect from both politicians and journalists. This does not mean that they would support any kind of work to be performed by ENRESA, such as siting of a HLW repository, but nowadays it is becoming unusual to find newspaper articles on ENRESA that are not based on facts.

The degree of skill achieved by ENRESA shows that with the support of the Administration, as has been the case to date, and by informing the public and their opinion leaders, it is possible to achieve objectives in radioactive waste management.



XA04C1331

THE COMMUNICATION STRATEGY OF WONUC

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The communication strategy of WONUC is based on an analysis of the sensitivity of members of the European Parliament to nuclear energy. From this analysis WONUC decided to focus on a main mediatic event and to increased scientific and technical information on the main sensible topics for the European Members to create in the cognitive way of the general but negative consensus about nuclear energy, an alternative to the green voice misinformation process and be able to catch any opportunity to reverse this negative feeling.

Such opportunity arise with the United Nations' debate about the pollution credit so-called « flexible mechanisms », in COP 4 (Buenos Ayres, 2-13 November 1998).

THE ANALYSIS

Three parties have a strong influence on the nuclear issue: the socialist party and the PPE. This is not at all surprising since these two parties dominate the European Parliament in terms of number. The third party is obviously the Greens.

- Two countries are substantially active in this debate: Germany and Great Britain (Labour MPs).
- Greece, Finland, Denmark and Italy, and to a lesser degree, Luxembourg and Sweden, appear nearly completely uninterested in the nuclear issue. This may seem surprising for Finland, a significantly nuclearized country, which is again raising the question of the construction of a fifth reactor, and for Sweden, since the nuclear debate has recently intensified.
- The "unconnected" groups, like the "Europe of Nations" Group, a political group opposed to the present form of construction of Europe and preferring a confederate approach to the federal approach, appear to be uninterested in nuclear energy.
- Paradoxically, the Greens do not seem to care about the "environment" issue. The same applies to "health", "waste", and "radiation", which is surprising considering the activism of this party for everything associated with "zero" releases. Hence it is difficult to understand the deliberately partisan approach of this political group concerning nuclear issues, in attempting to explain this behaviour.
- Among the Socialists, three sub-groups can be distinguished: British, Germans and the "others". The attitude of the German social democrats is strictly determined by the group of the Greens, to whose influence they unwaveringly submit. The "other" Socialists, apparently unconcerned with taking any political risk, match their attitude to that of the German social democrats. Within the European socialist party, the British Labourites represent a specific sub-group. They have a much more critical attitude towards the position of the Greens. Their behaviour to nuclear energy is constructed on a substantial knowledge of the nuclear "fact", which probably enables them to escape the influence of the Greens, unlike the other Socialist MPs.

5.2. It clearly appears that the behaviour of the Greens is a partisan behaviour, focused on a precise objective, the abandonment of nuclear energy in Europe. To achieve this end, the Greens now focus their attacks on the back end of the cycle. The exemplary technological breakthroughs in power generation by the nuclear power plants as well as reprocessing thus have a very small political weight, since these technological successes are "normal" facts for the MPs, few of whom have a technical culture.

Note the recent emergence of a new topic, initiated by the Greens, the ageing of the power plants and associated safety, an issue which, by reference to the now classic strategy of the ecologists, will shortly be picked up by the Socialist MPs.

Note also the very recent emergence of a new and hitherto completely ignored topic, the issue of ionising radiation and its effects.

In terms of questioning, the Greens, "blindly" followed by the Socialist group, except for the British Labourites, practise systematic suspicion, making an amalgam between technical objectivity which is admittedly not infallible, and the subjectivity of an uncertainty which, when translated according to the precautionary concept, leads to prohibiting everything. Faced with such an amalgam, it seems difficult to develop messages strictly based on Cartesians, since the confusion arising in the minds makes them impenetrable to any logic, allowing only a propagandist obscurantism to infiltrate, greedy for collective phantasm and ancestral fears.

CONCLUSION OF THE ANALYSIS : IN A SAME COMMUNICATION POLICY, COMMUNICATION STRATEGIES SHOULD BE QUITE DIFFERENT, IN LINE WITH POLITICAL LEANINGS:

1. Any attempt at dialogue with the Greens seems fruitless.
2. Major communication efforts could be made in the direction of the Socialist group, the biggest in the European Parliament. Within this party, due to their differing activisms in terms of form and content, the British and Germans represent two specific but distinct targets. Also in this political entity, the other countries, including France, represent a third category of MPs which, apparently lacking a clear doctrine towards nuclear issues, is strongly influenced by the mediatically strong positions taken by the Greens.
3. The question of the Communist MPs, also members of a political group in which the ecologists are strongly represented, is vague.
4. The overwhelming majority of the remaining political parties have no hard and fast position on the nuclear issue. Their view is nonetheless polluted by "electrical pragmatism" which makes nuclear energy politically incorrect. These MPs often tailor their position to reflect their view of current issues.

5.3. In apparent contradiction with the premise underlying the methodology selected for this study, a detailed analysis of the chronology of the issues addressed by the European MPs demonstrates the tremendous importance of the news. Through their questions, as expressed in the basic premise, the MPs attempt to build an image *aimed at their peers*, thereby implying a relatively endogenous functioning of the European Parliament, which could accordingly be considered unconcerned with outside rumours.

This interiorization of the European Parliament only occurs in a second stage, after the external hubbub has established the determinants of the societal environment on which the MPs take a position. This positioning takes shape in accordance with the indications that the MPs interpret, indications stemming almost exclusively from the media, for those MPs whose nuclear convictions prove somewhat inconsistent. These MPs shift their political position in accordance with the conjectures they have derived from these indications.

In point of fact, the positioning of the sensation hungry media is substantially determined by the communicative aggressiveness of the antinuclear ecologist organisations.

Their strategy is deceptively simple. Through a body of questions narrowly targeted at a specific subject, the Greens first sensitise the European MPs to an issue they hitherto ignored. A number of cases "cunningly concealed" from the public at large and the political decision makers in particular are then unearthed with the appropriate media fanfare, corroborating the cogency of the questions previously submitted by the Green MPs. Their natural "allies" join the fray, for fear of being upstaged on issues they consider electorally promising. As to the mass of European MPs, noting the "veracity" of the Greens' intuitions, and reluctant to take position on a subject on which their knowledge is shaky, they allow themselves to be swept along by the majority tide, even if most of them suspect manipulation.

It is abundantly clear that these organisations are completely in cahoots with the Green group. It is equally clear that these organisations have the Green group entirely at their disposal.

The fascination exerted by the Greens on the German social democrats, the influence of the latter on the European Socialist Party, and ultimately, the political weight of the European Socialist Party on the European Parliament, explains why the European Parliament is so accommodating to the nuclear positions of the Greens. This represents an astonishing distortion of a parliamentary process that is nothing if not undemocratic, but which appears to be accepted unquestioningly.

GENERAL UPDATES AND BREAKING NEWS



XA04C1332

The opening of the AEC to the general public

Robert Deloche
CEA, Paris, France

The relationships between science and society have evolved considerably over the past years, just like the perception of the nuclear industry in the French public opinion.

Recent psychosociological surveys show that only half of the French population is familiar with the CEA and that the public would like to obtain new elements of judgment in order to be able to develop a direct appreciation of the activities of a research organization such as the Atomic Energy Commission. It is essential to meet the public's expectations, to keep it properly informed of the CEA's research activities, and to help it understand the relevance of the results obtained and the solutions offered to decision-makers, i.e. industrialists and public authorities.

One way to answer the public opinion's questions and to meet its expectations is to allow a growing number of visitors to see who we are, what we study in our laboratories, and how we work to contribute to scientific progress and to the diffusion of technology, in a manner that is useful to society as a whole.

This describes the spirit and the objective that governed the very idea and elaboration of the program entitled "Opening of the CEA to the general public". This operation consists not only in having communication specialists guide visitors throughout the facilities and equipment of the CEA, but also in encouraging researchers and groups of visitors to meet in the laboratories.

A "CEA - communication" network is under construction. It already has nearly 600 members. Communication is considered to be a real calling that falls within the scope of the CEA's strategy, and the work accomplished in this respect is recognized to the same extent as research. To this end, a charter for the CEA - communication network will be signed by every contributor and manager.

A training scheme focused on public speaking and scientific vulgarization was initiated. 50 members of the network have already been trained, and 250 will be in 1999.

The organization of this high-scale communication operation and the first results achieved will be presented, along with the objectives the CEA determines for the coming years.



XA04C1333

STATUS OF THE ROMANIAN NUCLEAR POWER PROGRAM AND THE STRATEGY RELATED TO THE PUBLIC INFORMATION -

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1. Introduction

The year 1997 represented for the Romanian nuclear power sector the year of the performances and capabilities proved Cernavoda NPP's unit 1 operation, after one year of successful operation. Good performances of this unit could represent a positive impact on further development of nuclear power in Romania, considering first the completion of Unit #2 and for National Heavy Water Reactor Program.

On the other hand, "The years of 1997 and 1998 marked for the Romanian Electricity Authority a new and completely different perception of the Romanian power sector".

Recently, the first step of the restructuring of power sector has been accomplished. The Romanian Government approved the creation of **the National Power Grid Company** and the moving-out of the nuclear activities.

The present Nuclear Power Group from RENEL was transformed in a separate entity, the **National "Nuclear Electrica" Company**, including three subsidiaries, no legal persons, one for nuclear power production **CNE-PROD** (Cernavoda Unit 1), one for nuclear power development **CNE-INVEST** (Cernavoda Unit 2 to 5) and one for nuclear fuel fabrication **FCN** (Pitesti Nuclear Fuel Plant).

The other Units from Nuclear Power Group, such as the Heavy Water Plant - **ROMAG**, Center of Technology and Engineering for Nuclear Projects - **CITON** and the Institute for Nuclear Research-Pitesti - **ICN** have been transformed in a state owned company - regie autonome type - for nuclear activities.

To better understand the aspects related to the nuclear power in Romania and the necessity of the continuation and development of a public information strategy based on the new look of the nuclear power sector, please, allow me to present you a few things with regard the Romanian nuclear program.

2. Cernavoda Nuclear Power Plant

The Romanian nuclear power production is located on **Cernavoda Site**, in Dobrogea region on the right side of the Danube River, about 180 km East of Bucharest. The site consists of five units, of 700 MWe each, one in operation, one in construction and three preserved in different stages of construction.

Unit #1 was completed under the Project Management Contract (PMC) concluded between RENEL and AECL-ANSALDO Consortium (AAC). This contract was the first significant co-operation action of western organizations and a utility of Central and Eastern Europe for the completion of a Nuclear Project. Cernavoda NPP is the sole nuclear facility in Eastern Europe effectively relying on Western technology and on internationally recognized safety criteria.

The Cernavoda Unit 1 reactor started the commercial operation from December 2, 1996 and the total generated power produced during its lifetime, to October 1998, represents 11,095,358 MWh with a gross capacity factor since in service of 86.19%. During 1997 the gross generated power represents 5,400,855 MWh and the net power delivered to the grid represents 4,966,250 MWh, about 10% of the overall power production of the country, saving 1,35 million tones of imported oil, equivalent of about US\$ 110 millions. The gross capacity factor achieved during 1997 is 87,27% and for the firstten months of 1998 is 83.59%. The forecast for 1998 represents 5,000,000 MWh delivered to the grid

Since June 30, 1997 the entire responsibility of Unit 1 operation was transferred from AAC to Romanian operation team and starting with August 1, 1997 the Probationary Operation Licence was issued by the Romanian Regulatory Body CNCAN. A small team of Canadian and Italian consultants are providing advisory services to the Romanian operators, starting with July 1, 1997.

At the end of 1997, 75% of the nuclear fuel in the Cernavoda reactor core, irrespectively, about 3500 nuclear fuel bundles, was fabricated by the Romanian Nuclear Fuel Plant-Pitesti.

Today, all Unit 1 reactor core contains nuclear fuel produced in Romania.

The heavy water for the Unit ' 1 initial loading and maintenance was supplied by the Romanian heavy water plant - ROMAG.

Now ROMAG is producing heavy water for Unit #2 from Cernavoda.

The "soft" support for the Romanian Nuclear Program is provided by the **Nuclear Research Institute** - ICN for specific Research and Development (R&D) activities and by **Center for Nuclear Projects Engineering and Technologies** - CITON for design and engineering activities.

As far as **Unit 2** is concerned, the work schedule for its completion and commissioning by the year 2002 represents an integrate part of the Romanian Government developing strategy for the power industry. A Governmental decree has declared the Unit 2 a national priority for the next five years. To this effect through Prime-Minister's decision, an Interdepartmental Committee has been established to follow-up the negotiations and completion of the contracts for the Cernavoda Unit 2.

