



NRC NEWS

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**The Honorable Edward McGaffigan, Jr.
Commissioner
U.S. Nuclear Regulatory Commission**

at the

**Regulatory Information Conference
Washington, D.C.**

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I'm going to start this morning by doing something that Bill Kane did at the security breakout session earlier. There was a tragedy in Spain this morning that reminds us all that terrorism is very, very real, and our hearts go out to our Spanish colleagues. They stood with us in the Iraq war and prior to the Iraq war, at some political risk for their leadership, and unfortunately that makes them a target as well as us. Our hearts go out to them. I do not have the details but I do know from listening to WTOP news radio that it was not a good day for Spain or for the civilized world.

It's a tough act to follow the Three Mile Island (TMI) panel that was just on here. Twenty-five years ago today I was serving in our embassy in Moscow. I was in our Foreign Service as I was for the first seven years of my career in government, and I was dealing with the Soviet nuclear power sector. One of my responsibilities in the Science Office in the embassy was to escort Soviet scientific and technical delegations to the United States, to escort American delegations within the Soviet Union, and to also provide information from United States agencies to their Soviet counterparts. Two of the Ministries I dealt with were the Ministry of Power and Electrification, headed by Minister Neporozhny, and the State Committee for the Utilization of Atomic Energy headed by Dr. Petrosyants. In those days serving in Moscow there was no CNN -- we were at the end of a very long information chain, and we were really starved for information about what was going on at Three Mile Island. But there was great interest obviously in the Soviet Union about what was going on at TMI, particularly at the Ministry of Power and Electrification and particularly an individual there whom I remember well named Fedor Ovchinnikov, who was the Deputy Minister. The Soviets did not have any regulators so the closest thing they had to a regulator was Mr. Ovchinnikov, who was also trying to run power plants. My impression was that he was an advocate for defense in depth, for western safety principles, but

there were others in the Soviet bureaucracy who were more complacent and had more hubris than Ovchinnikov had.

In the fall of 1979 just before the Afghan invasion and the exile of Andrei Sakharov to Gorkiy, Governor Thornburgh and Governor Babbitt, who had served on the Kemeny Commission, and other Governors, came to Moscow, and there was great interest in meeting with them, particularly Governor Babbitt because he had just been on Kemeny. We had managed to get the Kemeny report and give it to the Soviets. They had translated it in part, and many of them knew English and were reading it in English, and we had some very good discussions during Governor Babbitt's and Governor Thornburgh's visit, particularly with the Ministry of Power and Electrification. My sense was that people like Ovchinnikov were trying to use the Three Mile Island event to argue for more safety in the Soviet Union. My sense was the people at the State Committee for Utilization of Atomic Energy regarded things like containment structures as the needless luxuries of pampered capitalists. I think that hubris and that complacency did not serve the Soviet government well seven years later during the Chernobyl tragedy.

I did not have much to do with this industry until about seven and a half years ago, other than that period of time when I was working on these issues when I was in Moscow. Mostly my life has been as a defense analyst. But this is my eighth time at the RIC, and Chairman Diaz' eighth time -- eight out of sixteen means that I've been here for half of them -- not as many as Ken Rogers here today in the audience. Probably between his time as a Commissioner and as a former Commissioner, he has been here for all sixteen.

I come to you today to try to reinforce a message, at least in part, that came across in the Chairman's speech yesterday and Jim Dyer's data yesterday. It also came up in the Three Mile Island panel discussion just before me today. And that's the evil of complacency. I think we have to look squarely at ourselves right now and decide whether there is complacency setting in in parts of an industry that has had a pretty good run. It could be that the answer is "no." It could be that much of the data that Jim showed you yesterday is connected with the events of August 14th, a one-time instability that the North American Electric Reliability Council (NERC) representative at one of the plenary sessions yesterday called "NERC's TMI". And it could be that this year all those performance indicators will go back down to where we've seen them in recent years. And I hope and pray that that's the case, but it's going to be the industry, and to a lesser extent we regulators, that are going to make that happen.

