



# NRC NEWS

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**Edward McGaffigan, Jr., Commissioner**

**U.S. Nuclear Regulatory Commission**

**Remarks at NRC's**

**Regulatory Information Conference<sup>1</sup>**

**March 13, 2007**

Thank you very much for that warm welcome. I am going to start by encouraging questions. The Chairman got quite a few this morning. I am not a very good filibusterer, so I am not sure I will last as long as the Chairman in terms of my opening remarks. The reason we have these conferences is so we can have dialogue and I will probably say a few controversial things in my remarks, so by all means ask me questions, challenge me. I know we do not have microphones on the floor. I always used to say I would give people at microphones on the floor precedence over written questions.

This is, my 11th Regulatory Information Conference speech. On nine of those occasions I have done what I am doing today, working off of notes that I constructed in about the last hour. On two occasions I wrote prepared speeches: one the Paul Leventhal speech and one last year when I wanted to make sure I got the tone right as I praised Nils Diaz as he was about to leave. So you guys are getting the 9/11th's McGaffigan rather than the 2/11th's McGaffigan today.

As many of you know, the reason I am sitting for the speech is my health status since last year has declined. I have had the honor of having the first gamma knife operation a Commissioner has ever had and I hope the last. I do not look much like my picture on brochures out front. My daughter calls it the Lex Luthor look. My prospects are not high, although I am in my third round of chemotherapy and what my doctors are trying to do is extend my life with some quality of life.

Having gotten that out of the way, I want to start by praising Jeff Merrifield. He and I have served together for over eight years on this Commission. It could look like more to a different counter, but I am counting as I always do. I am not counting the gap that Jeff had between terms and the gap that I had between my second and third terms, so we have somewhere between 8 and 8 ¼ years of overlapping service as of today.

I knew Jeff before he came to the Commission. He tells me we met on the fifth floor of the Hart Senate Office Building in a men's room when he was working for Senator Humphrey. I don't remember that meeting, but I do remember subsequent meetings, particularly when he was working for Senator Smith of New Hampshire.

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<sup>1</sup> Remarks adapted from Conference transcript

Jeff has served, as I said last year for Nils Diaz, honorably and with distinction over almost two full terms. I helped Jeff, I think a little bit, in getting to be a Commissioner by removing the comparative advantage of one of his rivals for the Commission appointment. We got Jeff a Q clearance so he could better support Senator Smith on the Environment and Public Works and Armed Services Committees. Dennis Rathbun and I thought the clearance request was entirely appropriate because of Jeff's work for Senator Smith. There was some mild need for persuasion of then Chairman Shirley Jackson who didn't understand why these Congressional staff folks are very important. I think that Q clearance helped Jeff, and it helped Senator Smith in any case the last year Jeff worked for Senator Smith.

He has agreed with me more than I probably deserve or I've agreed with him more than he deserves. We've had a few differences over the years, but we can challenge each other and when we disagreed, we disagreed respectfully. So I commend Jeff Merrifield for what will be over 8 ½ years of service on the Commission as the sixth longest serving Commissioner in NRC's history and for all the contributions he has made during that time.

I also want to praise some of the senior staff NRC is losing too. Yesterday I missed Jesse Funches' retirement function. He is our Chief Financial Officer. Jack Strosnider, the Director of the Office of Nuclear Materials Safety and Safeguards, has announced he is leaving and we announced that Mike Weber was going to replace him. Jackie Silber will be leaving shortly, our Chief Information Officer. And these are all very fine people. These are all people with decades of federal service, sometimes partly with other agencies; in Jesse's case he served a lot of his career at the Pentagon. Unfortunately, they are all part of a bow wave of people who are going to be leaving from the senior staff and we're going to have a heck of the time replacing them; not that we don't have good people in the wings, but you don't lose all that experience without losing a lot of institutional memory about our failures and our successes, how to avoid the former and build on the latter.

We are also losing many relatively less known staffers who are retiring after decades of service and who do the real work of the agency in inspections, licensing, rulemaking, etc. I want to praise them for their undying commitment to safety and security. It is these people who influence their neighbors' perception of NRC. I was on Federal News Radio last fall and Mike Causey, who hosts Federal News Radio, mentioned that one of his neighbors had recently retired from NRC and was very proud of his service. I think every one of these employees who are leaving need to be as proud as Mike Causey's neighbor at what they've accomplished over their time here. There's a method in my madness here. I'm doing all this praising early, but the theme that will emerge right now is that there are challenges ahead.

There are going to be tremendous challenges, whether at the Commission level with Jeff and me rotating off after Nils did so last year; whether at the senior staff level or whether at the working staff level. It's going to be a tremendous challenge to train the enormous number of new staff as we go forward.

