



# NRC NEWS

**U.S. NUCLEAR REGULATORY COMMISSION**

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**“Focus on Regulation”  
Prepared Remarks for  
The Honorable Gregory B. Jaczko  
Chairman  
U.S. Nuclear Regulatory Commission  
at the  
Goizueta Directors Institute  
Atlanta, GA  
August 10, 2010**

Thank you for the introduction. I would like to thank the Institute for Nuclear Power Operations (INPO), the National Academy for Nuclear Training, and the Goizueta Business School for their invitation to address the Directors Institute.

As leaders of the companies that own and operate many of our nation’s nuclear facilities, you have an important role to play in ensuring nuclear safety and security. I know that the companies you oversee – some of the largest in the country – have portfolios that cut across many energy sectors. In approaching your nuclear holdings, I encourage you to consider how nuclear power is different. It is a highly complex and sophisticated energy technology with potential consequences – should something go wrong – that may be significant. There was a time in our nation’s history with nuclear power in which that was not fully appreciated. Insufficient caution was paid at times and the industry experienced operating and quality problems – none greater or more impactful than the accident at Three Mile Island in 1979.

Three Mile Island led to a lot of changes for the industry and for the agency – changes which have significantly enhanced safety and in which the industry can take pride. But despite that progress – and despite the fact that Three Mile Island did not result in a single casualty – that accident has left a broad and deep imprint on the public consciousness.

The challenge for you – the leaders of the utilities that own many of the nation’s nuclear plants – is to ensure that our nation never again experiences an accident like Three Mile Island – that no iconic image like its cooling towers ever again enters the public consciousness. With that mind, I would like to discuss today three areas in which I think your leadership can make a significant difference in promoting nuclear safety and security.

## Knowledge Management

The first issue is knowledge management. With 104 operating reactors, the United States has the largest commercial nuclear industry in the world. That provides the industry and the agency a wealth of operating and regulatory experience from which to draw to determine how to best advance nuclear safety. But since most reactors have been in operation since the late 1960s or early 1970s, the first generation of nuclear workers – the workers who first operated these plants and weathered the industry’s early growing pains – is now beginning to retire. With their retirements, these employees take with them a tremendous amount of knowledge and experience. The industry needs to work hard to ensure that their long-time employees, as they retire, pass on their range and depth of knowledge to the next generation. No one wants to relearn forgotten lessons by reliving the mistakes of the past. As Ben Franklin observed, “experience is the best teacher, but a fool will learn from no other.”

This is not the first time that the industry has confronted these sorts of knowledge management challenges. From the early 1960s to early 1970s, what was once a small, nascent industry was transformed into a burgeoning, mature industry. In the late 1950s and early 1960s, the utilities had little or no experience with managing the operation of nuclear reactors. But the industry benefited from its small size in that a relatively small group of experienced scientists and engineers operated those early plants. As of 1962, there were only six commercial reactors in the United States. But with the rapid increase in reactor construction that began later in the decade, the industry could have done a better job than it did in dispersing that concentrated expertise and experience throughout the ranks of thousands of new employees hired to operate all those new plants.

In the coming years, it is critical that you emphasize the importance of knowledge management issues to your chief executive officers and chief nuclear officers. As I’ve said, the retirement of that first generation of nuclear workers poses challenges, as will the potential construction and operation of new reactors that employ different technologies and designs. These challenges are certainly distinct, and not as severe, as those that the industry faced in the late 1960s and early 1970s. The industry today has much a broader employee base and decades of operating experience that it didn’t have before, and the potential for new reactor construction at this point pales in comparison to the market explosion of a generation ago. But the challenges of today are real and significant. I understand that the industry has taken some significant steps to address these issues, and it should continue to do so aggressively. I often meet with hundreds of employees during my visits to nuclear plants. They are dedicated professionals, but the industry won’t continue taking full advantage of their knowledge and experience without sustained leadership from you.

## Safety Culture

The second issue that I would like to discuss today is safety culture. Highly trained and qualified workers are necessary for safety, and today’s workers are as well trained and qualified as ever, due in no small part to the work of INPO. But good training isn’t enough on its own to ensure safety, unless workers demonstrate a consistent commitment to safety in the way that they approach their important responsibilities.

In recent years, the critical role of safety culture has become increasingly recognized in many areas, including most recently with regard to the Gulf oil disaster. The safety culture issue has a long history in the nuclear field. In fact, the term “safety culture” is reportedly to have first been used in the nuclear context – in the 1987 report by the Organization for Economic Cooperation and Development Nuclear Energy Agency on the Chernobyl disaster. But going back even further, you can read in the Kemeny Commission Report on the Three Mile Island accident the concern about complacency, the need for a questioning attitude, and other factors that we would associate today with the concept of safety culture.

Safety culture is not a simple issue, but it is important one. I’ll share with you a story from a few years ago that illustrates this point. At a to-remain-nameless nuclear power plant, an employee raised a safety concern through an anonymous channel. The site vice president at this plant took these concerns very seriously. He desperately wanted to hear from the employee to find out more about the safety issue, to ensure that it was resolved. So he called all the plant’s employees together as a group and asked the anonymous tipster to come forward to identify him or herself. Now, there are a couple of different ways to look at this situation. If there were really a strong safety culture at this plant, the concerned employee would have good reason to come forward so that he or she could be congratulated for identifying an issue that, if left unchecked, could potentially lead to an unsafe working environment. On the other hand, if the safety culture at this plant was not so strong, the site VP's actions could in and of themselves be seen as intimidating and retaliatory. And if we focus for a quick moment on the fact that the concern had been raised anonymously, I think we have our answer as to the situation in this particular instance.