The preliminary analysis assessed the total construction progress of Unit 2 at about 25% and the components already procured at about 70% of the whole procurement. The capital cost assessed for Unit 2 completion is 750 MUS\$ (January 1995 values).

As it concerns the others Units of Cernavoda NPP, **Unit 3** is foreseen to be commissioned after 2005 and **Units 4 and 5** are scheduled to be completed after 2010.

3. Public Information Program Strategy.

The main targets considered when assessing the strategy related to the public information were:

- education and built-up of a credibility on the construction of a nuclear power plant in general, and of the Cernavoda NPP, in particular;

- once such a credibility has been gained, there should be some guiding of the policy to maintain and amplify this trust and, at the same time, to prevent and monitor the situations of crisis.

Starting from these consideration a Public Information Program has been initiated some years ago, a program whose main target has been and still is the education and information of the people.

When developing the Program, three parameters were considered:

1. the audience should the focus on;
2. items of interest;
3. the most adequate educational, information and communication methods.

The audience

To whom an information program should be addressed at first?

This is a question which can get a very simple reply: to everybody: To all those that the complete success of an action depends on.

Methods

- Elaboration of written documentation
- Educational programs for the young generation
- Advertising materials
- Visits on the nuclear objectives' sites
- A permanent connection with mass media
- Relationship with Local Communities

Suggestions for the Future

- Caring out educational programmes for young people
- Arranging at cernavoda NPP some points for checking the radiation level and
- for studying the influence of radioactivity on the living beings
- Caring out computer assisted education programmes
- Establishing a new relationship with mass-media
- Accomplishing an adequate information
- Advertising actions
- Establishing new relationship with non-governmental organisations and local
- communities

4. Conclusions

These are only some aspects related to the nuclear power in Romania and in the Public Information strategy.

The conclusion is that for Romania nuclear power based on PHWR technology is a valid, safe, economical and ethical option and the one year and half commercial operation of Unit #1 from Cernavoda NPP fully demonstrated it. The restructuring of the nuclear sector has to relay on clever decisions, to maintain a "unity in diversity" of this industrial and scientific sector of the country.

On the other hand, it is our every day and future target to make clear most aspects on the nuclear energy, in general, and on nuclear power plant - the Cernavoda NPP, in particular, and to bring at everybody's hand as much as fresh and accurate and correct information on the nuclear issues of interest.



XA04C1334

PA activity by using Nuclear Power Plant Safety Demonstration and Analysis

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(1) Introduction

In this session, INS/NUPEC presents one of PA methods for nuclear power in Japan, „***PA activity by using Nuclear Power Plant Safety Demonstration and Analysis***“, by using one of videos which is explained and analyzed accident events (Loss of Coolant Accident).

(2) Safety Regulations of the National Government

The National Government is fulfilling its role in the ensuring safety of nuclear power plants through safety regulations. In other words, The National Government set forth and establish the safety examination guidelines for siting, safety design, and safety evaluation of nuclear power plants, then The National Government supervise that these are observed well enough to make sure of ensuring safety.

Safety regulations of The National Government are strictly implemented in licensing at each of basic design and detailed design.

Safety regulations made at basic design and detailed design stages (Safety Examinations), are designed to confirm that a given nuclear power plant is sited and designed satisfactorily by meeting relevant safety examination guidelines so that the safety of nuclear power plants can be secured. Safety demonstration and analysis is part of such safety confirmation efforts. „Flow of safety regulations“ is shown in Fig-1.

(3) Safety Demonstration and Analysis of INS/NUPEC

To support safety regulation activities conducted by the National Government, INS/NUPEC continuously implement Safety demonstration and analysis.

With safety demonstration and analysis, made by assuming some abnormal conditions, what impacts could be produced by the assumed conditions are forecast based on specific design data on a given nuclear power plants. When analysis results compared with relevant decision criteria, the safety of nuclear power plants is confirmed.

The decision criteria are designed to help judge if or not safety design of nuclear power plants is properly made. The decision criteria are set in the safety examination guidelines by taking sufficient safety allowance based on the latest technical knowledge obtained from a wide range of tests and safety studies.

Safety demonstration and analysis is made by taking the procedure which are summarized below.

Depending on assumed events, necessary models of nuclear power plants and others are prepared. Then, by setting specific conditions (analysis conditions), associated with such states of nuclear power plants as the normal operation, the abnormal events, or the accidents, behaviors of a reactor and others are simulated by using a computer. Results of analysis are compared with relevant decision criteria.

All of Safety Demonstration and Analysis of INS/NUPEC are reported to the National Government, therefore these are very useful to Safety Examinations of the National Government.

(4) *PA activity of INS/NUPEC*

In the beginning, rather simple pamphlets and videos were prepared being addressed to the public general. These briefly described results of safety evaluation on each of the abnormal events and the accidents. Some of the safety equipment was relating to safety brought to an end of the abnormal events.

In later years, many opinions had been received on those initial versions which results of safety evaluation on each of the abnormal events of the pamphlets and videos, commenting that they are not effective to give a whole scope of the safety concept. A new strategy was set up that the pamphlets and videos would give a comprehensive introduction on the safety and the safety analysis to those who were interested in achieving safety of nuclear power plants.

And now, INS/NUPEC promote PA activity by using Safety Demonstration and Analysis under Safety Examinations of the National Government. Of course, PA activity of INS/NUPEC stands on a whole scope of the safety concept.

These pamphlets and videos have been used by the lecture not only electric power corporation and public organization for nuclear power, but also universities, etc. „Actual numbers of distribution in 1997“ is shown in Fig-2.

(5) *Conclusion*

In Japan, various PA (Public Acceptance) pamphlets and videos on nuclear energy have been published. But many of them focused on such topics as necessity or importance of nuclear energy, basic principles of nuclear power generation, etc., and a few described safety evaluation particularly of abnormal and accident events in accordance with the regulatory requirements.

In this background, INS/NUPEC has been making efforts to prepare PA pamphlets and videos to explain the safety of nuclear power plants, to be simple and concrete enough, using various analytical computations for abnormal and accident events. In results, PA activity of INS/NUPEC is evaluated highly by the people.

Fig-1 Flow of Safety Regulations

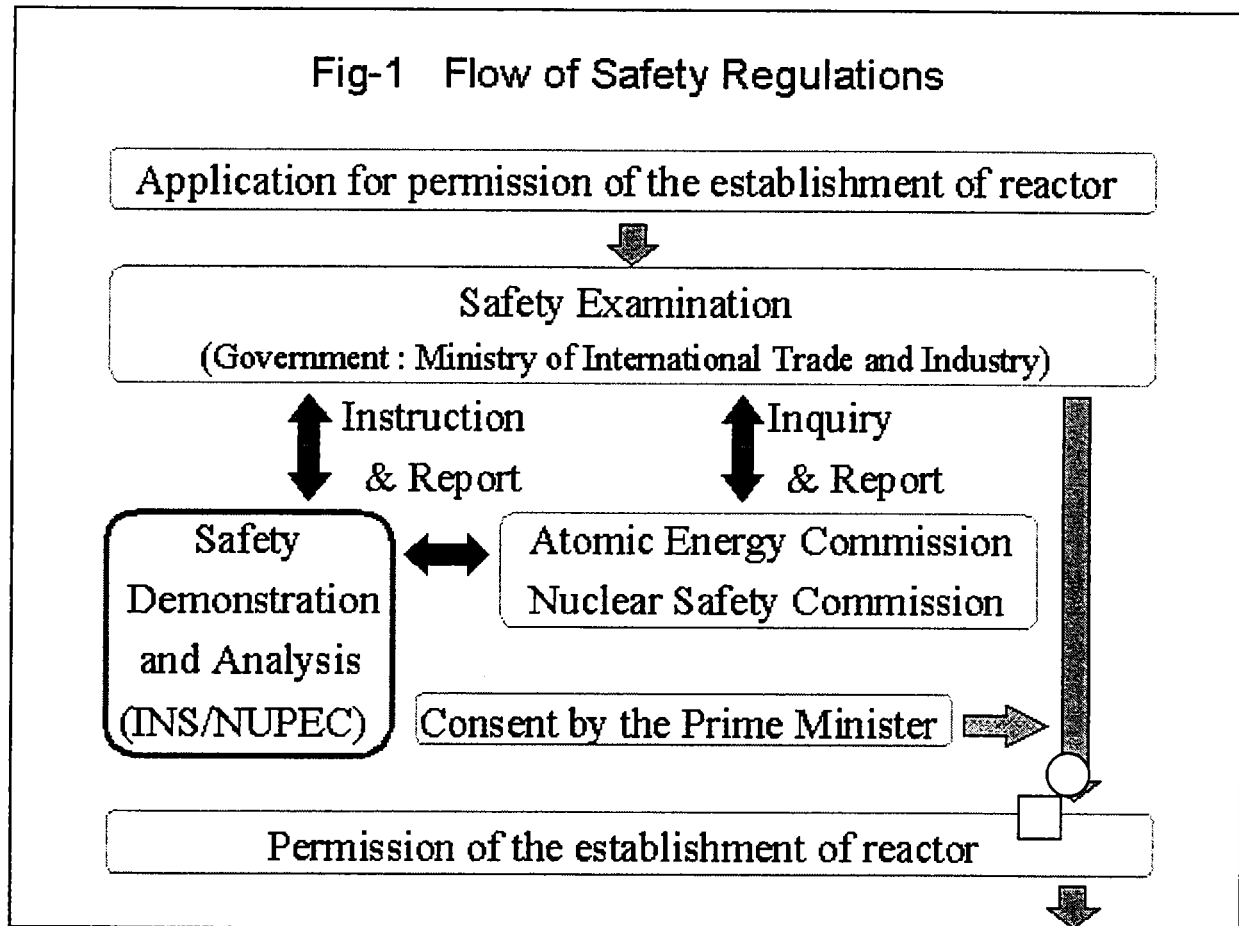
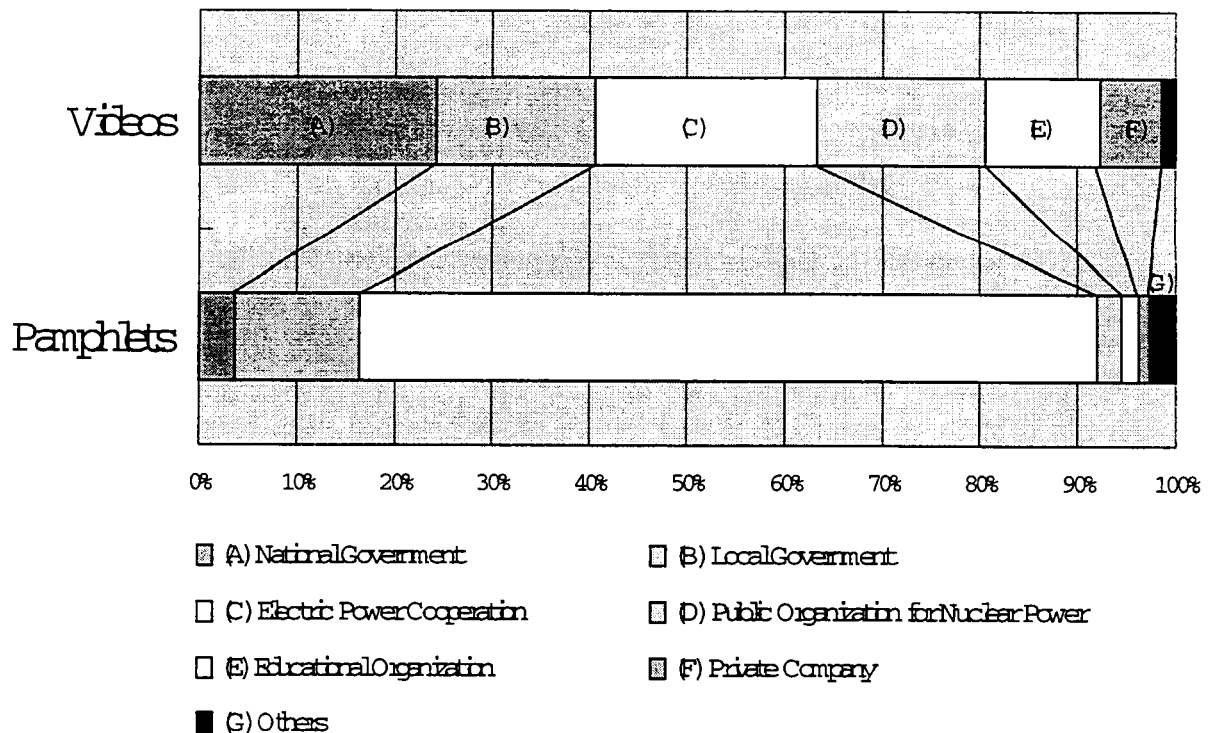


Fig-2 Ratio of Distribution in 1997





XA04C1335

COMMISSIONING OF MOCHOVCE 1 - IMPORTANT ACHIEVEMENT OF THE WORLD'S NUCLEAR INDUSTRY

Robert Holy & Rastislav Petrech, Slovenske elektrarne, a.s., Slovakia

The nuclear power industry has been recently perceived by the general public as a specific industrial branch stretching its activities far beyond the conventional industrial standard. Similarly, the stage of testing and commissioning of a nuclear power plant is perceived as a specific stage in the plant life-cycle. This is a complicated process not only in technical terms, but in the context of nowadays, it is also one of the key periods in terms of public relations and public acceptance. The stage of commissioning unit 1 of Mochovce Nuclear Power Plant evoked a real communication media war between defenders and opponents of the nuclear industry started early in 1998 in Slovakia, as well as in other, mostly neighbouring countries. Professor Wolfgang Kromp of Austrian Institute of Risk Analysis, picked up by the Austrian Government as a nuclear expert, and driven by anti-nuclear forces of green organisations on one hand, and the Director General of Slovenske elektrarne backed up by a strong scientific and technical background of the Slovak as well as top international experts on the other hand, were the admirals in the war. It should be noted, however, that the Mochovce plant has never been a technical problem as confirmed a number of international regulatory missions and audits, even though its construction was stopped in early 90's. The result of the war was more or less clear to a thinking human being - a compromise could have been the only result. The compromise which is in fact a victory of the side of technical development, and loss of those lobbying for a nuclear-reactor-free central Europe.

