NRC'S BELOW REGULATORY CONCERN POLICY: A CHALLENGE IN RISK COMMUNICATION

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ABSTRACT

Even before the U. S. Nuclear Regulatory Commission (NRC) announced its Below Regulatory Concern Policy in June 1990, misperceptions and misunderstanding of the policy emerged. NRC planned a program to communicate to those outside the Agency what the policy meant--its basis, how it was developed, and how it would be implemented.

Congressional inquiries and a lawsuit to rescind the policy followed. Next came a series of NRC-planned public meetings around the country. In between, editorials were penned by others around the country mostly against the policy. Some of them were answered by the Chairman or other Commissioners. Numerous news articles were written--many balanced--others with alarming headlines. Through all this, the NRC tried to say what the policy really was and what it wasn't. For example, it was not a regulation with the force of law a regulation holds. That escaped most. This paper will look at NRC's efforts, the reaction to the policy, and provide insight into the difficulty of communicating radiation risk.

WHAT IS BRC?

BRC, for those who don't know, means "Because Regulators Care." Now for those who read the title to my paper the real meaning is Below Regulatory Concern. In addition, it's been called a lot of other things, some I can't mention in this room. But more on that later.

First, let me tell you what I plan to cover today about BRC. I will discuss what the BRC policy is and what it isn't; the intent of the policy; public perception of the policy; the extra public information efforts expended by NRC; what's behind the perception; fear of anything nuclear; why "beliefs vs. opinions" plays a role; and what's next.

In announcing the Commission's BRC policy in June of 1990, NRC Chairman Kenneth M. Carr said, "I believe the country needs this policy now on Below Regulatory Concern for several reasons. The main reason is it just makes sense to be consistent in our approach to dealing with these very low levels of radioactive materials. By very low levels, I want to emphasize we mean levels of radiation we encounter every day, such as a round trip in an airplane from here to the west coast."

He continued, "I want to ensure through this policy a greater consistency in the levels of protection that are applied to all similar decisions on such exemption to regulating these materials. For example, I want to ensure consistency in the cleanup of decommissioned plant sites and to handling of consumer products." In conclusion, he said, "Before this policy is fully implemented, I want the public and other interested and concerned groups to be involved with this decision. I am calling on everyone to participate in the implementation of this policy before NRC gets into a formal regulation."

INTENT OF THE POLICY

Throughout the development and announcement of the BRC policy the NRC was working toward establishing a framework for making consistent regulatory decisions when considering the exemption of very low levels of radioactive materials. In announcing the policy, NRC emphasized just that -- that this Federal agency works mainly through regulations and before anything would happen, the normal rulemaking process would take place, which includes opportunity for public comment.

Before the BRC policy existed, all exemption decisions -- and there have been many over the past 30 years -- were decided by the regulators on a case-by-case basis. An example is smoke detectors containing very small amounts of radioactive material. Certainly, professional and technical judgment and analysis comes into play. And, consequently, there was no consistency in those regulatory decisions. They were made one by one. Each one had its own technical merits, regulatory analysis, and concern for safety in it. But any time one uses such an individual approach, there are bound to be variances in the outcome.

Therefore, the Commission worked toward striving for consistency in these regulatory decisions in a public setting. This is something that sounds like the right thing to do. The NRC is charged with leadership in setting and enforcing radiation requirements to ensure proper protection of the public and the environment. This consistency was the intent with the BRC policy.

PUBLIC PERCEPTION OF THE POLICY

But a funny thing happened on "the way to the forum" -- to recall an old Broadway show title. The perception of what is a "safe" level of radiation is not universally agreed upon. So the NRC took its best experts in radiation protection (health physicists) and regulators of nuclear material and nuclear power plants and came up with some numbers:

1 millirem per year for practices that affect large numbers of people (such as consumer products like smoke detectors) and 10 millirem per year for practices that affect small numbers of people (such as cleaning up a nuclear site).

Before issuing the final BRC policy, the NRC published an advance notice on the subject in the Federal Register. NRC also held some public meetings and looked at comments from a wide spectrum of sources on the advance notice of the policy statement. Then the NRC issued its final policy statement --note, not a rule-- June 1990, and a Federal Register notice was printed shortly thereafter in July. So far, this was fairly normal procedure for this agency, which takes its job of radiation regulation and incorporating public comments seriously. NRC operates in a open atmosphere. The Commission has licensed over 100 nuclear power plants in the 1970's and '80s and prepared an Environmental Impact Statement for each plant, according to National Environmental Policy Act (NEPA), which requires public comment and consideration and disposition of those comments. The agency also routinely holds public Commission meetings and provides information in the form of press releases, technical documents, and information reports in all shapes and sizes.

