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# "NUCLEAR POWER INDUSTRY CHALLENGES: THE NRC PERSPECTIVE"

BY

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BEFORE THE

REGULATORY INFORMATION CONFERENCE
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Good morning, ladies and gentlemen. It is a pleasure to address this year's Regulatory Information Conference. I look forward to this conference each year, for the excellent opportunity it provides to focus on questions important to the NRC, the regulated nuclear industry, and the public.

Before anything else, though, I would like to say a few words about our colleague and friend Kenneth Rogers, for whom this is the last Regulatory Information Conference that he will attend as a Commissioner of the NRC. Ken Rogers, my fellow New Jerseyite, has served almost ten years -- longer than any other NRC Commissioner in the agency's history. During that time, his technical and policy excellence, and his strong sense of what good regulation means -- the NRC's "Principles of Good Regulation" were his initiative -- have made an immense and lasting contribution. We will miss his knowledge and wise counsel.

I also would like to welcome two Commissioners for whom this is their first Regulatory Information Conference: Commissioner Edward McGaffigan and Commissioner Nils Diaz. With their arrival, the Commission is at full strength for the first time in a number of years. We now have, as Congress intended, five independent thinkers, from different backgrounds and with different points of view, working together collegially to arrive at sound regulatory positions. I am delighted to have them on

board, and I know that Commissioner Rogers and Commissioner Dicus feel the same way.

Today I would like to discuss three issues that have received much attention over the past year, and that will continue to challenge the nuclear power industry in the foreseeable future. These are Maintenance of Design and Licensing Bases, Plant Performance Evaluation, and Economic Deregulation.

These three topics are linked to the three-pronged vision that I have advocated since becoming Chairman: (1) affirming NRC's fundamental public health and safety mission; (2) ensuring regulatory effectiveness; and, (3) positioning the Nuclear Regulatory Commission for change. In my first year as Chairman, I highlighted issues, or areas, for the NRC to concentrate on that were extensions of this vision. I believe strongly that sound regulation means having regulations that are, first, tied to safety, and second, consistently and fairly enforced. Compliance with the regulations is, and should be, an important part of ensuring safety. If regulations are not important to safety, they should be revised or eliminated.

Toward ensuring regulatory effectiveness, I have continued the movement toward risk-informed, performance-based regulation through the development of a PRA Regulatory Guide, PRA Standard Review Plan Guidance, and pilot processes for potential risk-informed regulation. This will assist the NRC and nuclear licensees in focussing their resources on the most safety-significant aspects of nuclear operations, while maintaining safety defense-in-depth.

In positioning the NRC for change, I initiated an action plan to examine electric utility industry restructuring, and the appropriateness of our regulatory processes for this evolving business environment. Additionally, I initiated a Strategic Assessment and Rebaselining effort to effectively position the NRC for the future. The areas that I will comment on today <u>also</u> are directly tied to the proper course for the agency. They have evolved over the past year and warrant additional emphasis and concentration in the year to come.

## <u>DESIGN AND LICENSING BASES</u>

In November of 1995, I directed the NRC staff to perform a "Lessons Learned" review to improve existing oversight processes, and/or to develop new processes to aid in earlier recognition of deficient conditions, or trends, at all of our nuclear power plant licensees. This review, although titled a "Millstone Lessons Learned," has been supplemented by information from several other recent NRC inspections. NRC staff has identified

design and configuration control deficiencies at a number of plants, that raise questions about whether licensee programs are sufficient to demonstrate that plant physical and functional characteristics are consistent with the established design bases, and whether plants are being maintained and operated in accordance with their design bases. These configuration control problems are of concern because of their potential impact on public health and safety. It is imperative that safety systems respond, as designed, to challenges from off-normal or accident conditions. The NRC believes that reliance on the industry's past voluntary efforts to maintain design-basis information may not have been sufficient to ensure configuration control at a number of plants.