This article brings a review of events that accompanied commissioning activities of Mochovce NPP unit 1 which were important in terms of public relations.

One of the basic tasks of our company, Slovenske elektrarne, is to maintain a permanently good relations between the Operator of a nuclear facilities and the public. We want to be an acceptable and trustworthy partner in communication. Our information and communication policy was based on the three major principles: openness, frankness and transparency. The prime role of the commissioning information and media campaign was to inform the broad public about the need of completing the plant for the national economy and energy independence of Slovakia, as well as informing about important milestones of commissioning. A few years ago a Journalist Club has been established at the utility's headquarters where journalists from the largest national dailies regularly receive first-handed and qualified information on the company as well as its achievements in the energy sector from the company's top management. So we used those journalists to propagate our ideas. Indeed, the period of spring and summer 1998 was in sign of enormous interest of news media about the unit 1 commissioning, as well as related national and international political debates.

The green NGO's, however, were not sleeping meanwhile. They also timed their anti-nuclear campaign very well, but the preparation was rather bad since it resulted in quite a negative response in Slovakia. But not in Austria. The campaign was officially launched in February when the Austrian Global 2000 demanded that candidate countries for entrance to

the European Union would give up their nuclear programme and requested the Austrian Government to strengthen the declaration with a threat of a veto power in the voting.

In April 1998 Greenpeace organised a 120 km walking tour from Mochovce to Bratislava on the occasion of the 12th anniversary of the Chernobyl accident, and on the day of the first fuel assembly loading in Mochovce reactor 1 a group of 6 Greenpeace activists, bound with chains to each other, blocked the main site entrance. After a police force action they realised this was no way of stopping the commissioning activities and the anti-nucs put all their efforts in making noise through media. The last “physical” action by the “greens” was a conquest of the Slovak Embassy in Vienna that was a diplomatic scandal. Therefore there is still a question: how far is their cheek and stupidity reaching?

Mochovce plant was one of the few issues which the polarised Slovak political scene had the same opinion of, despite all contemporary political problems. Based on the Austrian Government's request a decision was taken by the Slovak Government to allow an international team of experts under Austrian leadership to make a review of Mochovce NPP prior to start of the operations. The task of the team called Walkdown II was to inform the Austrian public and Government about actual status of safety measures implementation. The visit was to be conducted at the beginning of May. However, the first fuel loading was scheduled on April 27. And this was the prime issue in bilateral discussions between the Slovak Prime Minister, Vladimir Meciar, and the Austrian Chancellor, Viktor Klima. Klima requested the initial fuel loading be postponed until the review is completed. After a more than one-hour phone call with the Director General of SE, Meciar promised that the fuel loading would not be stopped, but it would not be activated until the visit is finished.

The Walkdown II itself was conducted under a chaotic leadership by prof. Kromp, but in a good friendly atmosphere among the experts. The preliminary results were presented at the final discussion of the international experts with the utility's top management. Fortunately, it was video-recorded. The statements were very positive and Kromp was trying to warn “his” experts that the statements should not be so positive because these are not the final results. But also Kromp himself expressed surprise about how much we did for the safety since his last Walkdown I visit. He admitted that he could not say the same in Austria. His opinions on Slovak plants always change at the Slovak-Austrian border-line.

Since the team expert's judgements were favourable for the plant it was necessary for the Austrians to search for a disguise to make the commissioning progress delayed. And suddenly Mr Meyer found out a problem with our reactor pressure vessel welds. He used to work in the former East-Germany VVER plant Greifswald, however, since 10 years ago he has been working in the information technology industry. What an expert! And the media war between Kromp and SE had been launched. At this time we needed the support by the third parties very much. Very important were not only statements of our international contractors - Siemens and Framatome - about their opinion on the plant safety, but also statements of independent institutions, such as our regulatory authority, IAEA, and ENS. Our company was open to a reasonable dialogue and it was necessary to resolve the conflict of the two neighbouring countries. Being aware of their truths and possible consequences both the parties turned to the IAEA to resolve the issue. The Agency were a little bit reserved at first for they didn't want to be an arbiter in this contention; but finally agreed to mediate the discussions and to provide their scientific and technical background for the discussions.

In planning activities in support of the unit 1 commissioning we did not forget activities of an international character. The track of the third MaxiMarathon, regularly organised by the WONUC, was intentionally selected in 1998 to provide support of the central Europe N-plants. The 450 km long relay-race track started in Budapest, passed through Slovakia, Czech's Dukovany NPP and ended up at the Vienna's IAEA. The representatives of nuclear workers from all over the world submitted their message to the IAEA's General Director and signed a petition of Mr Maisseu to the Austrian Chancellor Viktor Klima in support of Mochovce I commissioning. I would like to give many thanks to all those who expressed their support to our plant at this time.

This story ends up with phasing the unit 1 in to the grid, reaching full power and the IAEA experts' statement that the pressure vessel meets all designed and international standards. The Austrians lost the war, as commented Austrian news media. The operation licence for the unit 1 was granted in October 1998. In the end I'd just like to point out, and I hope you agree with me, that non-commissioning of this plant would be probably a crucial precedent for the world nuclear power industry and it would be much more difficult in the future to put new nuclear plants in operation, hence worsening the major plans of the mankind to reduce or stop global warming and related environmental problems.



XA04C1336

Belgonucleaire's emergency exercises; report on communication experiences

Sabine Van Depoele, Belgonucleaire

The purpose of this presentation is not to have a theoretical explanation about risk communication but rather to give some practical communication hints we learned from the Regional Emergency Exercise Belgonucleaire had a few months ago.

Belgonucleaire fabricates MOX fuel since 1973. MOX is an abbreviation of Mixed Oxide, a mixture of uranium and plutonium oxides. It can easily replace the uranium oxide fuel commonly used in nuclear power plants.

This fuel is produced at Belgonucleaire's plant at Dessel, which is located in the vicinity of other Belgian plants related to the nuclear sector.

Every year Belgonucleaire organises an Internal Emergency Exercise and every 3 years a Regional Emergency Exercise. The purpose of this Emergency Exercise is to make sure that Belgonucleaire is capable of successfully handling in cooperation with the other plants in the nuclear sector, the authorities and security teams a hypothetical crisis scenario.

The scenario elaborated this time was that due to a tear in a glove some radioactivity was emitted and because the filter system failed some of this radioactivity came into the air. Some contamination could be measured.

The goal of this Emergency Exercise is multiple:

- To bring under control and to master an emergency situation, which can suddenly or gradually arise, by co-ordinating and eventually providing intervention teams and action means in order to restrict as much as possible the adverse consequences of the situation on the site and on the environment.
- To emit an immediate warning to and to protect the employees and the visitors present on the site.
- To communicate essential information to the security service and co-ordination centre of the government in conformance with the emergency plan for nuclear risks on the Belgian territory.

Communication plays a vital role in this emergency organisation plan.

It concerns contacts with the authorities (at federal, regional and local level), the nearby-located plants, the support- and emergency services and last but not least with the media.

In case of an incident or accident an emergency room is immediately set up on the site. One of the main tasks of the staff in the emergency room is to inform the General Management at the headquarters in Brussels. The communications officer in Brussels will in co-operation with the general management establish the press contacts.

In addition a communication cell was set up at the Dessel Town Hall.

This was done for 2 essential reasons:

- journalists like to come to the place of the incident. They prefer first hand information and like to have pictures and/or interviews with the people involved.

When an incident or accident has happened it is not possible to come to the site. Therefore it is useful to have a contact with the journalists on a neutral place away from but nearby the place of the accident.

- Even though it is the responsibility of the authorities to inform the population, additional information from someone from the plant itself can be very helpful.

The government has to inform via the media the general public. Especially, information which has legal or political implications should be handled by the appropriate authorities. In other words the company can't inform the media about the consequences of the incident to the public and the environment. Belgonucleaire can only give information about company related aspects.

This means that press material can be published in advance and held for a crisis. We prepared such material including fact sheets on generic safety issues, photos, maps, biographies of key officials etc.

An established relationship with all of the organisation's stakeholders based on credibility and trust is the best insurance policy for handling communications during a crisis. This is indeed a process we work on the whole year round.

A proactive communication policy is necessary because communication at the moment of the accident is, given the stress, very tough.

The primary objective of risk communications is not to change public opinion about the extent of the risk but rather to build trust about the corporate commitment to

contain and control it. Efforts to educate about systems which control and reduce risk and work to contain it can give the outsider confidence.

Such communications tell the audience that the corporation is not minimising the concern but actually shares the concern. And a company which is perceived to share a concern about risk is a company which the public is more likely to trust to deal with the accident effectively.

So Belgonucleaire tried to follow the basic rule of crisis communications.

This rule of risk communications is to devise a message as soon as possible which answers the question: „What are we going to do about it?“ The more a communicator can focus attention on solving a crisis problem, the more likely he might be able to convince the audience that the crisis will pass and the company can be trusted.

A similar principle also applies to risk communications. The most credible message the public can hear from a corporation is not that the risk is small but rather that the corporation is working hard to manage and minimise it.

Unknown risk impact	
Voluntary	involuntary
Space fight Working in a chemical plant	Nuclear war Nuclear power Living near a chemical plant Food poisoning Asbestos
Smoking Flying Driving Trampoline Skiing	House fire Common cold
Known risk impact	

If a risk is perceived as unknown, unseen and unfamiliar, it is far more likely to create threat and therefore become unacceptable.

The lesson of the matrix is the power of the emotional dimension. Risks in the upper right quadrant are inevitably overestimated. Scientific risk assessment may show several of the risks in the upper right quadrant to be far less probable than some in the lower left, but the public perception will simply not reflect that reality.

Public perception about risk does not follow logical patterns.

Normal communication procedures do not seem to function.

The most useful risk comparisons are those which compare a company's risk statistics to allowable government standards.

So, in our scenario the emission of 100 Bcq was compared with the government standard of 3.7 Bcq. Even though you give objective information by comparing two standard elements people like a comparison with a controlled, familiar risk.

Sometimes it was hard to keep in mind that a risk comparison should always stay within the same quadrants of the matrix.

We also learnt from the exercise that it is very difficult to ensure that the authorised spokesperson has to be the only person who can issue press releases or speak with the media.

Journalists come to see you, several of them like a quick answer on the phone etc. This means that communication must be managed by several persons who should have, during these hectic moments, a very specific task such as contact with the emergency room, the general management, the journalists on the spot and the ones on the phone.

The media is most likely to cover the human side of the story not the statistical side. The media is interested in a strong statement, in the politics of a risk issue rather than in the science of the risk issue.

We prepared a lot of material, to meet the reporters' needs. But they keep insisting on the human side.

Therefore it is important to act and think like a person before you serve as a spokesperson. Gauge the emotions of your audience and recognise that the company is creating uncertainty in their lives. Speak sympathetically and never use logic to combat an audience characterised by outrage. When an audience is outraged, listen.

An essential part of a successful risk communications programme is the ability to start your risk discussions with an audience, which is already well aware of the economic and social benefits of a company and its products.

