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A TIME FOR CLOSURE

Two years ago I gave my first public address as an NRC Commissioner to this forum. I purposely waited more than 6 months after I was sworn in to give that address because I valued the opportunity. The industry and the NRC had made the cover of TIME magazine, Millstone was a national issue, and the relationship between safety and compliance was the subject of a heated debate. I was learning much and I waited for the RIC because I believed then, as I do now, that this is the key forum to discuss nuclear regulatory policy and direction. I concluded my remarks with a quote from Cardinal Newman: [SLIDE 2] "in a higher world it is otherwise, but here below to live is to change; and to be perfect is to have changed often". Obviously, the NRC and the nuclear industry are very much alive if measured by that yardstick. In fact, some might say that perfection should be near since so many changes have occurred and are occurring ... and there have been good changes and good progress achieved in many areas. But a word of caution is needed; to be worthwhile, change has to result in concrete improvements, in tangible and timely achievements. The payoff is at completion.

Today, the NRC and the industry need timely closure of the essential regulatory elements on the present reform track. We do not need more changes now, although some more may appear. We need to finish what we started, and to do it with the urgency that this historic opportunity deserves. Moreover, it needs to be done while all the other tasks continue without interruption: the day-to-day work never stops.

In this regard, the coordination needed to effect these changes, including the assurance of appropriate resources, requires the systematic cooperative efforts of the Commission, the NRC staff and the industry. I believe that, currently, there are enabling factors supporting these efforts: from the NRC's viewpoint, the sustained superior safety performance of the plants and, from the industry's viewpoint, the safety and economic performance of the plants.

Closure, meaning completion and put to use, of the regulatory elements of the present reform track requires a blending of engineering value judgment, the conservatism found in our deterministic/prescriptive requirements, and of risk-informed decision-making. When possible, performance-based regulations should be added to the blend.

I admit that the headlines focus on risk-informed regulation and not on how to get there, but the reality is that this is an arduous transition that must be skillfully conducted in order to maintain a requisite safety envelope. The demanding and overly conservative deterministic regulatory framework, layered with extensive operating experience, provides a very strong safety net from which to launch a more effective and efficient regulatory regime. This regulatory regime will improve safety and reduce unnecessary burden. I believe nuclear power plants today are safe and productive generators of electricity that can become safer and be more productive when an improved regulatory regime is matched by an industry that continues to improve.

Timely closure of on-going NRC efforts requires an implementation strategy driving, and driven by, a major cultural change. I have become convinced that cultural change is a dominant factor. It is well known that cultural impediments exist at the NRC, at licensees, and even among stakeholders; some are not convinced of the need to improve. Old habits are hard to shake; to shake-up a culture is even harder.

I find the nuclear age culture fascinating: it was first formed by the Hiroshima and Nagasaki atomic explosions, and shortly thereafter by the Nautilus. These two early technological extremes shaped both the opponents and the proponents of nuclear power. By the mid-seventies, the nuclear navy had moved ashore and nuclear practitioners were convinced that technology had mastered the nuclear genie. And then, TMI awakened the dark fears created by the bomb: the post-TMI mentality was born, and it engendered, among other things, a deep two-way distrust between the NRC and the licensees. Recovery from the financial-sociological damages of TMI, and to a lesser extent from the post-TMI mentality, was well underway when the Chernobyl disaster - a real human disaster - took place and fear was again on the loose. However, something good came out of Chernobyl, a heightened appreciation of the contrast between the Soviet regime and ours: the realization that in the United States of America, under a truly democratic government, human life and quality of life are important. We care about our people and, in the whole, steps have been taken to ensure adequate protection of public health and safety.

The post-TMI actions worked, but they have been reactive, overly burdensome, and costly. It is time to abandon the distrust that remains from the post-TMI mentality. Let us change the basis of the regulator-licensee interactions to one which is more reflective of both our radiological safety goals and our system of government: with licensees responsible for the safety of their plants --- after all, safety is in their hands, literally and actually --- and the NRC responsible for the health and safety regulations, mindful of rights to due process. Assuring due process is not only lawful, it is efficient, and an impetus for cultural change. As you know, due process is one of my fundamentals of good regulation.

The traditional cornerstone of due process is the right to be heard and contest the government's intervention in a citizen's disposition of his or her property, life, or liberty. Due process must protect the interests of those individuals whose health or safety would be affected

by the agency's regulatory actions, as well as the interests of those seeking or holding licenses. In practice, a key characteristic of due process is "openness", and I am personally gratified that the last year has seen growth in the dialogue with those we affect.

By "due process," I mean not just compliance with the minimal requirements of law, but also an enthusiastic and broad implementation of its spirit: fairness and equity in all regulatory activities, as befits a democratic society. Due process is required to avoid abuses of power, from any direction; it is the linchpin of the checks and balances in democratic governance; it permits the private sector to have profit motives, and concurrently allows regulation to focus on the quality of life of our people.

