



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs

Telephone: 301/415-8200

Washington, DC 20555-0001

E-mail: opa@nrc.gov

Web Site: www.nrc.gov

S-03-007

**Mona Lisa,
Nostradamus
and the Advisory Committee on Reactor Safeguards**

**Remarks by
The Honorable Greta Joy Dicus
Commissioner**

**Advisory Committee on Reactor Safeguards
500th Meeting Celebration**

**Rockville, Maryland
March 5, 2003**

Introduction

Good Morning everyone.

Leonardo da Vinci once said "You do ill if you praise, but worse if you censure, what you do not understand."

So, why are we here today?

In other words, what is so significant about the 500th meeting that warrants all this hoopla? I did not know. So in keeping with the sage advice of Leonardo da Vinci, I have decided neither to praise, nor censure what I do not understand. Instead, I seek to better understand.

So we did a Internet search to find out who else might be celebrating a "500th" or if there is special significance to a "500th" anything. Our results:

You might be interested to know that Ukrainian President Leonid Kuchma recently signed the decree supporting the initiative of the Crimean Council of Ministers to celebrate the 500th anniversary of founding of Bakhchisaray in September, 2003.

In addition, on May of this year, the 500th anniversary of the funding of the Cayman Islands will be celebrated. They will have great food, good music, fireworks and a whole lot more.

In the world of sports we found that in 2003, the Concordia University women's hockey coach won his 500th game, Gene Keady won his 500th game when the Purdue Boilermakers knocked off Indiana, 69-47, and a few National Hockey League players would be playing in their 500th game. We also noted that if you hit 500 home runs, like Eddie Murray, you have a good shot at getting into the Hall of Fame.

In the world of business, Marriott opened its 500th Fairfield Inn hotel in Rogers, Arkansas, growing to nearly 48,000 rooms in 48 states. We concluded that this is only significant because it is in Arkansas.

We were still puzzled: no Presidential decree; no great food, good music, or fireworks. Maybe the ACRS had 500 wins or hit 500 home runs and will enter the Advisory Committee Hall of Fame.

How about longevity and endurance or for getting beat-up in 500 hockey games? After some reflection, we determined that the staff should get that recognition.

Finally, we figured it out.

In 2003, the world celebrates the 500th anniversary of the painting of Mona Lisa, the 500th birthday of Nostradamus, and the 500th meeting of the ACRS. If you look at the pictures: the beguiling smile, the prophetic analysis, the mystery. Our own harmonic convergence.

I am pleased to be part of this convergence and I am delighted to be here today to help celebrate this noteworthy milestone and acknowledge the tremendous contributions that the ACRS has made to the NRC, the nuclear industry, and country in the safe use of nuclear energy and nuclear material.

I've had the pleasure of receiving outstanding technical advice from the Committee over the past 7 years, which has always been extremely useful in my deliberations, whether I've totally agreed or not. I have relied on your independent insight and you have played a prominent role in our most significant regulatory reforms. And while, by most admissions, the ACRS has not hit a home run every meeting, your efforts are clearly Hall of Fame material.

Some of the members I have gotten to know fairly well and the many foreign dialects they speak, including Tennessean and South West Texan. I would like to welcome back to the NRC the former ACRS members and their guests. It is a pleasure to see you again.

Yesterday, you heard from Chairman Meserve on the Role of the ACRS in Nuclear Regulation and Safety and Forest Remick on the History of the ACRS, and I will try to minimize repeating a lot of what they have said. Today, I share with you what I perceive to be some overarching challenges facing the ACRS in the future. I hope that some of my comments are provocative and will stimulate future

dialogue and reflection. My comments today will focus on three challenge areas: relevance, relationship, and abandonment.

Relevance

As I mentioned, the Mona Lisa is 500 years old this year. Much has been said and written about the painting and it is arguably, the most famous painting in the world. It has been studied, and studied, and studied.

One more recent analysis of the Mona Lisa conducted by neuroscientist Margaret Livingstone of Harvard University Medical School revealed some of the science behind human visual perception of art at the 2003 American Association for the Advancement of Science Annual Meeting. According to Ms. Livingstone, "The elusive quality of the Mona Lisa's smile can be explained by the fact that her smile is almost entirely in low spatial frequencies, and so is seen best by your peripheral vision." Livingstone is further quoted as saying "I'm demystifying the procedures that some artists have known about for years, but not debunking their art in any way."

