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SES CONFERENCE TALK
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This is the fourth time that I have had the opportunity and pleasure to speak to you on matters of mutual interest. I have decided to base my remarks on some of my observations of the NRC as an organization over the time I have been here, and I will relate them to the two themes of this conference, human factors and communication.

I have repeatedly been convinced that the NRC is a very high quality professional organization with strong internal integrity and a dedicated and highly motivated staff.

The results of NRC regulatory work have had a very positive effect on the safety practices of the nuclear community both at home and abroad and have led directly to a much improved nuclear safety culture in the U.S.

The NRC is highly respected and viewed as a world leader in nuclear safety matters by its professional peers overseas. However, the NRC is largely unknown to the general U.S. public and what is known is misunderstood or undervalued. Even our speaker last evening seemed to think we were part of DOE! The press treatment of the NRC is neutral to negative and almost never favorable. We all have become accustomed to breathing a grateful sigh of relief when we find the NRC mentioned in the press without an attack on us in the article.

The technical quality of the NRC staff is quite high in general, but the staff does suffer from two problems. First, the Commission is starting to lose some of its more experienced and knowledgeable professionals largely through retirements. (Fortunately the new additions to the staff in recent years have been quite good and look very promising, but they lack experience.) The agency must work very hard to keep the level of professional expertise of the staff constantly up to date. Second, there are serious gaps in some scientific and engineering areas that will have to be filled. I have in mind certain aspects of materials science, digital instrumentation and controls in general, and what used to be known as cybernetics. I guess that dates me pretty well . . . cybernetics hasn't been in use for twenty years or so! The NRC must be able to go eyeball to eyeball with licensees and others (for example the ACRS) on technical matters with the confidence

that its people are technically very strong. That requires a technically top-notch staff capable of covering all the relevant technical areas and fully up to date in all relevant disciplines.

Internal communication within the NRC is probably about average for an organization of our size, but could be better. The shortcomings in communication that I am talking about are connected to human relations and human factors. The consequences of these communications problems are inefficiency and occasional lack of coherence in our activities. I do not believe that these problems had a direct significant adverse impact on our performance in protecting the public's health and safety. Nevertheless, we should take seriously the correction of these weaknesses because they detract from our image and credibility with the public and our professional peers.

At least two of our Principles of Good Regulation could be more generally applied to the difficulties that I have in mind, they are openness and clarity.

Let me take up the matter of maintaining the professional strength of the agency. I have spoken many times on the necessity of maintaining one's professional credentials and the importance of managers, such as yourselves, encouraging their staff members to stay current in their respective fields of expertise and to engage in professional activities that stimulate creative and critical thinking on the matters with which they must deal. I won't elaborate on that point of view today, but I will emphasize the importance of strategic thinking on staff development. Top level managers must think and plan strategically about the kinds of problems the NRC will have to resolve in the next five to ten years and see that the requisite high quality disciplinary expertise is in place to deal with them. This will require the development of a living total staffing strategy taking into account the nature of the anticipated issues as well as the additions, losses, and renewals of staff that will have to take place. The plan will have to consider the possible sources of new expertise and take whatever steps are possible to see that the flow of knowledge and experience that will be needed can be assured. When you have a fire is not the time to establish a fire department. Five years ago, when I first came on the Commission, I spoke to a group of NRC staffers and made the point that I had observed that the NRC lacked strong staff expertise in digital instrumentation and controls and that shortfall should be corrected. During the Q&A

period someone sharply questioned the basis for my conclusion, because no U.S. plants had any appreciable number of digital I&C systems installed, and there were no significant problems in that area for currently operating plants. Perhaps there are still people at the NRC who still feel that way, but it is my understanding that today one of the toughest problem areas for us to handle in reviewing new designs and in approving proposed replacements of obsolete I&C systems in older plants is in digital and computer controlled systems. We do not have enough strength to be entirely on top of these questions. Had we started to add top notch staff, at the Ph.D. level, one at a time five or six years ago we would be in much better shape than we are today. A strategic staffing plan, such as I am talking about, would have made a big difference. I strongly suggest that long term strategic thinking on staffing should to be part of every senior manager's continuing responsibilities.

My second topic is internal communications within the agency. Clearly, I have not had an opportunity to observe how internal communications proceed at all levels of the NRC. However, I have some concerns regarding how the staff communicates to the Commission and vice versa, and I strongly suspect that the factors contributing to ineffective communications between any levels within an organization probably will have an impact at other levels of that organization. So I will base my remarks on communication at the staff-Commission level.

In its approach to communicating with the Commission, the staff often appears to have adopted a hunkered down posture lacking in candor. I know that tangling with the Commissioners might be dangerous for a staff member. The staff approach to the Commission seems to be properly deferential, but tightly controlled to the point of supplying only a bare minimum of information. The staff appears too afraid to tell the Commissioners the whole story because that might make it possible for the Commission to micro manage the staff. But telling too little may very well invite exactly what the staff is trying to avoid.

On several occasions I have felt that a terrible waste of staff time and effort has gone into producing a product that the staff had thought was exactly what the Commission wanted only to have its work rejected because the staff either misread the Commission's wishes, or because the Commission had not had enough dialogue with the staff to understand precisely what the policy issues were and hadn't decided exactly what it wanted. The situation of the staff with respect to the Commission was exactly analogous to that of the licensees with regard to the staff when a licensee feels that it has been sent out to find a suitable rock and learns that, despite their efforts, what they have produced is an unsuitable rock and have just been sent out to

look for a better one. I suspect that the arms-length ex parte relationship between the staff and the licensees that must govern some aspects of staff-Commission relationships has gotten in the way and unnecessarily hindered communication. But another aspect of human relations is also probably coming into play.

When I was a young professor my, largely older, colleagues were delighted to discuss their work with me even though they may have been working in very different disciplines from my own. But when I became a college administrator these same people suddenly began to behave towards me as if I had recently had a lobotomy and couldn't be expected to grasp even the most elementary aspects of what they were doing. They just couldn't discard their cherished view that all administrators are incompetent and inferior beings. I sometimes sense that the NRC staff, while perfectly respectful, tends to regard the Commissioners with much the same degree of skepticism. Perhaps that view is entirely justified, but it is decidedly unhelpful in advancing the NRC to an even higher level of effectiveness and excellence. I would like to see the NRC move more toward a higher degree of openness within itself so that more information is available to the Commissioners at an earlier point in staff work enabling the Commissioners to be better able to identify the kinds of policy issues that they must deal with and also be in a position to give helpful feedback to the staff. The staff should feel free to express its views of these matters and help the Commissioners to evaluate their own positions before ultimately hardening their positions. On the other hand, the Commissioners must become more sensitive to the staff's worry about being micro managed by five Commissioners. Commissioners have at times become too involved in administration as distinct from policy setting high-level management. I have undoubtedly been guilty of this from time to time, even though my intent has been not to do so. What can help is a higher degree of candor from the staff when it feels that the Commission may be going awry. I suppose that this is the classic situation that calls for the messenger to keep one foot in the stirrup when delivering the message! I will leave to you to figure out what is the stirrup.

These are a few of the thoughts that I wanted to share with you today. I would now like to give you an opportunity to have at me. Who would like to go first?

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