
SPEECH REPRINT

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Presented to:

NEI Nuclear Energy Assembly

May 11, 2011

Washington, D.C.

Challenge and Opportunity

Nuclear Safety in a Post-Fukushima World

James O. Ellis, Jr.
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James O. Ellis, Jr.

Thank you, Jim, and thanks to all of you gathered here at this Nuclear Energy Assembly. You all are the leaders, both domestically and internationally, of the world's commercial nuclear power industry. Your service and commitment have been the key to our industry's past success and will continue to be an essential element, now more than ever, as we work together for a safe and successful future.

As we gather here, the events in Japan remain foremost in all our minds. Our continued thoughts, prayers and support are with the Japanese people – not only with our peers and colleagues in the nuclear power industry but also with all those whose lives were so shattered by the devastating impact of the earthquake and tsunami.

I am told that there is an old Japanese proverb that says: *“Fall down seven times, stand up eight.”* We have seen the Japanese people take that to heart over the last months, and so too must we.

It is time to redouble our efforts as an industry.

There is serious work to be done in Japan, and we should all be exploring and organizing how we can best provide continuing support to our colleagues there.

However, there is also serious work for all of us to do in our own nations, in our own companies, and at all of our nuclear plants. We must take what we have learned and what we will learn and apply it in our own circumstances throughout our global industry.

The events of March – in reminding us that there are some things that are beyond our control – also make it clear that there are many things we touch every day that we can and must control safely and effectively.

Our industry is no stranger to crisis. Indeed, we were catalyzed and shaped by crisis just over thirty-two years ago.

The events at the Three Mile Island plant led the U.S. nuclear industry to create the Institute of Nuclear Power Operations, to set and police standards of excellence, to provide for analysis and sharing of operating experience, and to establish accredited operator training programs.

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You agreed to establish industrywide benchmarks of excellence and conduct independent evaluations to ensure that those benchmarks would be met.

It is a self-regulatory model unlike any other in the world.

As an industry, we did not wait for the official studies, root cause analyses, or commission findings and subsequent mandates – our predecessors saw what needed to be done and did it.

It is now our turn.

The English cleric, Brooke Westcott, once wrote: *“Great occasions do not make heroes or cowards; they simply unveil them to the eyes of men. Silently and imperceptibly, as we wake or as we sleep, we grow strong or weak; and at last some crisis shows what we have become.”*

Over recent weeks roiled by the events in Japan, we have seen our daily focus change dramatically. While our professional actions have focused on seeking information, providing assistance, reassuring stakeholders, and beginning to shape a company or industry response, our personal reactions have, successively or simultaneously, probably included concern, disappointment, defensiveness and even anger.

But the most thoughtful of you have certainly paused, stepping back from the press of today’s crisis, and considered not just what we are as an industry but what we might and must become after all of this is done.

The first area in which I believe there are lessons to be learned is the area of emergency response. It is true that our industry has had an emergency response obligation and capability for thirty-two years, requiring both an emergency plan and an emergency response center. It is also true that, as an industry, we began restructuring our national response plan in light of the experience of the oil and gas industry in last year’s Gulf oil spill.

The U.S. commercial nuclear industry has responded capably to the Japanese crisis. Communications were established, consultation was begun, and assistance was provided – first remotely from the United States and then, in concert with the Nuclear Regulatory Commission, on-site in Japan.

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Despite all of those successes, few in this room would dispute that it was, at best, a pick-up game.

The events of the past weeks have clearly shown the benefits of significantly improving site-specific plans while moving beyond them to establishing and formalizing a national and even international response capability worthy of the name.

Just over six years ago, when I first came to this industry, I spoke at my first INPO CEO Conference. I told a story that few of you probably remember about a French mathematician named Blaise Pascal. I will not reprise the story, only the conclusion: The probability of an outcome must never be confused with the consequences of an outcome. The two are not the same.

Nassim Nicholas Taleb, author of *The Black Swan*, said in a recent article in *Fortune* that “... models can tell you something about normal events, but they cannot deal with unexpected, high-impact events ... we are incapable scientifically of measuring the risk of rare events. We tend to underestimate both the probabilities and the damage.”