I may not know art, but Ms. Livingstone's discussion brings up several good points.

First, is her analysis meant to aid an artist or a neurologist? An art consumer, a gallery, or an art dealer? Or does it just probe an intellectual curiosity? While Ms. Livingstone suggests she is demystifying the procedures some artists have known about, I doubt that most aspiring artists will or need to understand the impact of low spatial frequencies on peripheral vision and on the brain.

It is often seductive to satisfy intellectual curiosity, but you must continue to ask yourself : "Who is the audience and is the information that I am providing useful for them?" When you have multiple target audiences, as is typical, you will need to be more circumspect in how you deliver your message and to ensure your message is relevant.

In determining regulatory relevance, you will need to answer one fundamental question: "How will this affect regulatory decision-making, public health and safety or common defense and security?" Your technical expertise is most valued by the Commission and it is your ability to discern and advise on those policy-making aspects of the technical information that will continue to bring the most value to the Commission.

In the future, you may be called to use your expertise and influence to discipline our review processes. You do this now, to a certain extent, when providing the annual report on NRC's Safety Research Program. Given ongoing risk-informed initiatives and the potential for new innovative reactor designs, you may need to not only provide the Commission with advice on technical issues associated with those activities, but also on the value of those activities that are most needed for regulatory decision-making. In influencing technical discipline over staff review activities, you may also need to consider changes to your review processes.

NRC policies, regulations and reviews must be based on good science. Not all science, however lends itself to good regulation. We must discern carefully what is useful from that which may just be interesting. And even when something may be useful, it will need to be prioritized. This will be essential for two reasons. First, because, like the goal of our risk-informed initiatives, we need to focus on those activities that contribute most to improved regulatory decision-making the public health and safety and the common defense and security. Second, you and the staff cannot do it all.

Relationship

While the ACRS contributions have been significant to the agency's regulatory program in the past, I foresee an equally significant role on the part of this advisory committee in the agency's activities at the present and in the years to come. In a maturing nuclear power industry, new nuclear plant designs are emerging; the transition to a risk-informed and performance-based regulatory structure is fast approaching; and licensees are submitting large numbers of applications for license renewal and power uprates. As the nuclear power industry moves forward and as the NRC moves toward improved regulatory processes, the agency becomes ever mindful of its most important responsibility and principal duty -- safety. We have the best regulatory framework in the world, and we can still improve. Consequently, the perspectives and advice of the ACRS are more essential than ever on these matters.

The future of nuclear power depends on maintaining safety. We must never compromise safety as we continue to demonstrate creativity, openness, resolve and resilience in meeting each and every new challenge. While the industry's role is to operate safely by setting and maintaining high standards, even above those required by regulation, the NRC continues to provide stable and predictable processes, provide independent and vigorous oversight, and thus ensure that the public remains confident that we are a strong and effective regulator. And that is where I see an important role for this Committee to play. As a standing Committee, the ACRS remains current with respect to nuclear safety issues important to NRC, including those related to reactor operating experience, regulatory reform, and agency need for safety research.

Over the years, the ACRS's role has evolved. Today you are called to interact increasingly with industry, interested public stakeholders, the NRC staff and the Commission. For these stakeholders, you are not just an advisory board, you have become a sounding board, a spring board, an ironing board, and even a Ouija board. On one occasion, you have even become a Differing Professional Opinion panel, where, under the leadership of Dana Powers, you provided assistance in resolving a long-standing differing professional opinion relating to steam generator tube integrity. In the future, I envision only an increasing relationship with all these stakeholders. I doubt that Nostradamus could have predicted how complex and challenging your role may be !!

I believe that, in the near future, you will need to evaluate these relationships. This evaluation will, of course, need to consider the effectiveness and efficiency of your processes and how these relationships may affect or perceive to affect your role as an independent committee. In general, you have a very powerful role in that you provide an impeachable, independent technical perspective. Your deliberations have been free from politization.