As you know, we have asked the nuclear power industry to submit information that will give NRC added confidence and assurance that nuclear plants are being operated and maintained within their design bases, and that any deviations will be reconciled in a timely manner. I have talked with numerous utility executives, and I realize that this task has not been insignificant to your organizations. The NRC staff currently is reviewing the responses from the individual plants, and will integrate any recommendations for additional design-basis inspections into the plant-specific master inspection plan.

The Commission was provided the "Millstone Lessons Learned Part I" report last September. Recently, the staff provided the Commission with two additional reports: the "Millstone Lessons Learned Part II," report and a paper on the implementation of 10 CFR 50.59, "Changes, Tests, and Experiments." The Commission is involving itself closely in the policy questions raised, regarding the important areas of licensing basis, design basis, and the Final Safety Analysis Report. Commission decisions on the staff's short-term recommendations contained in these papers will be issued shortly.

As I stated at the two recent Commission meetings covering these subjects, I believe an honest assessment from the NRC would indicate that several of these areas are long overdue for improvement, particularly the use and maintenance of the Final Safety Analysis Report, and the implementation of 10 CFR 50.59.

In some cases, the present regulatory posture is not the result of any comprehensive planning, but, rather, is derived from a series of ad hoc decisions. Some of these issues have a 20- to 30-year history; 10 CFR 50.59, for example, originated in 1962. It is now clear that these areas need an integrated consideration. The Commission is intent on ensuring that there is a <u>timely</u> plan for integrated improvements to the processes, that are based on either ensuring compliance with existing regulations, or providing improvements with a net safety benefit,

duly considering cost. Regarding guidance to the staff on Millstone Lessons Learned items, the Commission is considering the staff's proposals, and is looking forward to an integrated look, by the staff, at the various policy issues in approximately 90 days.

I personally believe that the FSAR is an essential facet of the NRC's regulatory scheme, and plays a primary role in assuring that licensed facilities remain within NRC requirements, to ensure safety. I have recommended that the staff enforce the implementation of the FSAR update rule, 10 CFR 50.71(e), to ensure that FSARs are updated to the fullest extent possible to reflect changes to the design bases, and to reflect the effects of other analyses performed since original licensing, which should have been included by the terms of that regulation.

There have been recent violations at two separate plant sites (sites that have, for the most part, been out of the news) which highlight the importance of this issue. Several of the violations at the first plant stem from inadequate controls over repairs to the reactor head vent system. A separate violation pertains to a failure to identify and correct -- for roughly 13 years -- the improper positioning of two isolation valves for the power operated relief valves. This situation was contrary to plant design, and was a change performed without a required safety evaluation. At the second plant, a group of violations involved unreviewed safety questions not identified in safety evaluations done prior to plant modifications, that could result in the loss of an emergency diesel generator, potential failure of a turbine-driven auxiliary feedwater pump, and potential inadequate control of boron precipitation in the core, during certain postulated loss of coolant accidents. Also involved was a failure to establish adequate measures to ensure that the plant's regulatory and basic design requirements were translated correctly into specifications, procedures, and instructions.

It is not all bad news, however. Most licensees have recognized the importance of commitments, and that plant changes should be evaluated against more than the FSAR. Moreover, the NRC has recognized the importance of 10 CFR 50.59 to power reactor licensees, and to the NRC; and the NRC has inspected licensees' application of this critical rule. Although the NRC has struggled to provide adequate guidance for implementation of this rule, the recent Commission paper on this topic provides an excellent discussion of the various points of contention, and provides a clear NRC proposed position. As I stated at the Commission meeting on this subject, to me the bottom line is clear: the plant system engineer, who is preparing an evaluation of a system modification or procedure change, and the NRC inspector in the field who is (quote) "looking over the engineer's shoulder" (unquote) -- need clear guidance. And this

clear guidance needs a firm regulatory basis. The NRC welcomes your comments during this process.