EXTRA PUBLIC INFORMATION EFFORTS BY NRC

In the BRC policy statement case the NRC took an approach that was rather different than "business as usual" in that the agency spent extra effort in preparing for the public announcement of this policy -- not just a Federal Register notice, which is all that is required by law. First, the agency formed a task force of technical management and staff, including the public affairs and state programs groups, to develop a plan for release of the policy. The public affairs staff produced a brief booklet (1) explaining in lay terms what the policy was all about (and printed and distributed several thousand copies). In addition, a full-scale press conference was held on the day the policy was announced. The Chairman opened the press conference and NRC technical managers followed to explain the details and answer questions.

In addition, after the final BRC policy was announced, NRC held a series of five public meetings near each of its Regional offices around the country. The intent of these meetings was to have the NRC technical staff explain the policy, describe briefly how the policy statement would be implemented and solicit comments from interested individuals, including NRC licensees. The thought was that the licensees would probably be the ones most affected by any actions as a result of this policy and, thus, would be the ones most likely to attend the meetings and ask about implementation. Since it was "just a policy," the agency concluded the public should be reassured that they would have additional opportunities to comment when the real implementation took place, that is, after a petition for exemption was submitted to NRC for consideration *analysis, which* would usually include a proposed rulemaking proceeding and public comment. Unfortunately, the meetings were not set up in a format conducive to real dialogue among the participants, most of whom represented the interested public and environmental advocacy groups.

Adding to the extra effort made to fully explain the BRC policy, the Chairman and others responded to editorials that began appearing across the country in an effort to explain what the policy was and what it was not. There were even appearances on the "Today Show" and other programs by NRC managers. Letters from Congress and Governors were answered as well as those from state low level waste compacts and solid waste managers.

A few individuals and organizations were supportive of the policy. The Health Physics Society issued a position statement endorsing the policy, the Conference of Radiation Control Program Directors agreed with most of the policy, and a Nobel Laureate thought it was about time the government did something rational about radiation regulation.

However, the response was large and but was not generally favorable. It seems many people thought dangerous radioactive waste was going into their neighborhood sanitary landfills. To get to the point of this discussion the question is why? Why, when NRC was trying to set a standard for consistency in exemptions rather than have varying technical decisions each decided one by one over the years? Why, when the government was trying so diligently to spend the taxpayers' dollars on the risks that could really be harmful to them? Why, when the NRC thought it had "gone the extra mile" in explaining the policy in "public information" terms so all could understand?

WHAT'S BEHIND THE PUBLIC PERCEPTION

In my judgment, the answer lies not only in the reaction, by those in the public, private and government sectors, to NRC setting and announcing of this policy but in the general response to anything in the area of "Technological Risk" that Hal Lewis covers so ably in his new book by that title (2). As Professor Lewis points out, "Personal development is impossible without risk--how would anyone learn to ride a bicycle?"

As most of you in this room know, risk equals the probability or chance that something will happen multiplied by the consequences or loss as a result of the particular event. Professor Lewis says in his book there are four categories of risk. I think it is helpful to look at these categories. The first is familiar high risks where good information exists and there is a high toll on life, such as driving and hang gliding. The second category is familiar low probability risks

where the consequences are so high that they must be taken seriously, such as earthquakes. The third category is very low probability risks of events that never have happened, but since the consequences could be so large they deserve attention. Atmospheric pollution or a major commercial nuclear accident are examples. Even though such a nuclear accident has never happened in this country, there is a very low probability that it will occur. As Professor Lewis points out, "we spend a great deal of money on regulation of the nuclear industry...but continue to lack any agreed sense of 'how safe is safe enough.' Therefore we have no way to know when we've done enough, and should point our efforts elsewhere" (2). That's what the NRC was aiming for by developing the BRC policy.

The fourth and last category Professor Lewis identifies is one with substantial risks that are hard to evaluate because they show up as increases in naturally occurring hazards. A good example is cancers caused in part from environmental contaminants where additional incidence is hard to separate from the "natural" rate (2). Professor Lewis notes that this is the most frustrating category because both the probabilities and consequences of these threats to our health and safety are elusive -- "not because the effects are unfamiliar, but because they are so familiar, and the extra damage is such a small increment in our already imperfect world. The classic examples are the health threats posed by low levels of natural or commercial chemicals, and the effects of low levels of radiation," he says.