I told a Platt's Forum to which I spoke in January that my goal that day was to lower expectations about NRC performance going forward. That's a little bit different message from the Chairman's, but I have a well earned reputation and title given to me by former Chairman Diaz as the Commission's pessimist. I always thought of myself as being a realist, following the facts where they lead me, but the Commission's pessimist is probably how I'll be remembered thanks to Nils. I'm probably going to fulfill that reputation in the rest of this presentation. I will tell you that Brian McCabe of Progress Energy is going to have a presentation at one of the breakout sessions and I told Brian just before I spoke today I would probably mention him and that I thought he was far too optimistic in his meant-to-be pessimistic presentation. So, that's probably an advertisement to go watch Brian.

What is going to happen in the next several years is not a function of the quality of the people at NRC. We have great people. We have always had great people. We are committed to training the new generation of folks to NRC's high standards. As I guess Jim Dyer said at the second session this morning, a lot of those fees that you all are complaining about are rising because our productivity is down, and will be down and has to be down if we're going to carve out the time that these new folks need

to become effective regulators. We're going to do that. We're not going to have folks who are not fully qualified in their positions. That is one important reason why NRC is a great place to work.

Last year I spoke about the constraints on the nuclear renaissance in terms of all the things that have to go right outside of NRC for there to be licenses issued for new nuclear plants. I'm not going to reprise that today, although it is available on the NRC web page for anybody who wants to read it. And it is still accurate. I am afraid that the fundamental problem that I see, having been here 10+ years, is we have created an expectation that we can handle this bow wave of COL applications with little difficulty because we have achieved so much over the past decade. I am hoping that a lot of the bow wave of applications will evaporate, but it is almost unfair to expect the past to be prologue.

I was here for license renewal. We had declining budgets at the start. But we had an experienced work force. And we had the ability to learn on the Calvert Cliffs and Oconee applications because the industry was pretty skeptical that we would pull license renewal off and there was no rush of initial applications. Our Atomic Safety and Licensing Boards did a spectacular job on those first two applications and the U.S. Court of Appeals for the District of Columbia Circuit fully backed NRC's decisions. We did a technical lessons learned report (GALL). We got the applications to be pretty uniform and when the bow wave of license renewal applications finally arrived, we made it work in a very disciplined process.

Chairman Klein served on a panel with me at the Center for Strategic and International Studies (CSIS) in 1998 and 1999 and there was great skepticism among panel members that we were going to be able to handle that bow wave. But that bow wave came after we had gained experience and standardized the process. For COL applications the bow wave is going to come right from the start with the final Part 52 rule not yet published and two important security rulemakings still underway.

I think in my heart of hearts that Congress created too many incentives for folks to submit COL applications all at once and that the discipline that we normally have in this industry has broken down as folks chase the incentives in EPACT 2005. There's a lot of talk about NRC needing to be a good regulator. Good regulators - and I absolutely believe this - good regulators should not be put under this much stress by licensees or applicants.

If you look at these upcoming proceedings if we have them all, we don't have the judges on our Atomic Safety and Licensing Board Panel to do those proceedings at this time. We have relatively few judges, but they are capable of handling our current workload. However, they aren't geared up for a tidal wave of COL applications. And if DOE delivers the Yucca Mountain application next June, we think we will need to have four panels of judges to deal with all the contentions likely from the State of Nevada and the associated local governments and perhaps members of the public. So, we have the potential that a judge who isn't at NRC today, but will arrive and will be drinking from the canonical fire hose will be your chief judge in one of these COL proceedings. Not that such new judges may not do a great job, but it's going to be a challenge.

GAO has predicted that we may lose more staff than we are planning for because we don't necessarily have the data as to how long this new group of folks we've hired the past four years is going to stay with the Commission. We're making some assumptions. We have to do variations on those assumptions in my view and prepare for less optimistic retention results.

On the other hand, if the number of COL applications becomes self limiting, then we won't be stressed as much. That is my hope.

The other things outside of NRC that are going to limit the nuclear renaissance obviously are what Chairman Klein talked about this morning: skilled workers, welders and other folks who don't get college degrees. They aren't nuclear engineers. But they are in very short supply.

I noticed in the paper yesterday that LES is having trouble hiring skilled workers in New Mexico to construct their enrichment facility. When they planned that project, they thought that because the oil and gas industry was having troubles due to low prices, they would have no trouble picking up local skilled workers. Now, unfortunately for them, the oil and gas industry is peaking, and I hope the price of oil doesn't go up for the sake of the nation, but at \$60 a barrel there are a lot of folks who can drill a lot of oil and gas and that's what they've always done. So in recruiting them, LES is going to find challenges.