But the consequences of the events in Japan are a textbook lesson in the need to approach emergency response with all the discipline, rigor, resources, and commitment to excellence that has brought success to our focus on operational performance.

It is time to review our balance of prevention and response, understanding well that – while prevention is our goal – a rapid and effective domestic and international response capability must always be a part of what we are as an industry.

Let me be clear: I am not talking about merely rewriting plans, creating industry working groups and constructing Memoranda of Agreement.

I am suggesting that we need to consider having at-the-ready a robust, highly capable response team with pre-staged equipment interoperable both domestically and internationally.

This nuclear emergency response organization – which I, tongue in cheek, call NERO, after the Roman emperor who famously fiddled while Rome burned – could be a powerful and, I believe, collaborative effort in which the U.S. nuclear industry could visibly take a leading role

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both domestically and internationally, across a broad spectrum of disaster recovery, transcending just nuclear response.

My second takeaway from our shared experience over these past two months has been the value of relationships, both those of long-standing which were deepened and strengthened, and those that were created afresh with organizations and individuals who shared our concern and commitment, but with whom we had never before spoken.

For INPO and me, the groups included many of you – nuclear plant operators and major supply and engineering firms.

We had detailed calls with Chairman Jaczko and his leadership team, with Admiral Kirk Donald at Naval Reactors, conference calls with Secretary Chu at DOE, and interactions with FEMA, DTRA, WANO, the IAEA and EdF. I even had conversations with the Department of Defense, the Chairman of the Joint Chiefs of Staff, and Ambassador Ichiro Fujisaki, the Japanese ambassador to the United States.

Each of these stakeholders was involved in different ways for different reasons, bringing specialized and necessary expertise, skills and resources that, in concert, have provided essential aid to the Japanese and information and insight to us all.

My point here is not to name-drop but to highlight the depth and breadth of the interaction and support, and that those of us who came together in this crisis were united by a commitment, but not by process, training, or previous interaction.

We created new relationships on the fly, in some cases introducing our organizations and ourselves during conference calls.

I often speak of stovepipes in organizations, or, as former National Intelligence Director Admiral Mike McConnell used to call them: “*cylinders of excellence.*” Going forward, we should look at these new relationships with purpose and a strategic objective in mind.

The long-term goal should be a process and a structure that crosses those industry, government, and private sector boundaries to enable consultation and collaboration in time of crisis.

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Our collective efforts in responding to Fukushima Daiichi have demonstrated what we each can bring to the table. As a nation and as a world, we need to become better at it.

The next point to emerge from my musings on this issue is that it is an international event, and it demands an international response.

While the former statement may be self-evident, the latter is not, and, together, they are inextricably linked.

Let me explain. In the eyes of many, including many of us, the events at the Fukushima Daiichi site laid bare some significant gaps in our performance and effectiveness as a global industry.

This event, I hope, has swept away reservations of any in this room who thought that events half a world away could not have significant influence on our domestic industry.

Similarly, any response we craft must have an international dimension. To do less would be, at best, shortsighted and, at worst, would be sadly ineffective.

Believe me when I say that I do not believe it is our job to change the world. I do believe, however, that it is appropriate to support the world's efforts to change itself.

To achieve and sustain excellence in nuclear safety throughout the world, we must establish – by personal commitment, not fiat or decree – global nuclear standards with international accountability. Those that currently operate commercial nuclear power plants as well as those that aspire to do so must recognize the importance of and give the appropriate priority to effectively measuring, minimizing and managing risk. And then we must hold each other accountable for outcomes, not aspirations.

The leading international nuclear entities are already gathering to define their future roles along these lines. The World Association of Nuclear Operators, on whose board I sit to exercise proxies on behalf of the U.S. industry, has convened a high-level Commission to define its future direction. WANO Chairman Laurent Stricker has charted that course for WANO and for all of you.

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This effort is to be applauded and encouraged as it works to bring focus and accountability to the pursuit of operational excellence. For this effort to succeed, WANO must have the support and resources of the global nuclear power industry through each of its regional centers. New supporting alignments of each regional center – similar to that which INPO provides to the Atlanta Center – will be essential if this initiative is to move forward quickly.