I believe that the key word here is "imperfect." Many of the comments we received from the public meetings and in the media response to our BRC policy went along the lines that there is no safe level of radiation and therefore, you, NRC, should assure us of a zero level of risk from this hazard to our health and to future generations. That's right, zero level of risk. Many know this is literally impossible to achieve in anything, since there are plenty of naturally occurring risks all around us. Nor is it the standard the Congress adopted in the Atomic Energy Act. But that's the standard many want for anything nuclear.

Professor Lewis: "Our problem in assessing the probability of harm from these contaminants is that the effects are so small, despite the clamor they often generate" (2). Public policy, therefore, must look at reducing risk to an acceptable level. That level is the "how safe is safe enough" -- the intent of the BRC policy.

As Lewis points out, "The difficulty is that, since cancer is such a common disease (22 percent of us now die of some form of cancer), it is statistically almost impossible to determine just which cancer cases are due to what cause." This is particularly true when considering the effects of low levels of radiation. We know that large doses of radiation can cause cancer and are used to treat and sometimes cure it. But at very low doses the effects are just too small to be measured with the scientific knowledge at hand. By very very low doses, I'm talking about 10 millirem and below.

Environmental Protection Agency (EPA) Administrator William K. Reilly has been out speaking on the difficulty of regulating environmental risks and communicating those decisions. For example, he said, "To be fully effective, the federal agencies charged with protecting public health and safety must be able to communicate constructively to an informed public -- a public that trusts the processes and the people involved in making risk-related decisions" (3). "In the past, however," Mr. Reilly points out, "we have had only limited success in communicating these decisions to the public" (3).

Mr. Reilly adds, "Our key to building public trust is to improve public understanding of how we make regulatory decisions" (3). I couldn't agree more. I believe that was part of the problem with communicating about BRC. The public does not understand, nor has NRC made great efforts to communicate, how we make our regulatory decisions, in this case for any exemptions for slightly radioactive materials from our tough nuclear regulations.

FEAR OF ANYTHING NUCLEAR

As Dixie Lee Ray tells us in her usual straightforward manner in her new book, "Trashing the Planet," "For all those who do not like radioactivity, the Earth is no place to live" (4). Well, the NRC tried the approach of comparing the very low levels in the BRC policy with the fact that radiation is all around us in both natural and artificial forms and amounts to an average of about 360 millirem per person per year in the United States. We pointed out the fact that this natural background radiation comes from such things as cosmic rays, from the earth itself and from our own bodies. We noted that most of us are also exposed to radiation from medical procedures and radon in our own homes. The EPA has had little success in drumming up any concern to correct the radon problem. We did not have to drum up concern about BRC.

We tried to set the record straight by responding to editorials generally against BRC which appeared in several of the nation's large newspapers. Many of these editorials referred to the National Academy of Sciences, National Research Council's report of the Committee on the Biological Effects of Ionizing Radiation (BEIR) and the fact that "low levels" of radiation produce more cancer than was originally thought. We pointed out that the levels of radiation used by the eminent scientists in this study as a basis for risk assessments are 1,000 times higher than the highest level in our BRC policy--that is, their concerns were at levels of 10 rem or 1,000 millirem as compared to the BRC maximum level of 10 millirem. The units of measurement sound similar to the average audience. We attempted to clarify the vast difference.

Some newspapers said we reversed half a century of tradition by de-regulating a dangerous substance without any justification and little public debate. There were scary headlines such as "Policy on Waste Raises Suspicions," Keep Landfills Radiation-Free", and "Protect Public From Radiation." Another headline read: "Regulators are Shielding Nuclear Industry." This headline ran over an invited editorial in USA Today (5) by Joan Claybrook, President of Ralph Nader's Public Citizen. Her viewpoint was that "This insane policy poses one of the greatest health risks to the general public ever perpetrated by a government agency."

Other letters to editors called the policy such things as ludicrous, dangerous and reckless. People were alarmed that "regular trash" could contain "radioactive material" and that radioactive materials could be "recycled into belt buckles and frying pans." We were accused of endangering public safety and contaminating drinking water. In public meetings NRC staff were called murderers. They were accused of sacrificing human life for economic profit, having no respect for the opinions of the American public, turning landfills into timebombs for nuclear waste.

The question remains: Why are so many people so afraid of any level of radiation even though it is all around them every day? From a book called "Nuclear Fear" (6), Spencer R. Weart traces the history of the images of nuclear energy and identifies some major themes related to the public's image of nuclear power. He says reactors seemed to become a "condensed symbol for all modern industrial society." His explanation of why nuclear power was singled out for this role is that the old myths about pollution, cosmic secrets, mad scientists, and apocalypse were historically associated with atomic power and radiation. The final, and perhaps most damaging, association with radiation for many is the threat of nuclear war, which is always there for some when anything nuclear is mentioned. This is an association that will not be forgotten by many.