Dave Christian, in a panel discussion earlier this morning on security, raised a rhetorical question that I have to tell you occurred to me, so I'm not sure it's entirely rhetorical. It was whether the security focus of the last couple of years had taken away some of the safety focus in the industry. In seeing Jim's data a couple nights ago that thought did occur to me. What has changed in the last couple of years in a big way that would potentially drive the performance indicator data? The August 14th event -- don't get me wrong, that clearly drives scrams and safety system actuations and whatever - - but even normalizing for that there would have been an increase, I believe, in that data for 2003 when it's fully analyzed. So the question that you all have to face is, can you keep a safety focus while you also continue to build on the security focus that you have to have in the post-9/11 era? I hope the answer to that is a resounding "yes," and I hope you will prove to me over the coming year that the answer is a resounding "yes."

We heard Oliver Kingsley talk a few minutes ago about how cost effective this industry is today. I'm not trying to make you less cost effective needlessly. But I think when you are the low cost producer of power in this country other than hydro, you should not be short-changing folks who come to you asking for improvements, whether in the safety or the security area. Any such short-changing bothers me -- this probably reflects my upbringing, since I am the son of a United Mine Worker, and I did grow up reading John L. Lewis' diatribes about the evils of "Big Coal" -- one of my earliest memories as a kid is reading my father's newsletters. I think you can afford to do both -- both good safety and good security -- and I look forward to your making the investments needed. Again, Oliver mentioned the late Bill Lee's admonition that this industry is only as strong as its weakest members. That's the fundamental premise of this industry. It's an industry that's different, as Mr. Kingsley said, from all others. It's an industry that has to hold itself to a higher standard, a standard of excellence. Many of you meet that standard every day. I think this industry has some absolutely top performers.

A company that I will mention positively, although we're not supposed to do this necessarily, but one that I think did an outstanding job last year are the folks that run the South Texas Project. The way they dealt at last year's Regulatory Information Conference with the bottom-mounted instrumentation leak they had detected, the aggressive way they went about investigating that, indeed everything they did over this last year from the point of view of a regulator was pretty darn close to perfect. And there are many others who behave just the same way, from the point of view of a regulator and the point of view of INPO. Unfortunately, there are some that get into trouble. There are some that get into trouble and it's a burden on us, and it's a burden on the industry. Obviously Davis-Besse is the poster child for this. I'm not trying to single out FirstEnergy, but here's a quote that I found in this week's NRC's press clips from Alex Marion of NEI which I think everybody should take to heart: "We never expected somebody to ignore the obvious for so long. Complacency is problematic. Too much focus on generating electricity, and losing focus on safety is problematic." Obviously I couldn't agree more with Mr. Marion.

There have been changes since Davis-Besse, at both NRC and, I think, the industry. I think INPO has searched its soul, as we have searched our soul as to why we missed what we missed. How could we both have not seen Davis-Besse coming? NRC has a big task force which has made about 49 recommendations for change, and we're working our way through them. I think that one of the most important lessons learned from Davis-Besse is that we can't do "good-guy regulation." We can't assume that just because you've behaved well in the past and had good performance indicators that that's the future. I think that skepticism about good performers is built into the new reactor oversight process to some degree. There's a consistent baseline inspection that everybody gets, and I think it's built into the way we think today about plant mysteries and the operational data that we're getting. Art Howell from Region IV in a meeting we had last week on Davis-Besse lessons learned told us that today the morning meetings in each of the Regions go on for much longer and have a much lower threshold for issues than was the case prior to Davis-Besse. We need to continue in that way.