PLANT PERFORMANCE EVALUATION

The NRC evaluates the overall U.S. nuclear power reactor safety performance through a variety of mechanisms, including the use of performance indicators that, when viewed as a whole, provide additional data for determining performance trends. As measured by these indicators, the U.S. nuclear industry's safety performance has shown continuing improvement over the past 12 years.

The safety performance of all nuclear power plants is evaluated using licensing information, inspection results, operating experience, performance indicators, enforcement actions, and assessments of the licensees' effectiveness in identifying and correcting problems. This review process culminates in the Senior Management Meetings, conducted semiannually to ensure that the NRC is focusing its resources properly on facilities that most need regulatory attention, based on safety performance and the issues of greatest safety significance. The result of the Senior Management Meeting discussions is a proposed list of facilities that, although most may operate in a manner that adequately protects public health and safety, are having or have had demonstrated weaknesses that warrant increased NRC attention.

To further improve the effectiveness of the Senior Management Meeting process, and to make the process more readily transparent, I requested the NRC staff to identify objective, meaningful, "leading" performance indicators. In order to ensure that safety performance problems are in fact corrected, the staff also was requested to identify an enhanced approach for monitoring and assessing licensee corrective actions. In order to respond to this request, in the Summer of 1996, I asked the NRC staff to commission an outside study to evaluate the process, to ascertain how the senior managers can improve the timeliness and thoroughness of plant safety assessments, to recommend performance indicators based on objective data, and to define a methodology for assessing management and operational effectiveness.

The product was the Arthur Andersen Assessment of the Senior Management Meeting Process and Information Base. The report clearly indicates that there is a relationship between the existing NRC performance indicators and plant performance. The report makes several recommendations, and proposes a methodology for using these performance indicators in reaching NRC decisions. The report was completed just prior to the January 1997 Senior

Management Meeting. The Commission was briefed on the report on February 18, and tasked the NRC staff to consider the extent to which existing performance indicators can be used more effectively in the NRC's decision making processes, with new risk-based indicators being phased in as they are developed. The goals are to select facilities for discussion in the Senior Management Meeting based on objective performance information and to make the Senior Management Meetings themselves more scrutable in terms of the connection between plant performance data and the ensuing decisions.

The NRC staff currently is evaluating the Arthur Anderson study, and will be presenting its recommendations for further improvement of the Senior Management Meeting process for Commission consideration shortly. In addition, the Commission wants consistency between the Senior Management Meeting decisions and decisions which are reached in other evaluative processes (for example, the Systematic Assessment of Licensee Performance, and the Plant Performance Reviews).

I believe the NRC staff should continue to evaluate the extent to which existing performance indicators characterize plant performance. The staff also should explore the feasibility of developing new indicators. In particular, I believe that the feasibility of using economic, management, and risk-based indicators, such as system unavailability over time, in the decision-making process should be explored. Improvements should make the process more readily transparent both to the regulated industry and to the public.

There has been much discussion and analysis of the increase in the number of plants on the January 1997 list of plants that warrant increased NRC attention, i.e., the "Watch List." In general, I found the results of the latest Senior Management Meeting to be encouraging with regard to improving decisions by basing them on demonstrated safety performance. The processes used, while not perfect, were credible. Even though the number of plants on the Watch List did increase, I do not think that this represents a general decline in performance in the nuclear power industry. I would remind you of the definition for a Watch List Category 2 facility, that is -- one requiring increased NRC attention. For many of the plants which were added to the list, increased NRC attention already was being applied via the inspection program. I do think that the increase in the number of plants on the NRC Watch List is indicative of the NRC's resolve to ensure that plant performance problems are identified and corrected effectively. For some of the plants which were added to the list in January, performance problems have persisted for too long without effective redress. The NRC is interested, not so much in the plans to correct problems, or even in the new management brought in to change the organization -- even though

these are not unimportant, but in the performance results evident when problems have been corrected.