In practical terms, due process for nuclear regulatory activities requires recognition that NRC licensees manage and run their plants with a variety of accepted societal and legally-protected interests and that the NRC authorizes, i.e., "licenses", this private activity if it finds reasonable assurance of adequate protection of public health and safety and the environment. It is my view that this balance achieves the most benefit for the American people, including avoidance of unnecessary tinkering with licensed activities as the agency goes about its job of establishing safety requirements and determining the status of safety. The way that industry is regulated in a democratic society can be expressed using President Ronald Reagan's words: "Trust but verify".

It is the NRC's obligation to provide due process. This obligation, however, is not self-executing; it does not guarantee its full benefits. You, licensees and other stakeholders, must value and exercise its privileges.

Let me now give you a couple of examples of what I call the post-TMI negative culture and where "due process" can play a role: [SLIDE 3]

- The Use of Biased and Tentative Reporting Language:

This plays into how the NRC and licensee performance are perceived by all stakeholders. Few dare to report that a nuclear power plant does anything well without qualifying it by using the "weakness" word. We use "weakness" to avoid responsibility. We use "weakness" when we know what we mean, and when we don't know what we mean: the problem is that few know the difference, especially as you are farther removed from the point of origin. "Weakness" is a label we decided to use years ago which has sown much confusion in the agency, the industry, and the public. "Weakness" is a pervasive term because it is always true though often meaningless. It is a righteous word but frequently misleading. Some people say it is a nuclear navy thing; I believe it is a "cop-out" that has no place in 1999. No one can demand perfection, but that is what using "weakness" does. The NRC must demand safety, but we should do it precisely, accurately and thoughtfully.

- Senior Management Meeting:

When I first arrived at the NRC, I had heard that the Senior Management Meeting's Watch List was not transparent, and imposed unpredictable burdens on affected licensees -- in short, it lacked due process. It had evolved into something it was not

meant to be. In spite of the hearsay complaints, no one in the affected licensee community wanted to take action, officially, to address this fundamental problem. Industry was acquiescing to being regulated by innuendo and yes, even intimidation. It became clear to me that the Commission needed to become part of the process. After all, the Senior Management Meeting had national visibility, resulted in the reallocation of agency resources, and measurably affected not only the licensees, but the American people as well. The Commission is now fully involved and votes on the make up of the Watch List. In addition, the Commission has also approved the integration of the Senior Management Meeting into the improved inspection and assessment processes.

- Elimination of the “Zero Risk” approach:

Another fundamental cultural change the NRC is trying to make is the elimination of the “zero risk” approach to regulation, an approach which had developed when the knowledge and experience of nuclear power technology was much more limited. Back then, conservatism was layered on top of conservatism in rules and regulations, as well as in analytical methods. No deviations from the set of deterministic points were allowed ... and most of these still exist today. I firmly believe that the “zero risk” factor has little relation to reality and no place in present regulatory requirements. But it still lives! As those of you familiar with the 50.59 rulemaking activities know too well ... but more about that later.

To summarize, there is really one principal cultural change that embodies all others: transfer of more regulatory responsibility to licensees while improving the quality of NRC inspection, assessment, licensing and enforcement. In other words, **TRUST and VERIFY**. This is my second fundamental of good regulation.

Let me now address “how we get there from here”. Cultural change and implementation strategy are two interdependent activities. We can’t do one without the other. Contrary to popular belief, we do have guiding implementation principles for the items on the transition to risk-informed regulation. In fact, we probably have a variety. Here are mine: [SLIDE 4]

#### Implementation Principles for The Transition to Risk-Informed Regulation

- Voluntary for licensees, limited “cherry-picking”.
- Do it sooner rather than later.
- Do it well rather than better.
- Be thorough but not meticulous.
- In case of doubt, do it.
- Use our broad legal discretion for change.
- Make sure, above all, that public health and safety is improved, that unnecessary burden is truly reduced and that operational margins are in the hands of licensees.

I emphasize truly reduced because the first risk-informed rules created, the SBO and ATWS, added burden, and so did the Maintenance Rule in its beginning. And risk-informed rules need to work both ways: to show vulnerabilities even if burden is increased but to reduce burden if it is risk-justified. Besides these straight forward principles, I have little to add. But I will say it anyway... Key issues ready for closure: [SLIDE 5]

—Risk-informed Oversight Processes —  
(Improved Inspection, Assessment and Enforcement)

This is a much improved process, but I offer one word of caution; there can be a potential conflict between the deterministic and probabilistic approaches, so we need to make sure that the deterministic components of the inspection process do not overwhelm the probabilistic.

I believe that these improvements will drive the NRC toward being more risk-informed, because it will be “out there”, being implemented and needing to focus on the working interfaces that most affect safety.