Weart also concludes that "even education made little difference. Nuclear experts often suggested that the antinuclear movement was based on ignorance of facts, while the opponents too felt they would win support if only they could teach people the truth. Neither side was correct," Weart says, "for most studies showed that the way people felt about nuclear power was mostly independent of how much they knew about it. (In fact most people had only rudimentary knowledge, mixed with various bits of misinformation.) It was a phenomenon already seen two decades earlier in the fallout debates: when a person took a nuclear stance it was not from some special knowledge or lack of it, but as part of a total approach to society" (6).

BELIEFS VS. OPINIONS

This brings me to beliefs and opinions. Or how the psychology of beliefs and convictions is beginning to be studied by researchers. With the increase in the number of movements designed to effect social change, psychologists are looking at how individuals become inspired and trying to identify why these social causes are embraced with such fervor. The question is "how are simple beliefs changed into fiercely held convictions?" "Beliefs, by definition, can be fleeting." However, "Convictions, although evolving from initial beliefs, have considerably more stability and must meet stringent criteria" (7).

Everyone holds beliefs and opinions about various topics. Those interested in persuasion (or advertising as I call it) often study what kinds of messages persuade people---on the other hand in many areas, you have to answer what doesn't persuade people. We all know a friend or relative who is obsessed with a certain point of view on a particular issue and will reject any reasonable argument that anyone comes up with.

The research thus far on this subject identifies several characteristics of a true conviction, including being totally resistant to persuasion; having strong, even passionate feelings; and being willing to take action on behalf of one's conviction. A person holding a conviction is able to go out on a limb and risk embarrassment.

Although many questions remain unanswered about beliefs and convictions, it can be said that, indeed, the few galvanize the many. I suspect many of those opposed to the BRC policy hold convictions about radiation and nuclear power. It also helps explain that, even with excellent risk communication techniques, not all people will listen, let alone understand the information you present on an issue they feel strongly about.

IMPROVING INTERACTIONS

But this does not mean NRC should stop trying to be open and forthcoming about its activities. The agency made more effort to explain and listen to concerns on BRC than it has for most of its other policies or regulatory programs. It should be commended for its efforts, not shouted down.

Yet, these efforts still fell short. So, now what should the NRC do? In Rutgers University Environmental Communication Research Program, directed by Peter M. Sandman, the question of government frustration in dealing with the public is addressed in "Improving Dialogue with Communities: A Short Guide for Government Risk Communication" (8). The guide notes that "Agency staff and members of the public are apt to feel equally frustrated by stormy interactions. Both get weary of arguments that revolve around 'who said what to whom when,' rather than issues that contribute substantively to solving environmental health problems. In response, some agency representatives feel that the best interaction with the public is no interaction. They fervently hope that risk communication techniques will make the public go away and leave the agency to

make decisions in peace. However, there is a strong consensus among experienced practitioners that the solution to the problems described above is more, rather than less interaction."

In the guidance Sandman and company suggest includes recognizing the importance of community input. This means that people are entitled to make decisions about issues that directly affect their lives and probably will help the agency make better decisions. If the interested and affected community is involved in the process, this leads to greater understanding of a particular risk and often a more reasoned response. Cooperation tends to increase credibility. Without community input, battles that erode public confidence and agency resources are much more likely. It seems most technically trained individuals fear public interactions as much as the public fears radiation.

The guide also advises involving the community in the decision-making process, to the extent possible. This is a relatively new process to many agencies, including NRC, and is not easy to do. If we look at the Rutgers' "Ladder of Citizen Participation," (8) I added a column for NRC activities (Fig. 1).

As you can see, most of the agency's activities have been on the lower rungs: government power and inform. (This is true for most government agencies in this country.) Some activities have been at Consult 1, which includes public hearings and advisory committees. Yet, NRC has had a few activities in the Consult 2 rung, which included a negotiated rulemaking on the high level waste licensing support system and citizen input in the development of the NRC Safety Goal.

NEW INITIATIVE ON BRC

"But the success of any policy depends largely on its understanding and acceptance by the public." This quote is from the public information booklet NRC issued explaining the BRC policy. So, business as usual won't do.