An important part of the WANO self-assessment will be the rigor and periodicity of its oversight, as well as the accountability model of its members. Changes must be embraced; they cannot be imposed. WANO leadership has seen this as an opportunity for WANO to rise to a higher level of effectiveness and accountability. In essence, this is a test of its members' collective resolve.

Success in this effort will send a clear and powerful signal. And so, too, will failure.

As some of you may know, the International Atomic Energy Agency – or IAEA – will meet next month to explore a more directive role in setting international standards. While this effort is properly the responsibility of our diplomatic and regulatory representatives, it must be informed by technical and operational experts if it is to find the “sweet spot” between national sovereignty and international accountability. The mechanism for such a consultation is, as yet, unclear but – as an industry and as a nation – our continuing involvement is essential.

The next point that I would like to make is that this, for our industry, is a time of real challenge and it demands real change.

The events in Japan continue to unfold, and all of us are painfully aware that – despite disappearing from the front page – this crisis is not yet over.

We cannot possibly know all the answers because we have not yet asked all the questions. That will come in time. But our actions in response cannot wait.

In the short term, as all of you know, we have done much individually and collectively. Separately, the industry and the NRC have begun to explore specific areas which we know full well merit scrutiny. These include spent fuel pool heat load management, continuity of AC

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power, coping times, emergency preparedness in all its dimensions, and design basis assumptions. These are short-term actions, in a sense, and the list will undoubtedly grow.

I do not intend to comment on the specifics of these technical issues. As an industry, we are reviewing them in consultation with many of you. My concerns are more focused on the scope of our efforts and the potential challenges going forward.

Given the magnitude of the challenge, an effective industry response must also be broad and all-encompassing. This is not the time for timidity or creeping incrementalism.

Opportunities and incentives for change rarely come without personal pain and recrimination. Our current circumstances are a clear exception. We have an opportunity to learn from the tragic lessons of others and shape or reshape our own domestic industry. We must not underestimate the magnitude of that challenge.

We have drawn together in powerful ways over these past weeks, both as a domestic industry and as a global industry. Some came for information, others to provide assistance, and still others for reassurance or direction.

As the Japanese event drifts further behind us, the pressures to worry less about the common good and more about our own self-interest will inevitably grow.

It is not a bad thing to see events from your unique vantage point and bring them to the collective table. The difficulties emerge when those tensions grow and “enlightened self-interest” trumps the larger greater good.

This can grow still further when the needs of international participants are measured and prioritized solely by the magnitude of our local wants.

Our response to the disaster at Fukushima must be viewed through the lens of history and from the perspective of distant decades, as difficult as that may be to define.

The response of the U.S. nuclear industry has been extraordinary. There has been a sense of teamwork, of shared urgency, and of a commitment to doing what is right precisely because it **IS** right.

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As time moves on, however, it will require superior leadership and a continuing commitment by all of us to recognize that the course that best suits our personal or organizational desires may not be the direction that best serves the broader industry and the world we all serve.

Differences in size, regulatory structure, technology, or geography must not be allowed to transcend the common good.

This is a time when we cannot seek the median or mean. Now, more than ever, excellence must be our model.

Have no doubt, we are at a pivotal point in our industry and are navigating through troubled waters.

Some years ago, a U.S. Navy Admiral succeeded to the position of Chief of Naval Operations as a result of the tragic suicide of his predecessor.

Immediately on assuming the office, Jay Johnson declared that the Navy would chart a new and appropriate course based not on our past but on our future. In his words, we would *steer by the stars and not by our wake*, looking to a bright, if distant future based on a new concept of both what we are and what we can be.

That is our shared challenge today, for those of us equal to the task.

My final objective this morning is to remind us all of the tremendous opportunity that lies before us – an opportunity that comes rarely, an opportunity to not just predict the future but to define it. While our industry does have much of which to be proud – its commitment to safety, its operational success, and its ongoing work to collectively resolve problems and meet its goals – as recent events still remind us, none of us can afford to bask in the glow of past achievement or recent crisis response.

While events in Japan have cast some specific aspects of our industry into sharp relief, the truth is that for some time we have been aware of the need to continually re-examine our performance and reaffirm our commitments.

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As many of you recall, a year ago we identified some emerging challenges, some warning signs of peaking performance in the U.S. nuclear power industry.