One of the other big lessons learned from Davis-Besse is best epitomized in a quotation from Brian Sheron which I saw in one of the newsletters sometime ago. It was a question that he raised at a technical meeting with one of the owners' groups -- "What do the French know that we don't know?" I think there was a certain amount of hubris through the 1990s here at NRC, while Mr. Lacoste and his colleagues at what is today called the Agency for Nuclear Safety, basically imposed inspection requirements on the French industry that led them to the logical conclusion that they'd best replace their reactor heads. It's oftentimes said that Mr. Lacoste required EDF (Electricite de France) to

replace their reactor heads. I think he told you last year at one of the breakout sessions that he didn't do that -- that he just imposed an inspection regime that led to the logical conclusion that they'd best replace their heads. And that's what we're doing today. Over time I can't imagine that there will be very many licensees, if any, who will not have replaced the heads on their pressurized water reactors.

So lack of tolerance for plant mysteries, what do the French know that we don't know, and no good-guy regulation are just fundamental things that we need to build into what we think about and what we do going forward.

I'm going to now switch gears a little bit and go back to security. There was a very good discussion this morning in this chamber about where NRC stands on security. I'm not going to try to repeat everything that was said there, but I am very proud of what we've been able to do in security of our facilities over the last two and a half years. I think we are a model for the nation. I think our judgments on security matters have been judicious and balanced. One of the things that I heard in the morning session bothered me and goes to this issue that I just talked about -- possible complacency among some minority of the members of the industry. Roy Zimmerman mentioned that we have 22 plants today who are still not taking advantage of the protected web server to obtain information about security matters. They do not have documented users, and to get to that web server you have to be a documented user. But we have most of the plants, most of the States, and many of the law enforcement and federal agencies using our protected web server to get up-to-date information about security matters. And 22 of you have chosen not to do it.

It's just a frustration. I hadn't known that fact until this morning, but I put it out there for you all to deal with. I think if you had an INPO for security and you were striving for excellence, going beyond regulatory rules as Mr. Kingsley said earlier, this would never happen. One lesson of Three Mile Island is that compliance with rules alone is not going to get you safety necessarily. The same is true for security. I'm surprised that there is not a peer mechanism within the industry that doesn't solve the problem of 22 plants not bothering to get up-to-date information about security events at other plants that we're willing to share.

I'll leave power plant security. One of the things that former Commissioner Greta Dicus did during her many years on the Commission at these conferences was talk about materials issues. I'll try to continue that tradition in some measure. There was a little bit of a challenge yesterday when Chairman Diaz spoke that he hadn't given enough attention to materials issues, so I'm going to change course again right now and talk a little bit about materials issues.

Obviously the one that the Chairman was challenged on yesterday is why hadn't he talked about Yucca Mountain. He answered, and you all heard the answer, that it's been a major focus of this Commission. We have invested enormous resources in getting ready for that adjudication. I think we have done everything that a good regulator could do to try carry out our statutory mandate to be able to determine whether to give the Department of Energy construction authorization within three or four years of receiving that application, which may come in December of this year. This is going to be, I believe -- the lawyers always tell me not to say this -- the most complicated administrative proceeding in the history of mankind. DOE has told us they have 37 million pages of documents to deposit as of today in the electronic Licensing Support Network document system that is going to be used as part of the discovery process for the Yucca Mountain adjudication. I think that is just the tip of the iceberg on the complexity of this proceeding.

We are preparing and have contracted for hearing rooms in Nevada. Classified security issues probably will be handled in our hearing room here. We are prepared to have multiple Atomic Safety and Licensing Board Panels empaneled, in all likelihood, and it is just going to be extraordinary. If you think of other extraordinary adjudications that have occurred, like the Microsoft anti-trust case -- and I don't know anything about the Microsoft case except that Microsoft didn't win it -- that Judge and his Special Assistant had to pour over large numbers of documents, very complex documents, and they had to pour over a fair number of emails. But I think even Mr. Gates doesn't churn out 37 million pages of emails.