Communicators dealing with risk issues must build these equities now and continue to do so, since new issues can surface at anytime. But benefit communications must always be on a separate track from risk discussions.

A community's willingness to tolerate the risks of a plant will be strongly influenced by public feelings about the contributions of that facility to the community and the value of the company and its products to the broader society. There is a continuous participation of Belgonucleaire in the social and cultural life of the community of Dessel in visible community priorities.

Even though we are aware that it is a crucial element an emergency exercise can't evaluate how beneficial these contributions are.

For the media and for the public, the corporation will be one of the least credible sources of information on its own product, environmental and safety risks. Both these audiences will turn to other experts to get an objective viewpoint.

Communicators should consider a programme of briefings of key outside experts who carry weight with the media and the public as credible sources of guidance on risk issues.

To ensure that some of these third party experts become enthusiastic supporters Belgonucleaire made them part of the corporate communications mix.

At the moment of the accident it was important, but almost neglected, that these third party was personally briefed by company officials on basic risk information on the corporation's key messages. To the extent that some of these third parties seem to respond positively to the corporate perspective, one should (with their permission) encourage reporters to call them for commentary.

The ultimate aim of any communications plan, particularly in a risk situation, is to ease fears and return the situation to a pre-existing steady state of equilibrium.

So, what is necessary is a sense of some form of control, a mastery of the situation that itself will create confidence. This does require that the corporation respond positively to the spirit of disclosure, and be willing to listen and respond positively to public concerns.



XA04C1337

SPANISH OPINION POLLS 1998

Maria Pilar Nuñez Lopez
Foro de la Industria Nuclear Española, Madrid

There is widespread conviction among the professionals working in the nuclear sector that the image of nuclear energy held by the general public is poor. In Spain we insist time and time again that an overwhelming majority of people consider nuclear energy to be dangerous, contaminating and relating to war. Depending on individual experience, we even go as far as to venture percentages of acceptability. When asked to explain the reasons for this, some claim that the cause of this attitude of rejection is to do with wastes, others that it is fear of radiation, and so on. Most of these claims are „subjective perceptions“ based on our own personal contacts and experiences.

With a view to establishing a reliable analytical basis and thus be able to carry out an objective study of the problem of public perception of nuclear energy in Spain, the Forum of the Spanish Nuclear Industry commissioned a group of external consultants specializing in this type of studies to carry out a survey designed to provide information on the causes underlying the rejection of nuclear energy and its measure. This survey is one of the first performed in this country since the decision was taken to use nuclear power in the nineteen sixties.

The universe of the survey, performed by way of telephone conversations, included 2,000 people aged between 15 and 60 years. Of the total number of interviewees, twenty-five percent (500 people) lived in areas surrounding a nuclear power plant, but were required not to have any direct professional or family ties with the plant. In addition to the 2,000 telephone interviews, the study included also a qualitative investigation based on open interviews and focus groups.

The results of the qualitative study were used to design the contents of the survey, reflecting issues of maximum concern and items relating directly or indirectly to nuclear energy. In general, the image detected during the qualitative phase is that in spite of its being technologically advanced and professionally directed and managed, nuclear energy arouses fear and mistrust.

The structure of the survey was based on overall issues: the concerns of Spanish society. Twenty-four percent of the interviewees claimed that the environment was one of the three most important problems. Spontaneously, without the need to choose from among previously written responses, six percent of the interviewees considered that nuclear power plants posed a threat for the environment. Twenty-three percent of the population spontaneously mentions nuclear power when asked to list the sources of energy used in Spain. This percentage almost doubles when the same question is asked in areas surrounding nuclear power plants.

When analyzing different energy sources on the basis of their advantages and disadvantages, paradoxical conclusions are reached. Forty-eight percent of the interviewees do not know or do not answer when asked about the advantages of nuclear energy, while only nine percent do not know or do not answer in relation to its disadvantages. Furthermore, fourteen percent answer that nuclear energy has no advantages.

The disadvantages mentioned by twenty-eight percent of the population centre on the issue of pollution - without specifying the type of pollution - and thirty-five percent refer to the risk of radioactive releases. It is curious to note that nuclear energy is associated with atmospheric pollution, but this is only one of the key issues that underline the lack of knowledge existing with respect to an energy source that provides a third of the electricity consumed in Spain.

The information and communication work carried out by the nuclear industry since the country's first nuclear power plant went on line in 1968 has had obvious positive effects on public opinion in the areas surrounding the plants. Comparison of the replies provided by the general population and those from interviewees forming part of populations living close to nuclear power plants clearly demonstrates that opinions are directly related to the greater or lesser degree of ignorance of the subject. For example, the results of the study show that only ten percent of the general population considers nuclear power to be the most necessary energy source, or even essential. This percentage increases to twenty-four in areas surrounding nuclear power plants.

As regards knowledge of the uses to which nuclear power is put, it is surprising to note that forty-five percent of the population does not know or does not answer. This percentage decreases, logically, to twenty-seven in nuclear areas. Among those claiming to know various uses of nuclear energy (only ten percent of the total), there is an equal percentage share for electricity generation, military use and medicine, each with seven percent.

Knowledge of the location of Spain's nuclear power plants provides equally curious results. Seventy-five percent of the population claims to know that there are nuclear plants in Spain, but twenty-eight percent does not know or does not answer when asked where these installations are. An anecdote worthy of mention is the fact that two percent assures that one of the nuclear power plants is in Torrejón de Ardoz (a town close to Madrid with no nuclear plants but with an American military base).

Undoubtedly, many analyses might be performed on the basis of the results of the survey. Evaluation of the data obtained allows the following conclusions to be drawn:

- Only eight percent of the interviewees claims to be „pro-nuclear“, i.e. in favour of new nuclear power plants being built if there were a need to extend the current generating capacity.
- Twenty percent of the population respects the assumptions made in the Spanish nuclear moratorium: they consider that the plants currently in

operation should not be closed down, but at the same time that no new plants should be built.

- A similar proportion, nineteen percent, thinks that the current plants should be closed, in spite of their recognizing that these installations are necessary and contribute to electricity generation.
- Twenty-four percent is in favour of gradually replacing the nuclear power plants with other energy sources.
- Finally, twenty-nine percent, the highest proportion in these five segments, thinks that the currently operating plants should be shut down. This includes two percent of the population that openly claim to be actively anti-nuclear in their approach.

There can be no doubt that the survey provides results which are quite close to what the majority of us subjectively felt to be society's understanding of nuclear energy-related issues. The future of the Spanish nuclear industry requires that there be policies of communication and education aimed at providing objective information on nuclear energy in an accurate and responsible manner. We would like to see the next survey show more positive results, but this depends to a large extent on the efforts made by the nuclear sector itself.

POSTERS



XA04C1338

INFORMATION ABOUT NUCLEAR SAFETY

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Poster Abstract

Analysis of operating events

- ◆ analyse events in plant operation
- ◆ feedback from operating experience

Nuclear safety concepts

- ◆ the development of conceptual problems
- ◆ the presentation of NPP as a future energy

Probabilistic safety assessment

- ◆ reliability analyses of systems and equipment
- ◆ PSA at level 1 and 2

Thermo-hydraulic computer analysis

- ◆ transients processes
- ◆ accident situations in primary and sec. systems

Reconstruction

- ◆ control system for refueling machine in NPP
- ◆ upgrading of the vital power supply system at V1 Bohunice NPP

Measurements

- ◆ neutronics
- ◆ thermo--physical parameters



XA04C1339

RADIOPHOBIC MEDIA “VIRUS”

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Radiophobia as a phenomenon of the individual's behaviour, as well as of the human communities dates from the time when the atomic energy became a subject of a permanent interest and attention. In the Central and Eastern European Countries, in particular in Bulgaria, it is identified most of all with the changes towards the democratisation of the society. In general the subject has very wide dimensions in the social-political transition stage - from the pragmatic and realistic perception to the phobia spirits and negative adjustments. During the last decade the thematic fell under a strong political influence, which the public assessment in these countries even more contradictory and emotionally overloaded, and often “resistant” to the rational justifications and explanations. After the period when most of the problems were “taboo” and on the atomic energy matters was said either good or nothing, this type of public attitude was something normal and expected. That is why we cannot neglect the fact that the Bulgarian mass consciousness and its structured shape - public opinion, had incomplete and fragmented idea of “What is a Nuclear Power Plant and Atomic Energy”. Moreover, the Chernobyl tragedy radically readjusted public attitude towards nuclear power plants in countries like Bulgaria. However, it has not been possible not to notice also the defined stage and manipulation effects during the last years. Here the essential role was played by the media and the Eco-movements. For a certain period of time the public opinion was oriented not in the direction of solving the problems, but towards maintaining social tension. For example the Bulgarian Eco-movements, which expressed mainly political spirits, demonstrated a compulative and premeditated approach towards the nuclear energy problems. To a less but not negligible extent this concerns the media too. When countries like the United States of America, Japan or France start solving atomic energy issues they do this from the position of their high social and living standard level. In Bulgaria up to now such strategy has not been applicable. The insufficient, partial information on the background, organisation principles, safety culture and social importance of the NPP, including the possibility of manipulation, points to the elementary concept of the atomic energy. For example, while the experts put the risk arising from the use of atomic energy on the 20th place, a significant part of the public classifies it on the first place. And on the contrary - if the experts consider the X-ray equipment as the 7th of the most dangerous technical phenomena, the general public put it as far as the 22nd place. According to the American journal “Nuclear Industry” (No. 4 of 1994) people in general think that the disposed radioactive waste is disseminated through the air, the population inhales it and gets cancer. It is not clear for the majority that the storage of radioactive waste was a problem solved from the technological point of view a long time ago. Often the media uses this fact by deliberately attacking the “blank spaces” in the human knowledge. The sensations of the “bad news is good news” style could hit the target, especially is they are co-ordinated with defined internal (or imported) political attitude at the right time and place. For example, based on this principle an absurd for many specialists concept was developed that the Bulgarian NPP could become a second Chernobyl was developed and is. In the spring of 1998 some European newspapers without having any data on that matter announced again that the Kozloduy NPP is on the edge of a major accident. The English even artistically described how the holes were filled in with nylon, so the killing radiation would not permeate. On 30th May 1998 the British WTN broadcast through the international exchange a two-minute film on an accident at the Kozloduy NPP. From the background that presented the Bulgarian NPP and a machine for making pills (which can be filmed at every pharmaceutical plant) the viewer understood that the situation was critical and that was why iodine pills were distributed in the neighbouring country of Romania as a preventive measure against the “permeating” radiation. It is interesting to point out that at that moment there was nothing that could specifically break the “news”. (As it was written in the Bulgarian newspapers the next day, there had not been any incidents at the NPP and everything had been normal). The WTN “material” was broadcast on the Bulgarian national television during the main information bulletin at 8.00 p.m. on the

30th May 1998. The additional comments to the material made by the Manager of the NPP disproved the false assertion. On the 31st May 1998 the Bulgarian Nuclear Safety Authority - the Committee on the Use of Atomic Energy for Peaceful Purposes (CUAEPP) made an official request to its Romanian colleagues. The Romanian Regulatory Body on the Nuclear Safety stated that there was no panic in the country caused by radiation and even there were no data on emergency situation. Change of the background radiation was not detected at the border regions near the Danube river, the Kozloduy town and on the Bulgarian and Romanian territories. The backtrail investigation showed the following: The pictures shown were from the archive. They were taken at the Kozloduy NPP in 1995 (!) (during the sampling of the templates from the unit 1 core metal). The "illustration" concerning the neighbouring country - Romania dates since the commissioning of the Cherna voda NPP, i.e. two years ago. (As it is known the preparedness for iodine prophylactics is mandatory to be performed in accordance with the approved requirements of the emergency plan). "The TV material" obviously aimed at a manipulation effect. The official statements of the competent authorities remained on a second place. Its purpose was to argue publicly, in front of the population, the regular attempt for attacking the Bulgarian nuclear energy without knowing the truth about it. And this was done by the specialised bodies, as the Bulgarian media presented their statement. The Experts point out that in the near future it is impossible to overcome completely the negative attitude and phobia in the human consciousness against the nuclear energy. However, the activities against the direct criticism and objection, of the deliberate manipulation and spontaneous emotional reactions will be reduced to limits which can be overcome in a civilised way based on a competent dialogue.



XA04C1340

NUCLEAR ENERGY PREVENTS ECOLOGICAL DISASTER

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The booklet containing 6 pages brings forth 10 arguments and facts called upon to convince the reader that the nuclear energy is the main if not the only means to avoid catastrophic ecological consequences caused by the increasing non-usage of the organic fuel.

By the middle of the 21st century the triple growth of the worldwide energy consumption will inevitably cause a significant increase of CO₂, NO₂, SO₂ emission and reduction of oxygen content in the Earth atmosphere if it is satisfied as before due to the combustion of coal, petrol and gas.