As has been identified, room for improvement remains in finalizing objective, meaningful performance indicators, recognizing "leading indicators" that identify, for example, where cost cutting measures may impact safe operations, and in monitoring licensee actions to ensure that safety performance problems have actually been corrected. With the transitions which are occurring rapidly in the electric utility industry today, it is imperative that facilities promptly and effectively address performance problems, and that NRC be timely, objective, and accurate in evaluating plant performance to ensure the continued safety of operating commercial reactors. To this end, the Commission plans to monitor closely the staff's progress in these areas, and to give clear policy guidance, as appropriate.

The majority of my discussion has concentrated on NRC actions for assessing plant performance. I have summarized actions the NRC is taking to better assess plant performance. However, this topic has its direct corollary for each and every nuclear plant. Each of you has the vested interest to maximize performance -- from each piece of equipment, from each of your plant processes and procedures, and from each of your employees. I have asked almost every utility executive that I have met over the last year questions regarding what they use as "leading indicators" for performance. The answers have been varied. Just as the NRC is fine tuning its plant performance evaluation, I would like to think that all of you are also studying this issue. The newly evolving market is demanding it.

## ECONOMIC DEREGULATION AND RESTRUCTURING OF ELECTRIC UTILITY INDUSTRY

The Commission realizes this is a time of considerable change for the electric utility industry as it transitions to a competitive marketplace. The changes associated with economic deregulation and restructuring of the electric utility industry have operational, economic, and ownership aspects that are important to the NRC. These changes and economic uncertainties are driven by regulatory and market forces that will determine how, and in what form, nuclear electric generators will function in an unregulated, or less regulated, world.

I read a recent report from the Institute for Natural Gas Association of America (INGAA), which performed an economic assessment of the potential for the early shutdown of nuclear power plants. Although I realize the speculative nature of studies of this type, and the importance of assumptions that are made in these studies, the report arrived at an interesting

conclusion regarding the importance of plant management.. (quote) "Management performance, not technology or other external factors, is the most critical variable in determining which plants will continue to operate." (unquote) I was struck by, and agree with, the focus of that statement. How **plant management** deals with design and licensing basis issues, with the challenges of honestly assessing plant performance, and with the unknown challenges of deregulation -- will all have critical consequences for the remaining life, and possible life extension, of your nuclear power plants. In short, your own performance is the most critical variable to your future success.

As the business environment changes, the role of the NRC is to ensure that economic pressures do not erode nuclear safety and that nuclear electric generators continue to maintain high safety standards, with sufficient attention and resources devoted to nuclear operations and decommissioning funding. To this end, the NRC initiated a seven-task action plan in February 1996, to address agency concerns. As one task in this action plan, the NRC issued an advance notice of proposed rulemaking on decommissioning funding following last year's conference. The advance notice of proposed rulemaking explained that some additional decommissioning funding assurance might be needed for those power reactor licensees that were no longer subject to rate regulation by the Federal Energy Regulatory Commission (FERC) or the State public utility commissions. The NRC staff currently is developing a proposed rule on decommissioning funding, in light of the comments received in response to that advance notice of proposed rulemaking, which is expected to be before the Commission for consideration in May.

The NRC also has issued for public comment a Draft Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry, and draft Standard Review Plans in the areas of financial qualifications, decommissioning funding assurance, and antitrust reviews. In addition, the NRC is examining possible changes in reporting requirements with respect to decommissioning funding.

Because of the complexity of the proposed new business arrangements, and because of its concern about the timing of possible asset divestiture in relation to rate deregulation, NRC issued an administrative letter last June 21, informing licensees of their obligation, under NRC's regulations, to report changes in ownership that would constitute a transfer of the NRC license. It also included a reminder of the licensees' responsibility to advise NRC promptly of any information bearing on financial qualifications and the assurance of decommissioning funding.

Another task in the action plan has been to foster increased staff-level contacts between the NRC and other Federal and State

regulators. Establishing this dialogue will enhance NRC's understanding of the implications of the decisions that FERC and the public utility commissions make, and will help to identify any safety issues that may flow from those decisions.