NRC management and technical staff focus on engineering and science to perform their regulatory analyses. They understand and demand professional standards in

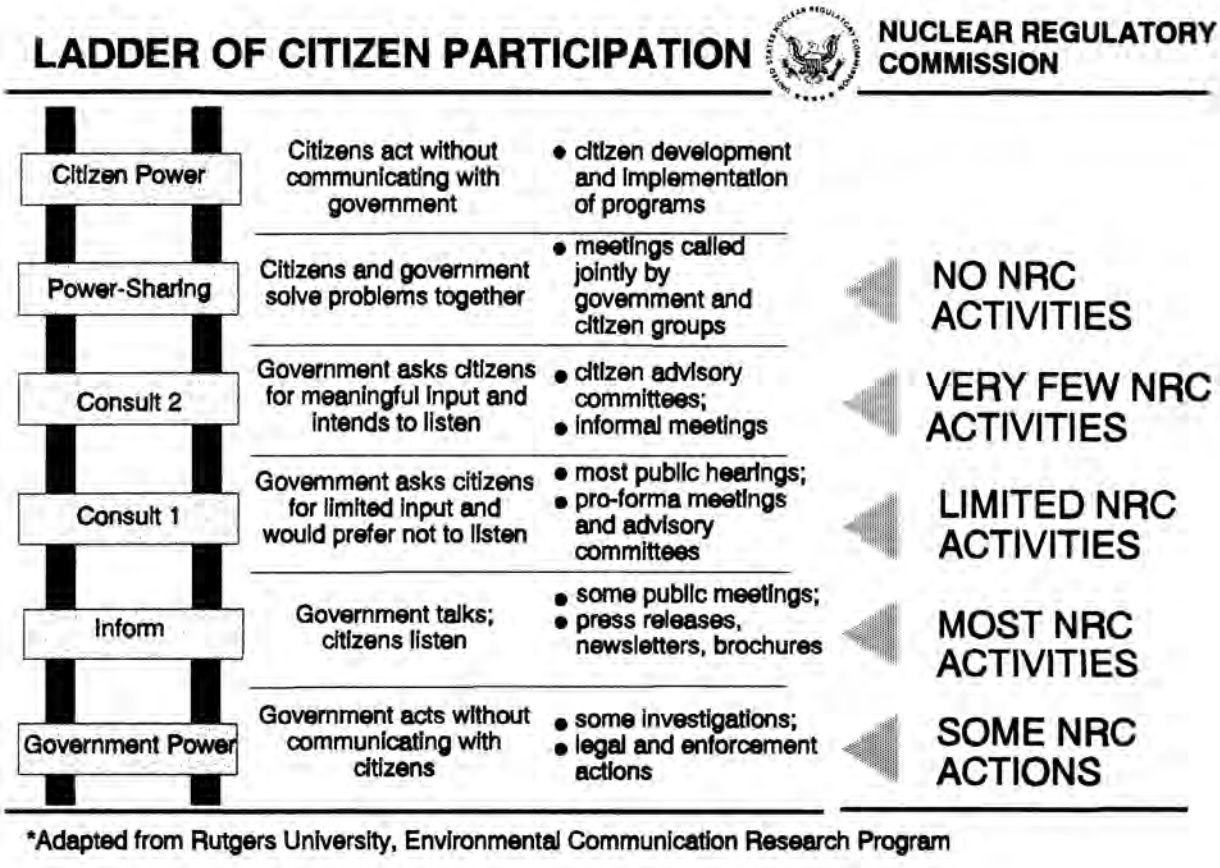

Fig. 1 Modified Ladder of Citizen Participation

these areas to accomplish the agency's mission of protecting public health and safety. Continued emphasis is needed to ensure that NRC applies the same professional standards in communicating how the agency does its work to those who may be affected by its actions -- the stakeholder in the NRC process.

The answer is to develop a comprehensive plan for two-way communication with the stakeholders, with an emphasis on the listening part. The plan must include elements to ensure effective communication encounters with interested and potentially affected groups. It must also include independent, credible meeting facilitators to make certain all sides get a fair chance to speak and exchange views. This demands effective meeting environments designed for constructive exchanges of information and using credible and effective agency speakers. If the people are not trained, training in proven professional communication techniques is essential.

Technical and outreach professionals can and should work side by side. This will result in a better informed public because of clearer communication earlier in the regulatory process. Issues of concern to stakeholders will be identified up front, thus there will be a better understanding of concerns about potential agency actions -- before they happen. In the long run, probably more resources will be spent up front, but the end result will be better public policy and more effective regulation.

[AUTHOR'S NOTE] On February 26, 1991, the NRC announced that it would initiate a consensus-building process to clarify differences and work toward resolution of the issues related to implementing its BRC policy concerning low-level radioactive wastes. The goal of this process is to identify issues, clarify concerns, and develop recommendations to the Commission concerning exemptions related to waste disposal of slightly radioactive materials.

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