Significant changes of the environment are turning out to be a serious threat to the existence of mankind.

Such dispiriting fact and some other negative factors inherent in the so-called «fire» energy oppose to the remarkable advantages already demonstrated by the nuclear energy supposed to become the energy of the 21st century.

The text will contain the tables and color pictures to further the perception of the material set forth in the booklet.



XA04C1341

Managing minor incidents - providing information for the public

O.Joukovskaia

Belarus

In April 26, 1999, 13 years will pass since the Chernobyl accident. It is the largest radiation catastrophe in its scale and prolonged consequences for the Republic of Belarus.

Nearly 70% of radioactive materials released into the atmosphere as a result of the reactor accident deposited at the territory of Belarus. In addition, 46,5 thousands of square kilometres (23% of the entire territory) turned out to be contaminated with caesium-137 with radiation density of 1 Ci/km². 2,1 millions of people inhabited these areas in Belarus (about 20% of population). In Ukraine contaminated areas amount to 28,5 thousands of square kilometres (4,8%) and in Russia - 35,2 thousands of square kilometres (0,5%). More than 18 thousands of square kilometres of agricultural lands (22%) have been contaminated with radionuclides. 2,64 square kilometres of them have been excluded from use. The territory of the Polesye state radiation ecological reserve, set up in the 30-40 kilometre zone from the Chernobyl NPP (2,100 square kilometres) has been excluded from use practically forever due to the high density of contamination. Forests of the Republic have been contaminated to a considerable extent – more than 20 thousands of square kilometres, or almost 30% of the entire tract of forests. Realising the global character of the catastrophe, adverse effects to health of population the Supreme Soviet of the Republic declared the territory to be a zone of ecological disaster.

The Chernobyl catastrophe and the post-Chernobyl processes led a large break of in lifestyle, values, orientations and everyday behaviour of the people on the contaminated territories. All these destructive changes are deflected as an anxious state due to the fear for children health status (more than 70% of people are worried about their children health status and more than 45% are concerned about their own health status). As the time goes on, anxiety is not decreasing, but rather increasing. Residents of the contaminated regions are characterised by a high level of psychological stress which is related with two factors: the general socio-economic tension in the Republic of Belarus and presence of radioactive contamination of Chernobyl origin. Both factors do interact between one another. Thus, psychological consequences of the accident are connected not only with real contamination of the environment but also with the actions of the decisions makers, information of the mass media. The cause of the stress within population is not a real event which happened before the eyes of people (fire on the Chernobyl NPP, explosion of the reactor core, death in the result of the burns etc.). The cause rests with the comprehension of information. This

permits considering the stress of the population after the accident at the Chernobyl NPP as an „informational“ stress.

The information stress calls for adequate activities aimed at reducing adverse consequences of its impact on health of the public. In so doing, one of the leading tasks of information rehabilitation of the people affected by the Chernobyl disaster is a problem of their realizing the fact it is possible to live in the affected territories. It is of utmost importance to help man correctly evaluate a level of real and imaginary threats which life after Chernobyl is fraught with, to give him/her an opportunity to thoughtfully opt for his/her line of behavior, prevent an individual from developing in such a direction that could result in a real threat to physical health. To achieve this goal, it is needed to design a model of an effective system of informatively influencing human's mind, given peculiarities of the present stage of the republic's development and features of its evolution under the post-Chernobyl conditions. To provide the public with real and objective information is a forefront problem while resolving these tasks. In this situation it is very important to define the most effective forms and ways of informing the public, to find out a degree to which people trust whatever information.

To that end in 1997 I conducted a sociological survey among attendees of re-training courses in the field of radiation control (employees of the Ministry of Health, Belarus Consumers' Cooperation Union, Ministry of Agriculture and Foodstuffs, those of Chernobyl divisions of district and region executive committees). It has been revealed that 2.7 % of the respondents trust information of local authorities; Radio and television – 7.2%; foreign scientists – 51.1%; belarussian scientists and specialists – 51.6% of the respondents. 82.5% of the responders think that the population is insufficiently informed about the questions of safe activity. Information on radio-ecological problems threatens only 7.2% of the respondents. This kind of information stimulate others to find recommendations on safe activity provision, to understand the situation. As a result of the investigation one can draw a conclusion that the current system of public informing on the Chernobyl problem is insufficient and ineffective, since on the background of a high interest to this problem one can notice a decrease in trust to the majority of information sources, which leads to blocking of adequate perception of the information provided.

Bearing this in mind one must:

1. attract specialists working on the affected territories, specialists of radiation control network, doctors, teachers, journalists to information work with population of the affected territories;
2. organise open information data banks reachable for population, specialists, organisations;

3. organise and conduct briefings for mass media representatives (permanent seminar or workshop for mass media representatives);
4. conduct permanent monitoring of situation in the information sector and informing of population on the questions of overcoming of the Chernobyl NPP catastrophe consequences and safety life style provision;
5. begin educational work among the population on radiation and ecological safety.

The exposed facts must be taken into consideration during planning and implementation of actions aimed at provision of safe activity of population.



XA04C1342

REAL AND MYTHICAL CONSEQUENCES OF CHERNOBYL ACCIDENT

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1. Public Unacceptance of Nuclear Power as a consequence of Chernobyl Accident.

An accident on 26 April 1986 at Unit 4 of the Chernobyl NPP was a severest event in the history of the nuclear industry. After increase of the power level up to one hundred times above the nominal a core and reactor buildings have been destroyed, large amounts of fuel particles and fission products were dispersed in the atmosphere and many territories have been contaminated.

It was a shock for everybody, who has been involved in nuclear power programs. But nobody could expect that it was also the end romantic page in the nuclear story.

The scale of the detriment was a great, and it could be compared with other big technological man-made catastrophes. But immediately after an accident mass media and news agencies started to transmit an information with a great exaggerations of the consequences of the event.

In a report on the Seminar "The lessons of the Chernobyl" [1] in 1996

Dr. Abel Gonzalez from IAEA has reproduced the examples of such incorrect information. Particularly, in the mass media it was declared that consequences of the accident could be compared with a results of the second world war, the number of victims were more than hundred thousand people, more than 1 million of children have the serious health detriments. Such and other cases of the misconstruction have been called as myths.

The real consequences of Chernobyl disaster have been summed on the International Conference "One decade after Chernobyl" [2] in Vienna, in April 1996. More than 800 experts from 71 countries and 20 organizations together with two hundreds of the journalists discussed actual and future consequences of Chernobyl accident.

In opening remarks, Dr. Hans Blix, the Director General of the IAEA said:

« The nuclear accident at Chernobyl on 26 April 1986 had a heavy impact on life, health and the environment. It caused agony to people in Ukraine, Byelorussia and Russia and anxiety far away from these countries. The economic losses and social dislocation were severe in a region already under strain...

Our reaction should be a demand for rigorous scientific analysis. The errors in technology, organization and management, which caused the accident, must be identified to prevent any repetition and the damages caused by the accident must be accurately assessed and diagnosed so that rational remedies may be applied...».

A very important result of the Chernobyl accident was a dissemination of stable unacceptance of the everything connected with "the atom". A mystic horror from invisible mortal radiation has been inspired in the masses.

And from such public attitude the Nuclear Power Programs in many countries have changed dramatically. A new more pragmatic and more careful atomic era started with a slogan: "Kernkraftwerk ? Nein, danke".

But in spite of discordance in the society the most experts are confident in advantages of nuclear technologies, that a nuclear power can compete with fossil one not only in the cost power production but also on levels of safety, effects on environments. Last ENS'98 has clearly shown the positive role of nuclear energy in solution of mankind energy problems in the future, in particular in the decreasing of global warming in particular. In declaration of Global Foundation, Inc. in 1997 it was announced :» Although technological innovation may eventually provide non-polluting alternatives, at present only nuclear power is a cost effective non-fossil source of electric power» .

But to ensure the approval of nuclear power in the society it needs to spread the dates about the safety of nuclear power, about safe disposal of radioactive wastes and particularly to disperse the myths of Chernobyl.

2. Unwarranted Countermeasures after an accident.

No doubt, a Chernobyl accident was a serious technical catastrophe in atomic industry. The scale of detriment is connected with a number of involved peoples, not with a number of real victims. In comparison with Bhopal case, earthquakes, crashes of the airplanes, floods, traffic accidents and other risky events of our life- the Chernobyl is not a most hazard ones. But... It is known that 116000 people were evacuated from the exclusion zone near Chernobyl immediately after an accident in 1986.

A great role in the dissemination of the negative image of safety of the nuclear power has played the unqualified and noneffective activities of the authorities during and after accident.

After acceptance a very low level contamination of the ground equals 1 Cu/km^2 (with dose rate practically as from cosmic radiation) for the intervention a unwarranted relocation of the huge masses of the population has been arranged. 210000 people were relocated from the «contaminated» zone in 1990-1994 . It has created very serious social problems. After a loss of habitual stile of the life, a lot of people have felt a discomfort, anxiety, unreasoning fear. Under press of life difficulties most of them have felt themselves diseased, some have became the patients with diagnosis «an after traumatic stress».

In the report of Chernobyl project and later on the Vienna Conference in 1996 it was confirmed, that there were significant psychological health disorders and various psychosomatic disorders attributable to mental distress.

Such psychological effects of the Chernobyl accident resulted from the lack of public information, the stress of relocation and the fear that any radiation exposures are damaging. Those affected people are believing that illnesses of all kinds are due to radiation. The spreading of such mistaken did influence on general public disapproval of Nuclear Power.

3. Real consequences for the health of concerned population.

Now, 13 year after an accident, it is possible to reassess the consequences of the event. In particular a comparison of mortality data for contaminated and uncontaminated areas can be compared.

From the 116000 people who were evacuated in 1986 fewer than 10 % had received doses of radiation more than 50 mSv that can be received during some years of living in the areas with high level of natural radioactive background.

It is known that roughly 200000 men participated during 1986-1987 in the «liquidation» of the consequences of the accident. They received average doses of the order of 100 mSv. Approximately 20000 men from them received ~250 mSv. If we use risk coefficient $5,6 \cdot 10^{-2}$ 1/men.Sv as a probability to die after the irradiation of doses 1 Sv, number of dead in the groups equals 280 men.

A total of 237 occupationally exposed persons were hospitalized and suggested to be suffering from clinical radiation syndromes. Of these 28 died as a consequence of radiation injuries within first three months. 14 additional patients have died over past ten years -in some cases are not directly attributable to radiation exposure.

One of the important conclusions that an increase in the incidence of thyroid tumour could be expected. The number of reported cases up to the end of 1995 is about 800 in children under 15 years old, more than half cases were in Byelorussia .

The myths of the Chernobyl disaster can and has to be dispersed.

Literature

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XA04C1343

POLISH MEDIA AND PUBLIC OPINION ON NPP MOCHOVCE COMMISSIONING

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The so called „Mochovce Problem“ was one of the major topics in Polish media in the period from May to July 1998. The nuclear power plant commissioning caused an unexpectedly strong reaction, especially in the newspapers, slightly less so in electronic media.

Here are some of the headlines from Polish press: „Dangerous Mochovce“, „A controversial reactor“, „Slovakia disregards the report“, „Activation means radiation“, „Mochovce disagreement“ „Prime Minister Mecziar threatens“, „Austrian politicians angered by Mochovce commissioning“, „Good intentions are not enough“, „Appeal on the reactor.“ Many publications, especially in the political rightist press, attempted to link the technical problems to the political ones. Aversion towards the ex-Prime Minister Vladimir Mecziar was „transferred“ onto the nuclear power plant. „Bad man“ Mecziar was incapable of constructing a good reactor. Such arguments could persuade and convince a certain sector of Polish public. Media have been guilty of many transgressions - committed intentionally or because of the ignorance of the authors.

After more careful reading, one could find there statements as misleading as they were untrue: „Slovak power plant is equipped with Russian WWER-440 reactors, as those in Chernobyl“, „does not comply with over 200 safety standards requirements“, „no safety provisions for earthquake or fire“, „no precedent in the whole world for the co-operation of Russian reactor with Western safety systems.“

Faced with clearly hostile media reaction to Mochovce NPP, the National Atomic Energy Agency representatives, together with atomic and nuclear experts, undertook to change these attitudes. In numerous interviews, letters to the editors and talks with journalists, they attempted to correct the mistakes, explain the true safety situation in the nuclear power plant, by whom it was constructed, who supervised and tested the systems and so on.