Obviously, in Finland there were also challenges getting the right work force skills. Indeed, our staff put out an information notice recently (IN 2007-04, February 5, 2007) about the fact the Finns were finding essentially the same problems that we had found in our 1984 report (NUREG-1505) on the first generation of plants and these are problems that our industry will have to avoid. There will be no nuclear renaissance if the first builds are not successful. So, I would urge people to focus on the construction work force and the industrial infrastructure. There just is not enough capacity to build 20 or 30 plants in the time periods people are talking about. They will inevitably extend.

I think that the industry needs to focus on sustainability, not a swift start to the nuclear renaissance. I said already that the EPACT 2005 incentives create far too much jockeying to be one of the first six plants, to get all of the incentives, and we would have been better off going slower. I hope that the companies that are considering these investments have Red Teams that try to foresee what can go wrong because things will go wrong. Having contingency plans for adjusting to those bumps when they arise is going to be absolutely necessary.

I assume that that's Harvard Business School 101, and you guys have God knows lots of people from Harvard Business School equivalents and lawyers and financial specialists - but it is a fundamental principle of management that you have to figure out what can go wrong rather than build plans based on undue optimism.

In the end, the nuclear renaissance is going to be limited at least initially by capacity short falls, as I said before, industrial capacity, work force capacity, regulatory capacity, etc., and will only succeed in the long run if the first builds go well. So, the industry has to get those right. We have to license the first plants right and the industry has to get those plants built right.

As I leave 31 years of federal service shortly, I want to tell you a story about the book that I read when I switched from physics to public policy that probably had the most influence on my career in government. I checked Google this morning and it's still available. But I warn you, it's pretty dry and I probably didn't get through it all myself as a graduate student. What I loved was the story that was told. The book is called the *Cybernetic Theory of Decision* by John Steinbruner. I believe he is now at the University of Maryland, but was at Harvard's Kennedy School and teaching me 32 years ago. The book, as I said, alternates good storytelling chapters with dense theoretical chapters. The bad chapters are the ones where he goes into the theory of decision making. The good chapters are the ones that tell the story of the multilateral force.

The multilateral force was a solution in search of a problem. NATO Brussels, parts of the Office of the Secretary of Defense, the State Department Policy Planning Office and others decided around 1956 or 1957 that the West Germans wanted to go nuclear and we needed to find a way to sort of let them get their finger on nuclear weapons without letting them get their finger on nuclear weapons.

So, having posited that problem, the solution they came up with was Polaris missile armed surface ships always British or American captained, but with multilateral crews from other NATO countries including German crew members and officers.

The way the system works at DOD - it takes a long time to really start spending billions of dollars and this program went along at a relatively low spending level until the Kennedy administration arrived, at which point it started to consume real money, hundreds of millions in then-year dollars. And to McGeorge Bundy's credit, he asked Richard Neustadt in the spring of 1964 to go over to Europe and

figure out whether there was any support for this program, whether there was indeed even a problem. Neustadt came back and basically said, "No, there's no support. Nobody thinks there's a problem and this is not the solution to the problem."

That led to a summit meeting after the respective 1964 elections in the United Kingdom and the United States in December 1964 where Harold Wilson and Lyndon Johnson decided to terminate the multilateral force (or as it was also known by that time the multilateral farce).

As John Steinbruner tells that story, he tries to figure out how people make decisions and he breaks people down into three groups. There are political thinkers like Lyndon Johnson who tend to agree with the last person they speak to. There are theoretical thinkers like the folks at OSD and State Department Policy Planning and NATO Brussels who don't let any facts get in the way of their theory and their solution. They just won't absorb any facts that don't meet the model. Then there are rational thinkers; in this case like McGeorge Bundy and Richard Neustadt who wanted to know to the extent we can know in these very complex circumstances, what the facts are and try to make decisions based on the facts. I determined I would strive to be a rational thinker. What I learned from that book was to beware theoretical thinkers. They are the chief danger to sound public policy.

We will always have political thinkers. If you've ever seen a Senator's or Congressman's schedule and the very limited amount of time they have to spend thinking about issues, as opposed to raising funds and meeting with constituents and all that sort of thing, it's amazing and we're blessed as a nation, that we have the amount of continuity that we have in Congress because it takes a while to learn when your learning time is limited. Many of these long serving members grow into rational thinkers in their specialties. But that's what I learned: to beware theoretical thinkers.

We have a few theoretical thinkers in this industry. I would put GNEP in the category of theoretical thinking. In the nuclear area you have to have continuity over long periods of time and you can't spring things on people, particularly multi-decade programs, and expect them to greet your idea with open arms.

We probably at some point have to consider a closed fuel cycle. Is it urgent? No. Do we have the technology in hand? No. Are we going to have it in hand by next June? No. DOE would have been better off having a dialogue with people, Democrats as well as Republicans, as to how various approaches to the fuel cycle in the coming years could be developed. That didn't happen.

Risk informed regulation is another area where I think we've had a little bit too much theoretical thinking, although in that case, and I think in GNEP's as well, the damage is self-limiting. I wrote my vote on the 10 CFR 50.69 rule at least three years ago, and predicted it would not be used. I was outvoted 2-1.