The role of ACRS will continue to be significant in NRC activities to support increased interaction with the industry and stakeholders, establish a new plant licensing infrastructure, support timely identification and resolution of technical and policy issues, and prepare for an effective transfer of technology. Issues associated with some of the newer designs will likely result in many technical and policy challenges. Some of these challenges include high-temperature materials performance, qualification of accident analysis codes and methods, qualification of coated particle fuel, and need for “containment or confinement.” To meet these challenges, the Commission must rely on the learned and independent counsel of ACRS. It is essential that your expanding roles and relationships neither compromises your independence nor politicizes your processes.

Abandonment

We all recognize from history that the issues which confront the nuclear industry, and us as its regulator, are not static. As old issues are resolved, new ones arise to take their place. The most striking example of this has been the recent reactor vessel head degradation found at Davis Besse. I believe that the NRC, including the ACRS, has responded admirably to the event at Davis Besse. I also believe it has been appropriate to give related activities high priority.

However, the challenge I issue to you is to know when to stop (or not to start); to know when the energy spent reviewing these areas could be better spent reviewing other areas, areas which we know little about. This challenge arises because it becomes comfortable and even desirable to work on these issues.

Security in a post September 11th environment might serve as a good example. The work is high profile; the benefits are tangible; and the feedback is positive. However, I liken it to children rushing to the soccer ball in a soccer game; the individual children feel good for the moment because they’re close to the ball, but over time the team can suffer because of it. The NRC is also a team and sometimes the best way to support the team is stepping away from the ball and taking a look at the whole playing field.

Again, I quote the Maestro, Leonardo da Vinci, “Every now and then go away, have a little relaxation, for when you come back to your work your judgment will be surer since to remain constantly at work will cause you to lose power of judgment. Go some distance away because then the work appears smaller, and more of it can be taken in at a glance, and a lack of harmony or portion is more readily seen.”

The challenge is not to take more annual leave. The challenge is to step back and question what has become routine, question what has become comfortable, and question what has never been questioned. Do not accept - - “This is the way we have always done it” either from the staff or from yourselves. Slaughter your “sacred cows”.

I view your relationship with the staff as similar to that the staff has with our licensees. Specifically, the staff pokes and prods our licensees to assure themselves that licensees are carrying out their primary responsibility to safely operate their facilities. Similarly, the ACRS pokes and prods the

staff to assure itself that the staff is carrying out its primary responsibility of having reasonable assurance, through its reviews and inspections, that the facilities are being operated safely.

And just as the staff has the authority, through its audit-type inspection process, to pick and choose where it pokes and prods our licensees; the ACRS has the authority to pick and choose where it pokes and prods the staff. I suggest that you use this authority thoughtfully and judiciously. You have begun to do this in the area of power uprates by not reviewing smaller uprates, but I believe more of it needs to be done. I believe you would serve the staff and the Commission better if, instead of reviewing a broad spectrum of staff activities, you periodically choose "surrogate" activities in each technical area. A perfect example would be in the area of material and chemical science which has clearly been in the news lately because of Davis Besse. Instead of reviewing all things Davis Besse, I see much greater value in the ACRS focusing on a single particular aspect of vessel head degradation, whether it be the cracking rates, corrosion rates, or behavior of boric acid at high temperatures. By focusing on a single aspect, I envision the ACRS being able to perform a more thorough and aggressive review, much to the dismay of the affected staff who drew the short straw, I know! But, because of such a review, I envision the ACRS being able to make a "finding" that the staff, in this technical area, are appropriately knowledgeable, are asking the right questions, and are obtaining appropriate resolution. Finally, with such a finding, I envision that the ACRS could perform significantly less aggressive reviews in that technical area for some period of time.

Conclusion

As our esteemed colleague, Dr. Apostolakis, once told the Commission, ACRS does not have all the answers, our goal is to contribute to the dialogue. I hope that these comments have been provocative. I do not have all the answers and I have not tried to predict the specific technical challenges or issues that will confront you in the long term. I am not, after all, Nostradamus.

However, I encourage you to consider the challenges of relevance, relationship and abandonment. These are important challenges that if confronted and conquered will best serve the ACRS and the Commission.

Finally, one more quote from da Vinci: "Obstacles cannot crush me. Every obstacle yields to stern resolve. He who is fixed to a star does not change his mind."

Again congratulations and best wishes for continued success.