In a special statement forwarded to the media, the President of the National Atomic Energy Agency wrote:

„Mochovce NPP has been the target of many safety assessments, performed not only by Slovakian institutions (including, of course, the Slovakian Nuclear Regulatory Body) but also by international organizations, in particular by IAEA missions and by joint expert group from GRS (Germany) and IPSN (France), i.e. from the leading authorities on nuclear reactor safety in their countries. None of the analyses disputed the

soundness of completing the construction, but numerous improvements of various importance have been suggested, which are gradually implemented during continued construction. Some of less crucial changes will be implemented after commissioning. Energoprojekt Praha is the Designer General for this NPP.

The Mochovce NPP safety level does not differ significantly from safety levels of other NPPs operated in Western European countries; Mochovce reactors are equipped with steam condensing tower, complete emergency cooling system (including the emergency tanks heating), seismic protection, enlarged capacity pressurizer safety valves, generator steam dump stations and other. The whole instrumentation and control system has been designed and manufactured by Siemens. Reactors of this type feature some very favorable inherent characteristics and safety margins and **have nothing to do with RBMK („Chernobyl“) reactors**. A number of similar units is being operated in neighboring countries and in comparison Mochovce NPP will be even more modern. The operational characteristics of some of these units operated in other NPPs (Loviisa in Finland, Paks in Hungary) are among the best in the world.

Mochovce NPP is sited approximately 140 km from Polish border, 11 km west from town of Levice, 5 km from the river Hron in Danube gathering territory. None of the hypothetical severe accidents in this NPP would pose a real danger for Poland.

The completion of Mochovce NPP construction will improve significantly the electricity balance in Slovakia, thus lessening the pressure for continuing the operation of older Bohunice V1 units beyond their design lifetime. Those Bohunice units are characterized by less demanding safety standards. **For this reason, as well as in view of striving for improvement in environmental factors beyond Polish southern border, especially after Kyoto/97 decisions on greenhouse gases emissions, the public opinion in Poland should support the Mochovce NPP construction.**

In 1996 Poland has signed with Slovakia a bilateral inter-governmental agreement on the prompt notification on nuclear accidents and on the co-operation in the nuclear safety and radiological protection matters. On the basis of this agreement the experts from Polish National Atomic Energy Agency are in perpetual contact with Slovakian Nuclear Regulatory Body and in each and every moment can obtain full and comprehensive information on the plant parameters important for nuclear safety. Also they are able to visit the plant in chosen time, now - during construction (which has been acted upon) and later in the future - during operation.“

The experts explanations, together with the NAEA top management visit to the plant itself (June 26), brought some results. The media became less aggressive, and Polish public and authorities - contrary to the Austrians - do not protest loudly against the commissioning of this newest European NPP.

Now, in December 1998, the tune of Polish press is very much changed. The author of the article titled: „Off with Mochovce“ printed last spring, on December 8 1998 published a large story titled „A circle of reactors“, in which she writes of Mochovce with sympathetic understanding and calls it „modern Mochovce.“ It should be noted, that the change of mind of this quoted author could be influenced by two occurrences: the full acceptance of the Mochovce NPP by the new Slovak government and the fact, that this author recently participated in the visit of a group of Polish journalists to Ignalina NPP in Lithuania. I am convinced that the personal viewing of the nuclear installation and the talks conducted there, especially with the inhabitants of Visaginas (neighbouring NPP), who are in everyday contact with nuclear power plant, were essential in shaping a more friendly and more open attitude of media representatives towards nuclear power.



XA04C1344

POLISH SOCIETY ATTITUDES TOWARDS NUCLEAR POWER, IONIZING RADIATION APPLICATIONS AND RADIOACTIVE WASTE MANAGEMENT

(Report on public opinion polls)

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1. INTRODUCTION

In Poland, during parliamentary debate on „Foundations for the Polish energy policies up to 2010“, the importance of public attitudes toward nuclear power has been recalled repeatedly in the context of the future development of nuclear power in Poland.

In the governmental document, accepted by Polish Parliament on 11 January 1996, it has been stated that „nuclear power plant construction is not foreseen up to the year 2010; nevertheless it has been assumed that the appraisals of the economic feasibility and of the public acceptance level for such investments will be conducted.“

Thus, the need for such assessments of public opinions and attitudes toward nuclear power has been recognized and accepted by the highest legislative power organ in Poland.

2. METHODOLOGY USED IN THE PUBLIC OPINION POLLS IN POLAND

The first public opinion polls on the attitudes toward nuclear power in Poland have been conducted in August 1989.

The subsequent four series of assessments of public opinion and social attitudes toward possible nuclear power programme development in Poland have been performed by a well known company, named „Demoskop - market and social research“, and have been commissioned by National Atomic Energy Agency and by Polish Power Grid Company. They were conducted in December 1991, in November 1994, in August 1996 and in May 1998.

The polls in the form of questionnaire-based interviews covered a representative sample of Polish citizens aged 15 and more. In the last poll, this representative sample comprised 999 people.

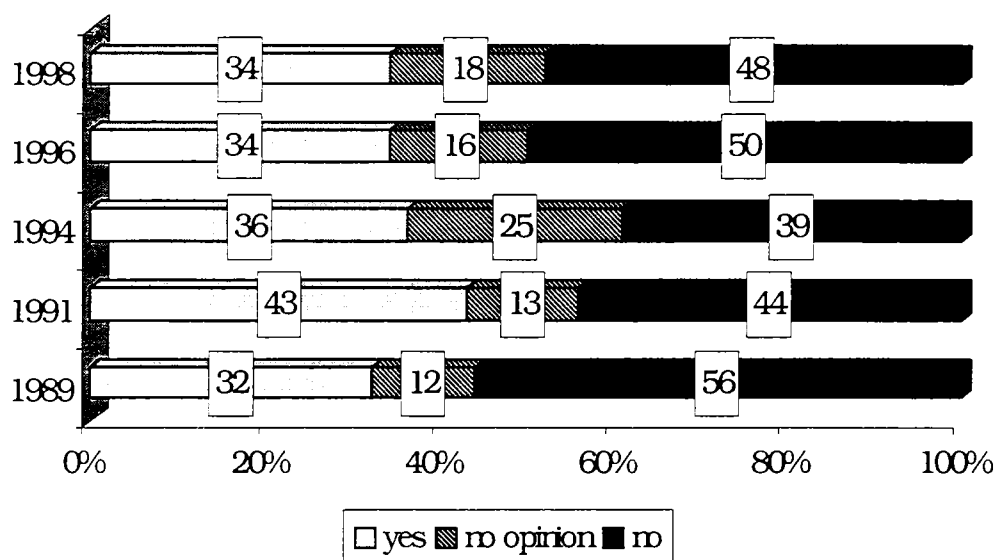
The following socio-demographic characteristics have been taken into account:

- gender,
- age,
- education level,
- place of residence,
- type of work,
- professional position,
- place of employment.

3. PUBLIC ATTITUDES TOWARD NUCLEAR POWER IN 1989 - 1998

The results of public opinion polls concerning the nuclear power and conducted in Poland in 1989-1998, are shown in Fig. 1. (More precisely, this figure shows the distribution of replies to the question if, among other types of energy sources, the nuclear energy should be used to satisfy national power demands.)

Fig. 1. The respondents' attitudes toward nuclear power in 1989, 1991, 1994, 1996 and 1998



From the numbers quoted it may be concluded that the most dynamic change in the public attitudes toward nuclear power in Poland occurred in 1989-1991. In the following years the population has been divided into three groups: the nuclear power proponents (approximately 35%), opponents (approximately 40-50%) and undecided (15-25%).

The significant increase of the fraction accepting the nuclear option at the turn of eighties and nineties may be explained by the change in the socio-political situation. The feelings have been quieted, the emotions subdued. The period of early nineties was less „hot“ than this very important year in history, the Polish year of 1989.

The more difficult question is: why, during the recent years, the number of nuclear power proponents in Poland is smaller than the number of its opponents?

The possible explanations of this social phenomenon include the low level of the social awareness as regards the topics in question, but this is not the single reason for the aversion for nuclear power, and probably not the most important one. The opinions on the nuclear energy application for electricity production are formed not only on the basis of knowledge but also are influenced by emotions.

Such judgment is confirmed by periodically recurring rumours about supposed nuclear accidents, which cause very strong public reactions, with all related consequences. The emotions are intensified by media descriptions

of e.g. Chernobyl victims tragedies, with exaggerated data on the accident consequences.

The quoted numbers refer to the whole population, but the results differ significantly in different groups.

The inhabitants of the cities, especially the big ones (population over 200 000), are more favorably inclined toward nuclear power uses than people from rural regions and small towns. Women - as in the previous years - are more than men opposed to the nuclear power.

The young people (up to 24 years) display above average acceptance, while those aged over 60 - less than average.

Very high acceptance of nuclear power has been seen among students and businessmen-entrepreneurs.

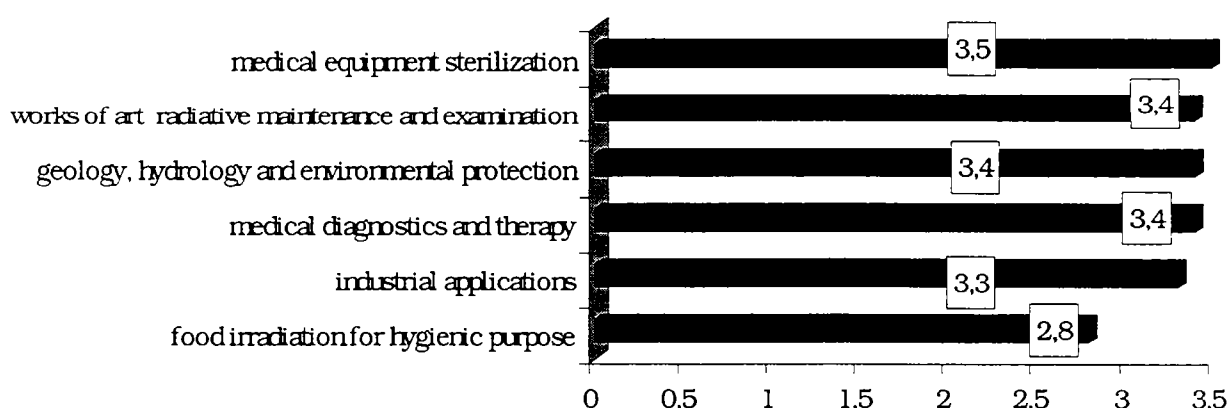
4. OPINIONS ON VARIOUS IONIZING RADIATION APPLICATIONS

The respondents have been asked to point to those ionizing radiation applications which, in their view, should be specially promoted and popularized. The following six possibilities have been offered:

- industrial applications,
- food irradiation for hygienic purposes,
- disposable medical equipment sterilization,
- medical diagnostics and therapy,
- applications in geology, hydrology and environmental protection,
- works of art radiative maintenance and examination.

The disposable medical equipment sterilization enjoys the largest acceptance. The smallest one given to food irradiation for hygienic purposes. For all specified applications the total approval index has been found, as an

Fig. 2. Support for various ionizing radiation applications



The chart of the support for all six types of application is shown in the Figure below. The acceptance is given in terms of an average, which - depending on the acceptance scale - could assume the values between 1 and 5 (1 means the lowest acceptance, 5 - the largest).

The disposable medical equipment sterilization enjoys the largest acceptance. The smallest one given to food irradiation for hygienic purposes. For all specified applications the total approval index has been found, as an average over all individual ratings. This average value has been found to be 3.3.

5. WHAT POLES THINK OF RADIOACTIVE WASTE

In Poland a strategic governmental program is being implemented. Radioactive waste and spent fuel management includes problems in the area of legislation, siting, technology and information (public communication). Within this program, in December 1998 a public opinion polls have been concluded on various aspects of the radioactive waste management.

Among 8 questions there was one which is essential for future strategy of radioactive waste management;

„In Poland - in accordance with the world standards - appropriately processed and safeguarded radioactive wastes are stored and disposed of in the National Radioactive Waste Disposal Installation in Rózan, by Ostro³eka. This installation poses no hazard for the local population nor the environment. Nevertheless the district receives - guaranteed by legislation - financial resources granted because of the fact, that the disposal is sited on its territory. Being aware of this, would you agree to the construction of a modern installation for radioactive waste disposal, surrounded by appropriate zone, close to the place of your residence?“

Other important question concerned the level of trust in representatives of various communities (professional groups), who formulate statements on the waste disposal:

„Whose opinion on safe - for people and environment - mode of radioactive waste disposal would be for you the most trustworthy and dependable?

a) experts, b) ecologists, c) journalists, d) politicians, e) other (whose?)“

The full poster version will give the answers to those and other questions, together with appropriate comments.