First and foremost, this story demonstrates how important it is to have a strong safety culture. Here you have a real safety issue in question, and the employee who identifies it only feels comfortable in alerting the plant managers anonymously. This situation isn’t even the worst-case scenario where an employee doesn’t even feel comfortable raising it anonymously. The NRC has sound rules and strong oversight programs in place, but the simple fact of the matter is that the agency can’t be everywhere. The licensees that we regulate always will have the primary day-to-day responsibility for ensuring that their facility operates safely. That is why it is critical that our licensees focus on cultivating the type of open, collaborative organizational culture where employees feel comfortable raising questions and issues.

The second point that story highlights is that for an organization to develop a strong safety culture, managers and employees at all levels of the organization must demonstrate a consistent focus on safety and security. This isn’t just about the engineer on the ground who is responsible for spotting the issue in the first place, or even his or her supervisor who should be encouraging employees to come forward with possible concerns. The very top ranks of an organization have to make clear that their primary focus remains on safety and security. And when I refer to the top ranks, I don’t mean just the chief nuclear officer (CNO) of the plant, or even the chief executive officer (CEO) of the utility. The tone for a strong safety culture has to begin with the board of directors, the people in this room to whom the CNO and CEO ultimately answer.

As the industry potentially embarks on a new round of reactor construction, it is important to emphasize that a strong safety culture is critical for both operating and potential new reactors. Different factors may be at play, but a strong safety culture always remains important. For operating reactors with strong safety records, we have to be concerned that there might develop a “can’t happen here” attitude – a sense of complacency borne of past successes. We should be wary

of the view that just because something hasn't happened in the past, it won't happen in the future. Our nation's nuclear industry has gone down this road before – the Three Mile Island accident, or more recently the Davis Besse vessel head degradation, wasn't thought probable or significant until it occurred.

For potential new reactors, we have to be concerned that operators may place too much faith in the new technologies that they deploy. There is no question that the industry has made a lot of progress in developing and enhancing nuclear safety technology over the last several decades. The new reactor designs that the agency has received increasingly rely on passive safety technologies so that even when engineering and human failures occur, the inherent design of the reactor can mitigate problems. But passive safety only goes so far. A generation ago, plant designers and operators had tremendous confidence in the resilience of the plants' engineering designs. Events, however, have repeatedly made clear that highly qualified and trained people are absolutely necessary for assuring safety.

### Public Outreach

The final issue that I would like to discuss today is public outreach. Few civilian technologies – if any – have the ability of nuclear energy to attract public attention and elicit public concerns. Three Mile Island is a testament to that. The iconic image of Three Mile Island's cooling towers still has a hold on the public perception of nuclear power. That image pervades the popular culture, including the hit television show *The Simpsons*. I believe that that it is important for both the NRC and the industry to be pro-active in reaching out to the public and explaining what each is doing to ensure safety and security.

The agency's role, however, is distinct from that of the industry. As a regulator, the agency engages the public in its decision making to gather more information and a broader range of views to help us make the best and most informed decisions. Through open and transparent decision making, the agency tries to build public confidence that we are meeting our mission to protect public health and safety. But it is not the agency's responsibility to make the industry's case, and it is not the agency's responsibility to explain away less than stellar performance by licensees. We license a plant that meets our safety standards, and we work to ensure that the plant continues to do so after it receives its license.

Dr. James Schlesinger – a former Chairman of the Atomic Energy Commission under President Nixon – said it well: “It is not our responsibility...if a utility encounters unanticipated costs because of a failure to do its job properly, failure to comply with the procedures, or because of a change in the law. We are sympathetic; we understand your problem, but it is your problem.” And Chairman Schlesinger spoke on behalf of an agency – unlike the NRC – charged in part with promoting nuclear energy.

The nation's commercial nuclear industry has operated under the public spotlight for decades now. That appears quite unlikely to change in the coming years. If anything, in recent years, the public's focus on nuclear issues has grown along with the renewed interest in nuclear power. The best way for the industry to move forward is not to look to the NRC to advocate on its behalf – that's not our job – but for the industry to pro-actively reach out to the public. By listening and engaging the public, you can address some issues, mitigate others that might not be readily resolved, and build the trust to make future discussions even more productive. There are

too many views on too many issues to expect consensus as a matter of course – that is true for the agency and for the industry. But it's important to remember that public confidence is not the same thing as public agreement or public acceptance. The public can have confidence in an institution without always agreeing with it.

### Conclusion

I've put forward three challenges for you today. First, to recognize and act on the importance of capturing and passing on the rich experience and knowledge held by long-time employees who are leaving the industry. Don't let that invaluable resource seep away. Second, make safety culture one of your highest priorities, and keep it always at the forefront of your words and deeds. Third, elevate the importance of – and emphasis on – continual and effective public outreach, making it a standard part of your planning and management. By continuing to make progress on these issues, the industry can build upon its past strong record. Thank you for your time today, and I'll be happy to answer any questions you may have.