So Yucca Mountain has been a focus. In the security area in dealing with our materials licensees we are very proud of what we have done. We get, I think, very little credit for what we've done. But we have been the leader in the world in deciding how to deal with high-risk radioactive sources. We have Carl Paperiello in the audience. Carl, former Chairman Meserve, and Secretary Abraham about this time last year were in Vienna for a conference on radiological dispersal devices. Following that conference our staff helped redraft the revised IAEA Code of Conduct on the Safety and Security of Radioactive Sources. We defined the radionuclides of concern together with our Federal and international partners, particularly the Department of Energy. We defined thresholds of concern for each of those radionuclides. We laid out an action plan to address the problem. Our Ambassador to the IAEA in October of last year made a political commitment from the United States to implement the revised Code. And we are proceeding aggressively. We have issued Security Orders to a couple of classes of licensees who have high-risk radioactive sources, the ones that we believe are the most important -- namely large irradiator facilities and manufacturers and distributors of sources. We have conducted an initial inventory of the 2,500 or so licensees, either NRC or Agreement States, who may possess high-risk radioactive material. That inventory is almost complete. We have discovered there are far fewer than 2,500 -- something more on the order of 1,500 -- who actually do possess high-risk radioactive sources. We are committed to developing a national database, a national registry for high-risk sources that will track these sources from cradle to grave as the IAEA Code of Conduct urges us to do.

We have export and import regulations that are under development and due to the Commission in June. Our staff is also working with other nations so that our export-import controls will be compatible with theirs and we will have a mutually reinforcing set of export-import regulations around the world.

These are extraordinary achievements, and unfortunately they are undermined in many respects by a single really terrible General Accounting Office (GAO) report that was issued last year. I will tell you when that report came out I called one of the authors and basically told him that he should be ashamed to accept his paycheck given the quality of the report. The report confused tritium exit signs with high-risk sources. The report implied that all radionuclides are equally risky, and that there were millions of risky sources in the hands of tens of thousands of licensees. This person felt that it would be an RDD event to go into a shopping mall and break some exit signs, which is ridiculous. That would be many orders of magnitude from being a significant event -- you're talking about millirems or less -- but that's where he came from. A recent report from the Democratic members of the House Select Committee on Homeland Security -- and I'm a Democrat -- quotes the GAO report. The Progressive Policy Institute previously had relied on the GAO report in giving NRC a low grade on radioactive source security. The GAO report gets quoted all the time in the news media, and it's absolute nonsense. I don't blame those misled by the report. I blame GAO. You can go into our web

page for various letters from the Chairman and Dr. Travers that told GAO both before they issued the report and after they issued the report, what we thought of their report and how dumb it was, but GAO stood by the report. The Chairman wrote the Comptroller General, Mr. Walker, and got a letter back from the guy who actually signed the report saying GAO stands by the report.

So we have some work to do with GAO. We have some work to do on other security areas with GAO, but that's an example of very, very good work done by this agency -- really leading the world in partnership with colleagues from many other nations -- Canadian, French, British, Spanish, and other colleagues who want to work with us hand-in-glove in this area. But then some GAO staffers come along who do not know what they're talking about and they undermine public confidence in you -- and then stand by it. It makes me long for the old Congressional Office of Technology Assessment, headed by people like Jack Gibbons, which always did technically competent reports before it was abolished in the mid-1990s.