XA04C1345

THE NUCLEAR REGULATORY AUTHORITY OF THE SLOVAK REPUBLIC AND START-UP OF THE MOCHOVCE NPP

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A clear communications policy is the key to credibility and credibility is earned, not created. It is based on perceptions which give rise to varying levels of confidence. It has been consistently found in opinion research that credibility is the single most powerful persuasive force. Public communication programmes are the principal currency for the Regulatory Authority to inform the public on issues of cost, benefit, need and risk. For each issue the information needs differ and this must be reflected in the Regulatory's Authority communication programmes.

The important aspect is testing if the nuclear energy in the Slovak Republic is due to obligatory rules acceptable and its operation is regulated by the state through the independent institution - The Nuclear Regulatory Authority of the Slovak Republic (UJD).

UJD considers the whole area of public relations an essential component of its activity. UJD intends to serve the public true, systematic, qualified, understandable and independent information regarding nuclear safety of nuclear power plants, as well as regarding methods and results of UJD work. Generally, public information is considered as significant contribution to the creation of confidence into the regulatory work.

The public relations are understood as attempts to establish, keep and improve UJD's good relations to its neighbours through purposeful informing. The UJD already in its origins laid the foundation of a policy of keeping the public broadly informed on the UJD activities and the safety of nuclear installations in the Slovak Republic by opening the UJD Information Centre. Catering to public & media relations, the Information Centre is instrumental in forming among the public a favourable picture of independent state supervision on nuclear safety.

An Information centre at the offices of UJD was built and opened in October (1995) with IAEA Director General Dr. Hans Blix as the first visitor. The entrance to the office building has been rebuilt and two rooms have been reserved for information purposes. The bigger room contains the Information centre, equipped with all electronic equipment. The room is big, enough to be used as a meeting room. The press conferences are held there too. I think that the Information centre could be a good tool to spread information to schools and interesting groups (members of Parliament, governmental and non-governmental groups and journalists). Approaching

the UJD by telephone or through mail should be convenient, and information must be available without requiring a lot of effort from public.

The basic rules for communication with media and with public are as follows:

- * To inform the public about the activities of the UJD, about its responsibilities,

about The Status of nuclear installations safety in the Slovak Republic
- * To provide prompt, clear and consistent information to the public on a nuclear event whenever and wherever they may occur
- * To facilitate an independent communication between UJD, media and the public.

UJD devotes considerable effort to be visible in the press and TV in radio programmes. Good relations has been established with a Slovakia's News Agency: the Agency asks UJD regularly for information and disseminates it to journalists. The Press Officer and other employees at the UJD have written articles published in various papers and journals, including specialised journals on nuclear safety. The advantage of articles written by staff members is that you can decide how your message is forwarded without a journalist "filter". The UJD is utilising all opportunities to contact the media. The Press Officer is aware of the importance of enhancing the UJD profile as an independent, non-promoting authority. The role of the UJD as an objective authority is always stressed in the articles.

Last and this year were important for UJD in public information the situation at the NPP Mochovce and activities of the Austrian Government, dealing with personal, medial and visiting activities. These activities were focused to put a stop the commissioning of the first unit of the NPP Mochovce. Nevertheless, Chairman of the UJD could presented facts about the commissioning of the first unit of the NPP Mochovce, which reached the critically on 9 June, 1998 for the delegates at the 42nd Session of the General Conference in Vienna. Chairman of the UJD issued the Decision granting permission for a minimum controlled power and to carry out physical start-up tests. At the same time he laid down such conditions under what the reactor can reach to the minimum controlled power.

NPP Mochovce is an example of international co-operation in achieving internationally acceptable safety standards. Companies from France, Germany, USA, Russian Federation, Czech Republic and Slovakia and last, but not least also the IAEA participated significantly on increasing the safety level of this NPP. We have been fully aware of the importance of good communication with press, TV and radio broadcasting in this pre-operation and operation period about nuclear safety, nuclear standard and other nuclear aspects commissioning of the NPP Mochovce in the UJD. The information policy of the UJD was in this period focused on the preparation

an actual press releases for general and specialised news- paper and national press agencies. Very important were the frequent presentations the requirement safety stages of the NPP Mochovce in TV and radio broadcasting by headquarters of the UJD.

UJD as the state authority provides information related to its competence, namely information on safety of operation of nuclear installations, independently from nuclear operation and it enables the public and media to examine information on nuclear installations.

More active public information activities of the UJD will significantly contribute to the public understanding on different aspects of the uses of nuclear energy and will increase the public trusts in this area. There is still a world-wide opposition against nuclear energy but not in an amount as before 5 - 10 years. A more activity public information activity of IAEA will significantly contribute to the public understanding on the advantages of the uses of nuclear energy and will increase the public trust in this area. In particular, the IAEA should more actively publicize the achievements in nuclear safety improvements in Member States. Taking into account our country's experience in developing nuclear energy programs, we support the IAEA in developing an expanded public information project. During last year Slovakia hosted an international seminar of this kind which was a great success.

All UJD communication and information activities in 1998 aim to Creation of public confidence, favourable UJD image at home as well as abroad.

Bratislava, January 4, 1999



XA04C1346

Internal communication and data base management QA system in the Nuclear Training Centre

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Nuclear Training Centre in Ljubljana, Slovenia, is serving to NPP Krško as a subcontractor for initial phases of technical staff training. In addition we are also organizing several international training courses, we perform the radiological protection training for users of ionizing radiation in industry, medicine and science and we are also running the public information centre with about 7000 visitors per year.

For all these activities we have only 11 people available. In order to maintain the quality and efficiency of our work, we were forced to develop strongly computerized support system for the internal communication and maintenance of ever growing databases.

The Central Database for Course Management

Basic component of our system is the central database ICJT (ICJT is the acronym of the Slovenian name of our training centre). It is available to all personnel through the computer network. Thereby the internal communication is greatly improved. Its basic functions are the following:

- Maintenance of basic data about every project (training course, contractual agreement or internal activity) including involved persons and deadlines.
Once the decision for the organization of the course (or any other activity) is made, its basic data are entered into the database. The head of the Centre assigns the project coordinator and the administrator. The administrator then connects all the planned lecturers and participants with the project. At any point anybody involved can get the updated list of participants in different formats (only names, names with companies, full addresses etc.)
- Maintenance of the address book of all the persons ever involved in the Centre.
The name of any person is entered only once and can be later used for different purposes. Thereby the possibilities for errors are largely reduced. It is also very easy to change the data. For example, if somebody has changed the employer, this would be entered once and after that correctly used in all further applications.
- Tracking of the adherence to deadlines for every project.
- Automatic creation of QA forms for project quality control.
The head of the Centre has the access to the list of "pending" projects. Typical source of mistakes and bad practice in the past was the last, concluding part of the activities

connected with courses. After the participants at the end of the last day leave the Centre, everybody involved tends to "forget" about the successfully "finished" project. But there is a number of things to be done after the end: archiving of course materials, evaluation of questionnaires, implementation of lessons learned etc. With the help of the QA features of our database this is now simplified to the satisfaction of everybody involved.

- **Generation of the final certificates for each participant in the course.**
Our training centre issues several hundred training certificates per year. With the help of this database the creation of the certificate design and tracking of their creation is enormously simplified. The secretary has only to select the name of the person from the address book, click several buttons and the certificate is created and its data are entered into the database. At any point we can get information about the number of people with valid certificates or number of people whose certificates will expire in the near future and would therefore need additional training and/or examination.
- **Statistical evaluations of our activities.**
We can easily make summaries over the number of courses, number of participants, lecturers, participant countries, participant-weeks or any combination of them in certain time periods. Such data are used as indicators for our management purposes.
- **Mail merge capabilities for distribution of letters.**
In addition to the permanent pre-designed set of forms, lists and reports, it is also possible to use the database as a source of mailing addresses for any kind of letters created with the word processor. This can largely simplify the work of our secretaries.

This database has substantially simplified work of our two secretaries and helped the technical staff in management of projects. For example, each training course has typically 25 participants from different countries. The name and affiliation of everyone is now entered into the database only once. The different lists of participants (i.e. for entry visa approval, for letter labels, for tabletop labels or for registration forms) are then automatically printed upon request. The project leader can check the status of the project at any moment from his computer.

Another important part of the QA system is the procedures. Our basic one is defining how to conduct the training course starting from the invitation letter to the flowers at the table on the day of opening. It includes also the project conclusion form, which proved to be highly effective way of quality assurance. The project leader is relieved from his responsibilities only after the list of actions is fulfilled and approved by the head of the Centre. At all stages of the project the database can significantly help both the project manager and the secretary.

Management of Visits to our Information Centre

Another important database maintains data about the visitors from schools to our information centre. There we have stored the addresses of all the schools in Slovenia. At the beginning of every school year we send the invitation to visit our information centre to all schools.

After the secretary gets the information about upcoming visit, she enters it into the database and the acknowledgment letter is generated automatically.

After the visit data about the number of visitors, their age and the offered activities (lecture, exhibition, visit to research reactor) are entered into the database. We can get statistical evaluation about the visits at any instant.

Databases for Training and Information Activities Support

For our training and information activities we are maintaining several other databases:

- **Training materials**
This database is still under development. Once it will be finished, we will have all our training materials (student handouts, lesson plans, viewgraphs) computerized and accessible at any moment from the network. The QA/QC system will be integrated and will provide the structured system for verification of the quality of materials.
- **Documentation**
This is a typical bibliographical database about all our books, reports and similar documents.
- **Video material**
We have an extensive collection of video materials ranging from information movies for general public to specialized training videos.
- **Photographs and other pictures**
This database keeps track of all photographs of NPP components and/or other things, which are used in our training.
- **Database for computerized generation of exams**
It is quite a difficult task to create a good exam at different stages of the training course or at the end of it. With this database we are maintaining a set of verified questions and simplifying the generation of exam sheets and later evaluation of the exams.
- **Data base about all the nuclear power plants in the world**
For our information purposes we are maintaining this database, where we collect number of relevant publicly available data about every nuclear power plant in the world, including the picture where available. Part of it can be seen on our WWW site http://www2.ijs.si/~icjt/plants/npp_all.html.

Conclusion

It is the mission of our training centre to serve as a reliable and effective source of information about nuclear technologies to nuclear professionals and to the wider public. In order to cope with the increasing number of activities and with the limited number of people and resources available, we had to introduce systematic and highly computerized system for more effective internal communication and support of our activities, which is described in this paper. We have in great extent achieved two main objectives, which we expected from it:

- To reduce and simplify our routine activities.
- Force us to follow the predefined rules and thereby maintain the high quality of our work.



XA04C1347

CONCEPT AND PROBLEMS ON MODERNIZATION OF EXISTING POINTS FOR RADIOACTIVE WASTE DISPOSAL IN BELARUS

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At present Belarus has no operating nuclear power plants (NPP) on its territory, the works with fissile materials carried out at the available nuclear and physical benches have been stopped. But not long ago a research reactor IRT-M with the capacity of 5000 kW was under operation from 1962 to 1986 at the Institute of Nuclear Power Engineering, now reorganized (located in Sosny settlement, 10 kilometers from Minsk-city), and a prototype of a small-sized mobile NPP with electric capacity of 630 kW was tested in 1985-1987, as well as a whole complex of nuclear and technical benches were into service, such as large-scale reactor loop plants for testing fuel elements and critical assemblies.

About 1000 industrial, medical, scientific and research institutions use radioactive materials and the devices containing them in Belarus. Annually about 8000 kg of RAW and 6000 units of the spent sources of ionizing radiation (SIR) are generated by these enterprises which are to be obligatory disposed. Annual disposal of such RAW and SIR constitutes 10-50 tons with activity of $(1-5) \cdot 10^3$ Ci.

A general concept of RAW disposal in Belarus cannot be considered separately from the concept of RAW disposal which are the waste of decontamination (WD) of the Chernobyl origin. It is well known, that in a result of the Chernobyl NPP accident 70% of radionuclides have fallen out in Belarus and the quarter of its territory is considerably contaminated. Scales and urgency of the problem on such RAW disposal in the Republic are understood from the following figures. Annually about 26 thousand tons of solid waste are formed at decontamination of different objects and pulling the buildings down; decontamination of industrial equipment gives up to 20 tons of liquid radioactive waste (LRAW). About 18 thousand tons of radioactive ash are formed on the contaminated territories in a result of using local fuel types; and above 30 thousand m³ of deposits of drainage water per year are formed at sewage works of urban settlements.

It is obvious that standard documents having been developed in the USSR before cannot be taken as the basis when developing the concept of disposal of the waste of decontamination of the Chernobyl origin. At present

«Temporary Sanitary Rules on Treatment of Waste of Decontamination Formed as a Result of Carrying Out the Works on Overcoming the Chernobyl NPP Accident Consequences» have been developed on the basis of national and international practical experience. It is a basic state standard and legislative document in this field. The disposal of solid waste of decontamination is accepted to be done in points of disposal of the waste of decontamination (PDWD) of three categories and in the places of waste disposal of pulling buildings and constructions down (PDWPD) depending on the level of their specific activity or surface contamination.