Recent trends in operationally significant events, reactor scrams, and emergency diesel generator availability – along with challenges to operating crew performance – reminded us that achieving and sustaining excellence is an ongoing journey.

Individually, the signs could have been overlooked or explained away as unique or isolated anomalies, as some have termed the events at Fukushima Daiichi.

But the reality is that, together, our ongoing industry self-examination and introspection, combined with the initially cataclysmic and then slow motion unfolding of events on the far side of the globe, remind us of the still-compelling need to focus our efforts on achieving and sustaining excellence.

We have been gifted with an incredible opportunity – I use the term “gifted” intentionally – and it will require an equally incredible response if we are to seize it.

I have had a life-long fascination with the life of Abraham Lincoln, even more so in the years since I had the incredible good fortune to Captain the great ship that bears his name. In his 1862 Annual Message to Congress, as many of you recall, he said: *“The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty and we must rise with the occasion. As our case is new, so we must think anew and act anew.”*

Think anew and act anew – that is our challenge today and in all the tomorrows yet to come. We cannot default automatically to existing processes and perfunctory discussions. We cannot resort to “business as usual” ... because there is no longer a “usual.”

As an industry however, we are not starting over. We are generations ahead of where we were after the Three Mile Island accident and at the time of Chernobyl.

We are a much different industry now – with a foundation of success and knowledge and capability that has been built and strengthened over three decades.

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And although Fukushima Daiichi has been a visible, visceral setback in many ways – and it is easy to be discouraged – it is also an opportunity for the worldwide nuclear power industry to make significant advances in achieving and sustaining the highest levels of nuclear safety.

Former Secretary of Defense Donald Rumsfeld has said: *“Being prepared for the unknown and agile enough to respond to the unforeseen is the essence of strategy.”*

In his book *Known and Unknown*, he continues: *“At its most fundamental level, grand strategy is setting large, longer-term goals that are realistic and can be balanced with the means to achieve them. It requires continual review of the goals in light of the means and of new circumstances as they come to light.”*

The opportunity I speak of today, for us and for our industry, is the chance we are offered to begin to think and act in ways that are both “strategic” and “grand.”

Even as we refine and enhance our focus on strategies of prevention, we must balance that with an increased emphasis on collective and effective response.

Relationships forged or strengthened over recent weeks must be formalized, codified, and exercised.

The global nuclear community has been found to be more real, capable, and interlinked than many believed possible – our challenge is to now advance our shared interests as an international alliance, if we can, but certainly as a coalition of the willing if we must.

We must resist the temptation to minimize or differentiate the events in Japan and our own industry – the lessons are both real and immediate for all of us.

And finally, we must seize this opportunity to both improve the industry we have and shape the industry we want.

What we can accomplish is limited only by our imagination and our resolve. The famous quote attributed to Robert Kennedy is apt for all of us: *“There are those who look at things the way they are and ask why ... I dream things that never were and ask, why not?”*

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I am now three months into my last year in this industry. Over my years of service to it and, hopefully, to all of you, many in this room have taught me much about the technology of its plants, the dedication of its people, and the integrity of its leadership. You have shared with me your dreams and your disappointments, your successes and your failures, and the passion you all share for what we do – its potential, and its promise.

Though astonishingly different, you are all leaders in ways large and small. Some of you lead at the front of the next generation of generation in our industry, carving it out of rock or clay, and literally pouring a foundation for the future. Some of you are reshaping the corporate landscape with a vision of unprecedented scale and scope. But far more of you lead in powerful ways, through force of energy and example that is not measured by the number of plants you own or the amount of megawatts you generate.

You are all my respected colleagues and some of you are among my closest friends – understand that I do not stand before you to hector or threaten, to wheedle or cajole.

Brutus in Shakespeare's *Julius Caesar* said:

"There is a tide in the affairs of men.

Which, taken at the flood, leads on to fortune;

Omitted, all the voyage of their life

Is bound in shallows and in miseries.

On such a full sea are we now afloat,

And we must take the current when it serves,

Or lose our ventures."

In echoing that theme and in closing this morning, I have but one request – no, make that one plea.

Do not let this moment pass. Do not let it slip away. This is our moment. This is our challenge. This is our opportunity. It will not come to us again.

Once again, let's do the right thing and do it now.

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