One of the issues Greta Dicus used to talk about in the materials area, and one of the most interesting things I came across in the last few weeks, in the last year really, relates to the exposures real people have to ionizing radiation. I'd like to call your attention to an article in the March 6th British Medical Journal -- which you can get online at www.bmj.com -- by Eugenio Picano, who's an Italian senior medical researcher who writes about medical radiation exposure. This is almost entirely outside of my regulatory responsibility, because most of this exposure comes from machines or accelerator produced material outside NRC purview. You know that your own industry works on keeping occupational doses as low as reasonably achievable, and we all want to know the origin of last year's increase in occupational doses at the plants. It's probably the head inspections and the steam dryer repairs that's causing that, but Dr. Picano makes the point that, according to UNSCEAR data (U.N. Scientific Committee on the Effects of Atomic Radiation), by 1997 in the most affluent countries, medical doses of radiation were equal to doses from natural sources of radiation. You've all seen these now outdated tables, you may have them on your own web sites, that the average American gets 360 millirems/year, 300 of it from natural radiation and 60 from medical. Well it isn't 60 from medical any more, and we're the most advanced of these nations in terms of making use of diagnostic tools in ways that this doctor feels may be inappropriate. This doctor feels that the medical community is over-doing it in its use of diagnostic scans. It's not my responsibility, but if I were a member of the public interest groups who are represented here who challenge NRC about millirems, I would be challenging the medical community or asking the medical community to police itself about whether there are people getting doses, very significant doses, who should not be getting doses. Dr. Picano points out in this article that when children get a CT scan, the scanning machines are not adjusted to the mass of the child's body, so they get needless doses. And we're not talking millirems, which oftentimes we are in nuclear reactor space. We are talking rems. So I call this article to your attention.

Mr. Lacoste at yesterday's breakout session said that the French public divides radiation into three sorts, and their attitude towards the three sorts of radiation is as follows. Natural radiation doesn't exist. In large parts of France obviously that's not true. There's lots of nice granite around. Artificial radiation that this industry is involved in is bad. Medical radiation is good. I suspect Americans would hold similar views. If you think about a typical nuclear power plant, I suspect that the workers there, given the age of the workers, probably get at least an average medical dose. If you have 1,000 workers at the plant, and they're getting 300-400 millirems on average from medical exposure, they are getting far more dose from the medical exposures than they get from working in the power plant -- 300-400 person-rem from medical scans compared to 126 person-rem according to Jim

Dyer's chart from yesterday's session. And the medical dose has been increasing rapidly for years. This is extraordinary.

I personally have had far more than an average dose in recent years because I had melanoma four and a half years ago and I get PET scans and CT scans routinely. I am a very sophisticated consumer of such tests -- probably more sophisticated than my oncologist. I'm sure I'm rare in having discussions with him about whether we can tone this dose down a little bit, and do we really need both a CT scan with contrast and a PET scan every four months. And we've worked it through. But most consumers aren't where I am. My son was not there. Three years ago my son was in the Senate Page program and while horsing around with a South Carolina football player in his dorm he managed to get tossed into a door. His sternum didn't get fractured but he fainted from the pain in his sternum. When he got to DC General Hospital in the middle of the night, in addition to a chest x-ray to look at the sternum, they did a CT scan of his brain. There was no call for such a scan, but they probably needed to amortize that piece of equipment. If I had been consulted, I would never have agreed to that CT scan.

I am bothered by the "images are us" culture in parts of the medical community, as discussed by Dr. Picano. If you listen to WTOP news radio here in Washington, every morning you will hear advertisements for heart scans, full-body scans, any scan you can think of for asymptomatic patients. Of course, they do not advertise you're getting rems as you get these scans. They do not advertise radiation at all. There is concern in the U.S. medical community and among State regulators and the FDA about overuse of CT scans with children. And perhaps some actions have been taken, but Dr. Picano sees the need for far more action. I suspect he is right. As I say, this part of my talk is aimed at some of my friends in the public interest groups for them to think about.