I expect the Oversight process to be quickly followed by a supporting risk-informed Part 50. The practical “carriage” of improved inspection, assessment, and enforcement is in front of the horse, therefore, the “horse” of a risk-informed Part 50 will eventually have to follow.

I commend the staff for their efforts here and hope they are emulated throughout the agency. [SLIDE 6]

— 50.59 Rulemaking and “Associates” —  
(FSAR Update, 50.55a and Appendix K)

- 1998 RIC - Last year, I quoted from the SRM for SECY-97-205:

“...eliminate the de facto “zero increase” criteria and allow “minimal” increase in the probability of occurrence or consequences of an accident or malfunction of equipment, and “minimal” reduction in the margin of safety.”

- 1999 RIC - After one year of “progress”, this year I quote:

“...eliminate the de facto “zero increase” criteria and allow “minimal” increase in the probability of occurrence or consequences of an accident or malfunction of equipment, and “minimal” reduction in the margin of safety.”

This is a regulatory classic, difficult to duplicate. The Commission clearly directed that the new rule allow for those small changes that are lost in the margin of error. Instead, the staff and NEI managed to add complexity on top of difficulty, to this simple notion --- without abandoning their original positions. Apparently, negligible can be defined without problem but minimal cannot. .... Let me give you my definition of minimal. [SLIDE 7]

And, let's start from zero. Everyone knows what zero is, right? But in a relative scale, do we know where zero is? It is  $10^{-\infty}$  from everywhere! And negligible? Above zero, at  $10^{-\infty+1}$  or  $10^{-\infty+2}$ , or  $10^{-\infty+\text{whatever}}$ , it is still close to zero! The Commission selected a criterion that had meaning in the real world: "minimal"! For example, may I suggest that minimal be 3 orders of magnitude larger than negligible. You may wonder why. It is surely as good a criterion as anyone can come up with. Starting from the top of the graph: we need to be away from "significant." How about one order of magnitude? It is above any change that is measurable, calculable, demonstrable, real, credible or tangible. It is not an imaginary number, but real in engineering and functional terms. And minimal? Surely, we can place it at an order of magnitude below that, if you want to be conservative.

—Maintenance Rule—

This is a regulatory classic (did I say that already?) I don't have time to tell this long, convoluted tale. Again, I believe the Commission was clear in its direction, but in a wonderful exercise of congenial interchanges the clarity and simplicity got mislaid somewhere between the staff and NEI.

Now, a year later, I believe we need to keep the "shall", deal with risk-significant configurations in the context of existing licensees' configurations risk management programs, and reduce the scope of the rule to those structures, systems and components that are known to affect risk. **That is, if we really want to finally have and use a rule that is risk-informed and performance-based.**

—Fire Protection—

Has someone figured out how much Appendix R, the non-rule "par excellence", has cost this country? How much more is it going to cost and what level of safety do we think delaying achieves? Remember that fire protection is not nuclear -- it is something everyone can understand and to which they can easily relate. Closure of this issue is indispensable.

—Alternate Source Term—

Hallelujah! And with this, may I please have a drum roll? No? No matter --- I'll now address "Risk-informed" Part 50.

- Risk-Informed Part 50 [SLIDE 8]

I presented at last year's RIC my firm conviction that a risk-informed Part 50 is the necessary and sufficient addition to NRC regulations that will give us "technical due process". I have not changed my opinion; in fact, it has become firmer.

In SECY-98-300, the staff presents reasonable "phased" approaches, but I do not see teeth or commitment in the proposal. It is neither hot nor cold. It lacks a milestone schedule and the sense of purpose that a dedicated team brought to the creation of the inspection and assessment process. A risk-informed Part 50 deserves no less, and certainly deserves more. It is not an 8-year project --- I proposed in my vote that it be done in 3 years because, I believe now it is easier to risk-inform the entire Part 50 than to make any single rule risk-informed, or

any single rule like 50.59 for that matter. And I want to note that the value of the whole will not be less valuable than any of its parts.

I also suggested in my vote setting an appendix to Part 50 to capture risk-informed conversions and additions to risk-informed regulations, as well as to provide for voluntary implementation by licensees. I also favored that we develop a process that allows any finished product to be incorporated into this risk-informed Appendix as soon as it is approved.

As you see, I am a proponent of prudent government. As a Commissioner, I am a proponent of prudent regulations, directly related to public health and safety and the quality of life of the American people and, therefore, I am a proponent of due process, of timely closure of regulatory issues, of placing safety first but reduce burden on rate payers, and of using a risk-informed regulatory regime as a tool to accomplish it.

[SLIDE 9]

To conclude, let me paraphrase John Henry Cardinal Newman: "One tangible accomplishment, one duty fulfilled, is worth all the mere good thoughts, all the unfinished promises...."

I wish you good closure.

Commissioner Diaz' office will provide slides upon request.