Today nobody is in the queue to use 10 CFR 50.69. 10 CFR 50.69 for those of you who aren't familiar with our rules is the rule on special treatment requirements for structures, systems, and components. As I say, GNEP is likely to be similarly constrained based on the remarks of Senator Bingaman yesterday.

Another group of people who deal with us who are theoretical thinkers, and probably don't let facts get in the way very often, are the anti-nuclear interest groups. They have a solution. They're committed to that solution. They believe that nuclear power is incompatible with a free society as some of them have said. They, in my view, don't very often deal in facts that they can prove scientifically, but they are immensely good at slogans and they are immensely good at having themselves called nuclear watchdogs.

I believe that I am the nuclear watchdog. The 3,300 or 3,400 people at the NRC are the nuclear watchdogs. I have spent 31 years in federal service. I have never received a check from anybody but the U.S. Treasury since I left the Kennedy School. Before that, I had no relationship with this industry.

That's true of most of our employees. Some come to us late in their careers from industry and help us out and we appreciate that. They become NRC regulators very quickly with a deep commitment to safety and security. Yet we're oftentimes attacked by the anti-nuclear interest groups. They have to attack us to raise funds. We have to be an incompetent regulator not committed to public health and safety to fit their cartoon of us. In building their cartoon they leave out facts such as the families of our resident inspectors living near the plants, and that many of us here at headquarters and the Regions have our own family members living near the plants. Why would we endanger our loved ones?

I think we need to do a better job going forward in responding to these folks promptly and accurately. They have their side shows, such as the "tooth fairy" project, and "mobile Chernobyl" displays. They get media coverage. They're very good at that. But, when this false bumper sticker stuff comes up, we have to refute it. The industry must do the same. The technical societies must do the same. All of us can do it better.

I'm sure academia could help, but getting academics to be timely is probably harder than getting regulators to be timely. Institutions like the National Academy of Sciences could help out. They do help out. I think "mobile Chernobyl" has been dispelled by the NAS report of last year, but they could do more. One thing I think we need to do as a nation is better educate our public about the basics of nuclear radiation. I have had enormous doses of radiation over the last seven years and I'm still ticking. I don't recommend it. Only if you get cancer do you need the sort of doses that I've had.

But the notion that we self irradiate ourselves at 40 millirems per year because of the potassium 40 in our bodies, that's not known to the public. The fact that people receive on average from nature 300 millirems a year, with 200 millirems coming from radon - I have tested my home for radon, and it was well below EPA's action level - but how many people know that. The fact is you can take any shovel of dirt from this area, move it to the Rocky Mountains, and make the Rocky Mountain's cleaner. The fact is that we live in a radioactive universe. We're here because of radioactivity. The elements got created thanks to nuclear fusion interactions that only occur in stars.

The education folks at the National Academy of Sciences could possibly help by recommending that middle schools and high schools adopt modules for science curricula on radiation that could educate the next generation. That doesn't solve all the generations in between.

It doesn't solve for the most part the problem of reporters who with very few exceptions have not studied any science. The press has this sense that their job is to report conflict and that truth must be somewhere in between what NRC says, and we have the scary word "nuclear" in our title, and what self-proclaimed watchdog groups with nourishing titles say.

In science, the truth is usually not something that's in between. In law and politics, there frequently are 51/49 choices. So I would love to see the National Academy propound standards for high school and middle school curricula on radiation. I'd love to see States have at least one question per year so that teachers would teach to it, on a radiation-related topic on the standards of learning tests that high school students have to pass today.

I'm going to conclude - my staff is sitting in the front row here- by thanking them. In the case of the first three people, thanking them for over a decade of service - Jeff Sharkey, Jim Beall, and Linda Lewis who was with me before I even arrived. I hired Joe Gray as my first Executive Assistant, my first Chief of Staff, before being sworn in. He had the good sense to recommend that I also steal Jim McDermott's assistant, Linda Lewis, that same afternoon. I readily agreed because I had never heard of a HR director having anyone but an excellent assistant.

And then Jim Beall and Jeff Sharkey soon followed. Linda is the senior member of my staff because she was here working for me before I was sworn in. David Cummings, Dave Brown and Angie Lewis (Angie is really the senior of the three I'm mentioning last), have served me well in recent years. And lots of other people have served me well during the 10 ½ years that I've served here.

I admire these people. I think I got the cream of the crop, but there are so many good people on the NRC staff. We will regenerate another group of great people, but it's going to take us time. We're going to need some forbearance and we are probably going to be a lower productivity institution than we were during the period of stable budgets, stable work forces, stable Commissions and stable senior staff from which we are now emerging.

So with that, I hope there are questions.

Thank you for listening.