I've delivered my messages for the day. Now I'm going to go back into theory for a moment about what the role of a Commissioner is. About 24 years ago I was working on a speech for Marshall Shulman, who was the Soviet Affairs Advisor for Secretary Vance and then Secretary Muskie. It was one of his valedictory addresses -- this is not my valedictory, I have at least one more year here next year, God willing -- and his valedictory address was entitled "Rorschach-Rashomon-Bumper Sticker". It was a talk about U.S.-Soviet relations and the complicated time of the late 1970s. Rorschach referred to the Rorschach ink blot test. It's a standard tool for psychologists -- look at that blot and what do you see, and each of us sees something different. You have a tendency to project a lot of your emotions and vulnerabilities into that discussion. Rashomon referred to the famous Japanese movie, where you have different people looking at the same events in entirely different ways, and seeing something entirely different. And God knows, in U.S.-Soviet relations and nuclear safety there is a lot of Rashomon going on. Bumper sticker referred to the fact that when you deal with all this complexity -- actual, technical and psychological -- many people revert to bumper stickers. "America - Love It or Leave It" or "Peace Now" were a couple of the bumper stickers for those of you who are old enough to remember the 1960s and 1970s. And I think we have similar bumper stickers about nuclear power and nuclear safety. My job as a Commissioner is to cut through that. I'm a 28-year civil servant. And my job is to call them as I see them, to deal with complexity without emotion, and never revert to a bumper-sticker mentality.

One of the books that had the most profound effect on me as I was switching from being a scientist to having a government career, was a book by John Steinbruner, who was then at the Kennedy School of Government, called The Cybernetic Theory of Decision. It was rough going -- I read it when

I was at the Kennedy School of Government in the mid-1970s. The theory part was hard going. The story part -- he tried to mix theory with a good story -- the story part was about the multilateral force. The multilateral force was the notion that we should put nuclear-armed Polaris missiles onto surface ships with multilateral crews from NATO countries. This was the solution to the "German problem." It was a strongly held belief in certain elements of the U.S. and NATO bureaucracy that the Germans were going to have to have some involvement in nuclear weapons. It was a false premise, but for five or six years -- from about 1958 until 1964 -- development of the multilateral force cost the taxpayers many hundreds of millions of dollars -- in then-year dollars, billions of dollars in today's dollars. The multilateral force program was finally terminated in late 1964 by President Johnson and Prime Minister Harold Wilson after both had been re-elected and they got together in Bermuda. This whole sad episode was driven by a bunch of folks who Steinbruner termed "theoretical thinkers" or "ideological thinkers". These were folks -- in the State Department policy planning staff, in part of the Pentagon, and at NATO Brussels -- who didn't let any facts get in the way of their theory or ideology. If the Germans were going to go nuclear (and that was a matter of faith), we have to do something about it, and this is what we have to do.

Then Steinbruner has people in his story who are "realistic thinkers." The late Richard Neustadt of the Kennedy School was asked by McGeorge Bundy in the summer of 1964 to go to Europe and test the premise behind this project that was costing lots of money and which McGeorge Bundy had concerns about. And Neustadt came back and said, "yes, you're right, there really isn't any support there for this project, nor is there a German desire for nuclear weapons, and you can safely cancel this." And Neustadt and Bundy just dealt with the facts as they were. And then you had Lyndon Johnson and Harold Wilson and other politicians who were "political thinkers." And Steinbruner characterized them as folks who tended to agree with last person who got access to them.

My job as a Commissioner, as I think about it, is to be a realistic thinker, not a theoretical thinker, not a political thinker. And I believe I have been. And I believe my fellow Commissioners have been. We deal with the facts as they are. We do not bring ideology to the equation, and I don't believe we bring a lot of Rorschach blot to the equation. We try to make judicious decisions with which everybody can disagree. I was here for the security panel discussion this morning, and it's clear that we have not satisfied the two ends of the spectrum. But I think our judgments on security have been sound, and I think our judgments in safety space have been sound. And that is what a Commissioner is supposed to do. And I am proud of what I and my fellow Commissioners have done throughout my tenure.

I hope we have some questions, but I'm going to wrap up with a final reminder. Complacency is evil, whether it's in your plants or in our institution, the Nuclear Regulatory Commission. We have taken steps within our house to get rid of complacency. I think many of you licensees have taken steps within your houses to get rid of complacency. But as Mr. Lee said, you are only as strong as your weakest member. You have to make sure that complacency is rooted out throughout this industry and that you make the investments in both safety and security that are required for this industry to go forward for another many, many years of successful operation.

Thank you very much.