PDWD of the 1st category is a special engineering construction designated for WD disposal with relatively high activity. It provides with reliable isolation due to using special engineering protective barriers and hydrotechnical measures and has the system of constant control for its state and effect on the environment. Demands to the equipment of these points mainly answers the demands laid in SPORO-85 for PRAWD.

PDWD of the 2nd category is an engineering construction for near-surface disposal of the main mass of WD. It prevents from the spreading of radionuclides out from the disposed WD into the environment due to using the simplest clay protective screens.

PDWD of the 3d category is near-surface points of WD storing, formed during the initial post-accident period and made, as a rule, without any designs. The measures on engineering construction and organization of control are determined for them.

PDWPD are near-surface entombments (envelopes) of the simplified type for pulling buildings and constructions down in places of their formation. Prevention of radionuclides spreading from them into the environment is provided due to hydrogeological restrictions which are taken into account when siting for their placement.

At present there are 7 PDWD of the 2nd category built from type design on the territory of the relocation zone. The volume of each PDWD constitutes 30-50 thousand m³. The unoccupied volume of these PDWD constitutes about 120 thousand m³, that provides with WD disposal still during 1.5-2 years. 69 PDWD of the 3d category were revealed and built on the relocated areas. Creation of PDWD of the 1st category on the basis of the existing depository of biological waste is not being accomplished yet in the zone of alienation.

What concerns the problem, worked up some years ago, on creating a large-scale specialized integrated plant for RAW disposal taking into account of their receipts from the whole Republic, then its construction has been admitted as to no purpose by radioecological, economic and social criteria.

To-day the only point of radioactive waste disposal (PRAWD) of non-Chernobyl origin in the Republic answering the SPORO-85 demands is a special works being under operation from 1964 and located in Sosny

settlement near Minsk-city. These are 2 storage facilities built from type design. Each storage facility has 8 underground capacitances for RAW disposal and is equipped with 2 wells for storing sources of ionizing radiation (SIR).

Proceeding from the forecast of annual disposal of RAW and SIR, capacities for disposal RAW of low and mean activity, available in PDWD, will be enough for 4 years, approximately, but capacities for SIR disposal will be exhausted in the next year. At present PDWD, undoubtedly, does not answer international demands to the systems of RAW disposal as to its technical characteristics. In perspective the decision of the problem on RAW disposal (non-Chernobyl origin) is seen in creation of PDWD on the basis of this special enterprise, that will fully answer the advanced world level and will have the developed infrastructure. When developing the strategy on RAW treatment it is necessary to proceed from the IAEA recommendations as well as from the international experience on creation of large points of disposal organized and equipped in a proper way is preferable in comparison with the collection of small sites. The works on RDWD development require a serious scientific justification of radiation safety (and nuclear one taking into account of fuel elements storing in PDWD) designs by possible scenarios of events at extreme natural phenomena and emergency situations. In accordance with the advanced international demands it is necessary to solve the problem on extraction of fissile materials out from PDWD and placing them into a special storage.

Placement of RDWD organized in 1963 near the settlement Sosny has a number of drawbacks at present, namely:

- PDWD is practically situated on the suburbs of Minsk;
- PDWD is located in the area of sources of two small rivers - Trostyanka and Slousta which are already now pressed with a considerable anthropogenic load;
- PDWD is located in a feeding area of pressure aquifers by fresh water scoops in Minsk city;
- PDWD is located at a distance of 2.5 km from Minsk urban water scoop «Drazhnya» and in the zone of its effect;
- the aeration zone on PDWD area consists of sandy grounds well permeable.

A favourable natural factor for PDWD organization on the base of the existing one in settl. Sosny is sufficient capacity of the aeration zone (31-40 m) in the place of its location.

In connection with this, the concept of long-duration storage of RAW has been accepted for PDWD reconstruction till the permission (the license) on final RAW disposal is got by the enterprise. Decision on giving such permission must be accepted (or not be accepted) by regulatory bodies in accordance with established order on the basis of the analysis on estimation

of safety of storages existing now, as well as PDWD after reconstruction. The analysis of safety must be done in accordance with the demands of international norms and the IAEA recommendations (IAEA-TECDOC-789, 853 and others). In this aspect it is very important that the possibility of waste discharge for disposing anew is envisaged in the project on PDWD reconstruction.

At present the works on PDWD reconstruction are being accompanied with research works on a complex evaluation of radiation safety of industrial sites in settl. Sosny, where a number of nuclear-and radiation dangerous objects of the Academician Science and Technical Center «Sosny» is located.

In the nearest years the following primary measures on PDWD reconstruction are necessary to be carried out, such as:

- to create additional capacities for disposal;
- to equip the special enterprise with facilities for pressing and cementing of liquid RAW;
- to install stationary radiometric devices with automatic sound and light signal devices in the storage where nuclear materials are stored;
- to create a computation system of automated account and control for the whole cycle of RAW and SIR passing;
- to create control hydrogeological holes for a constant radioecological monitoring of underground waters, and
- to ensure radiation control in sanitary-protective zone and observation zone in a full volume of demands according to nomenclature of parameters.

The paper presents the recommendations on extraction, reprocessing and conditioning of radioactive waste from the existing storages when PDWD reconstruction which have been developed with using the created computer database on the stored RAW.

VIDEO SUMMARIES



XA04C1348

MULTIMEDIA SYSTEM

to be shown at PIME '99 (Poster presentation)

Title: Multimedia system for the visitors' centre at the Ignalina NPP
Base: CDROM
Language versions: English, Lithuanian, Russian
Producer: UAB "Elektronines leidybos namai"
Made for: The Ignalina NPP
Financed by: Swedish International Project Nuclear Safety
Purpose: To be shown at the visitors' centre, at schools and institutions
Target Audience: General public

CONTENTS

1. Background
2. History of INPP growing
3. Visaginas – how the town came into being
4. Lake Druksiai
5. Development of nuclear power
6. Technical data of INPP
7. Description of INPP
8. Characteristic features of RBMK reactors
9. Reactor design
10. Technical parameters of RBMK-1500 reactor
11. Nuclear reaction and nuclear fission
12. Types of nuclear reactors
13. Circuits and systems
14. Radiation safety
15. Safety systems at the INPP and their description
16. Upgrading nuclear safety at INPP following the Chernobyl accident
17. Safety problems at INPP
18. Radioactive waste management in the world
19. RW Management at INPP
20. Energy in Lithuania
 - thermal power stations
 - cogeneration plants
 - producing biogas from organic waste

The contents are illustrated with video clips, animations, photographs, etc.

Margareta Alvers
10-12-1998



XA04C1349

RADIUM

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Today, one-quarter of the population of developed countries falls prey to cancer. The advance of this vicious, malignant disease can be slowed, or even halted, by radiation, a treatment known as radio therapy. In Zagreb hospitals alone, around a hundred people receive this treatment every day.

"It was like creating something from nothing. I am now able to say, without any exaggeration, that for me and my husband, it was the most fulfilling period of our life together."

Those were the words of Marie Curie Sklodowska, the first women scientist ever to receive a Nobel Prize for physics and chemistry, which she used to describe the protracted and arduous search for the element, radium. She finally discovered it in 1898, but at that time had not succeeded in isolating it.

Madame Currie and her husband, Pierre, spent four years processing some ten tones of uranium waste from Czech mines. After a number of failures, financial difficulties and countless sleepless nights, in December 1902 they finally managed to isolate a hundred milligrams of pure radium-chloride. The historic significance of the resulting powder lay in radium's extraordinary property – its powerful radioactivity.

The nuclei of radioactive atoms are unstable, they disintegrate, forming different nuclei and in the process they emit rapidly moving particles and penetrating electro-magnetic waves, which we call radioactive radiation.

Radioactive radiation has offered new hope to humanity in its struggle against malignant diseases, since its effect on malignant cells is greater than it is on healthy cells. Consequently, radio-therapy is devising new methods to ensure that the bulk of the radiation is targeted on malignant tissue.

Radiation treatment began immediately, with the very first one hundred mg to be isolated by the Curies. Initially, treatment focused on facial areas, but it was soon extended to tumors elsewhere. However, regardless of its apparently extensive use, the total amount of radium to be isolated up until 1950s – when production was halted – is estimated to have been no more than five kg.

In the meantime, the advance of nuclear technology has enabled the production of man-made radio-nuclides with a shorter half-life and better therapeutical properties, such as cobalt, cesium and iridium.

Radium was used progressively less often and by the end of the 1960s it was no longer in use in the developed countries.

Subsequently, outdated sources of radium, no longer needed anywhere, were frequently deposited in unsuitable storage areas, and without any special security arrangements in place.

And even if not totally forgotten, it was all too easy to mislay, lose and damage them. Additionally, the pressure of gaseous products resulting from disintegration in enclosed radium sources constantly grows, which can cause cracking, and may even burst open, leaking radioactive contents into the environment.

Needless to say, forgotten or lost sources of radioactive radiation present an enormous danger. They have been the cause of the largest number of accidents in the peace-time nuclear industry.

If such enclosed sources find their way to a normal refuse dump they can cause a dangerously high level of radioactive pollution of the environment. Should such refuse be recycled, that same radioactive source could contaminate an entire plant for the processing and production of recycled raw materials.

Even more dangerous is the situation where a glowing metal container attracts the attention of people unaware of the dangers involved. One recent example comes from a hospital in Goiânia, in Brazil where a single therapeutical source, forgotten in 1987 when the hospital was being relocated, contaminated close to 250 people, some of whom had inadvertently dusted themselves with the glistening radioactive powder. Four people - four adults and a child - subsequently died from its effects.

What makes old sources of radium such a special problem in their life. Despite the fact that the amount of radium is constantly reducing through disintegration, the process is much slower than is the case with contemporary therapeutic materials.

It takes as long as 1,600 years for the radioactivity level of radium to be halved, which means that those sources will remain dangerous for thousands of years to come.

Enclosed sources of radiation used today are strictly controlled, and are either returned to the producer (which is the most common practice) or else they are properly stored at safe disposal sites, once their useful life is ended.

For old sources of radium, however, we have no one to return them to.

Some we cannot even locate with any certainty.

Back in 1968, the United States Health Department established that since the earliest days of radiotherapy in that country, some 300 radium sources had either been lost or stolen; and of that number, a hundred could not be traced.

Croatia, a developing country going through a tough period of transition, was badly affected by an ugly, devastating war which has left deep scars, both on the people and the environment.

During the course of that war some radiation sources were damaged; but as soon as the armed aggression ended they were all located and made safe. It was nothing short of a miracle that no major contamination occurred.

The administration organization of the country, now being established; work on the new legislature, and the regulatory framework for protection against radiation, combined with a desire to achieve the systematic and safe storage of all existing radioactive waste, until the construction of a disposal site for low- and medium - level radiation waste, have all contributed to the decision whereby all radiation sources in Croatia are to be located and made safe.

Accordingly, it was agreed that the joint commission, involving Croatian Health Ministry, the Hazardous Waste Management Agency, the Institute for Medical Research, and the Ruder Bošković Institute, should organize the search, collection and conditioning of all radium sources to have been used in medical establishments throughout Croatia.

The subsequent investigation revealed that almost half of all radium sources are located in an old storage facility at the Institute for Medical Research.

Those sources, as well as others located in hospitals following months of investigation, have now been collected together in one place – the Ruder Bošković Institute.

Following a process of identification, and entry in a relevant data base, all sources were subjected to a conditioning procedure;

They were placed in stainless-steel capsules, each capsule containing approximately 50 millicuries of radium.

The capsules are sealed with a lid, welded in a place using a special procedure, which totally isolates the contents from the environment. Neither radium nor its products are able to escape from the capsule.

Then, the capsules, in groups of ten, are placed in a massive lead container, which prevents leakage of radiation resulting from disintegration.

The lead container is placed inside a stainless-steel barrel filled with concrete.

In this way, the radium sources no longer pose any threat to the environment.

Due to its long half-life, the barrels need to be stored in a deep geological disposal site. Although no such sites presently exist, the collection, conditioning and storage undertaken to date in Croatia have eliminated the possibility of an accident.

In short, it can never be allowed to happen that radium - once our servant and ally, but which today is useless and virtually forgotten - looms over coming generations as a deadly threat. A considerable contribution to the solution of the radium problem at the international level is being made by International Atomic Energy Agency, while in Croatia the same is being done by the Hazardous Waste Management Agency, known locally as the APO.