As deregulation unfolds, an emerging potential safety issue is electrical grid reliability. The offsite electrical power system is important to ensuring the safety of nuclear power plants. When the reliability of the grid is compromised, it may lead to additional challenges to safety systems, and to more frequent utilization of onsite power systems. Therefore, from the perspective of the NRC, deregulation must proceed with a sensitivity to and an understanding of the response of nuclear plants to loss-of-offsite-power events. This is an issue that must be confronted in the formation of Independent System Operators.

The current regulatory framework gives NRC the authority to obtain the information it needs to determine whether any restructuring actions are creating problems in operational safety, or in financial assurance for decommissioning. The issue NRC faces is how to further strengthen its capabilities in these areas in response to rapidly evolving State and Federal initiatives. The NRC intends to monitor these issues closely, to take whatever action is required in specific cases, and, as necessary, to modify its regulatory framework.

The Commission will have two meetings later this month to further study the various aspects of utility deregulation. The first meeting, on April 23, 1997, will concentrate on electrical grid reliability. The NRC Offices of AEOD and NRR will comment on this issue, and a panel of industry members (representing a geographical cross-section of the country), will discuss their electrical grids, and potential impacts on them from the formation of entities such as Independent System Operators. The second meeting (the following morning), will focus on the status of electric utility industry restructuring, and will include discussions from representatives of the majority of the parties associated with monitoring, regulating and legislating deregulation.

## THE NUCLEAR TIE THAT BINDS

Before I conclude, I would like to take a moment to reiterate that the challenges that this industry faces, both nationally and internationally, are to a very large degree, shared by all its members.

The industry lost a respected leader this past summer with the passing of Mr. William S. Lee, of Duke Power Company. I would

like to repeat something he said in 1981: "No nuclear plant stands alone. An event at any affects us all...we face together the challenge of the quest for excellence -- a quest that knows neither the boundary of a plant fence nor an international border..."

This conference is an important forum for the sharing of information to assist every nuclear plant in its individual challenge for excellence in operation, and in avoiding the detrimental effects of any event. However, we all must realize that this is a day-to-day task, not a once a year undertaking.

The same attitude that applies in the U.S., also should apply internationally. That is why during the last year, I have raised the issue of the desirability of an independent and formal mechanism through which national nuclear regulators at the highest levels might share their experience and coordinate policy approaches to nuclear safety. In mid-January the NRC convened a working group to discuss the possibility of creating an International Nuclear Regulators Association. The association's objectives will include building a global nuclear safety culture, identifying emerging nuclear regulatory challenges, encouraging the most efficient use of resources, working to enhance the stature of nuclear regulatory organizations worldwide, seeking consensus on nuclear regulatory issues, facilitating international regulatory cooperation, and working with relevant existing intergovernmental organizations (for example, the International Atomic Energy Agency, and the Organization for Economic Cooperation and Development/Nuclear Energy Agency) and other national nuclear regulatory organizations. The NRC expects this association to be created formally at a meeting in Paris at the end of May.

## CONCLUSION

Today, my main messages are these. In the area of regulations, especially 10 CFR 50.71(e) and 10 CFR 50.59, the Commission intends to resolve long lingering issues with respect to design/licensing bases in a fair, consistent, and integrated manner. With respect to plant performance, it is the intent of the Commission that the NRC staff have an integrated process for plant evaluation and assessment, beginning with plant inspections, building on the SALP process and plant performance reviews, and culminating in the Senior Management Meeting. In addition, it is the Commission's intention that the Senior Management Meeting process is carried out with objective performance indicators, and is fair and scrutable.

As for deregulation of the electric utility industry, the NRC's role is not to try to dictate organizatinal structures but we

will inform ourselves and stay abreast of developments. We will promulgate a rulemaking on decommissioning funding. We also expect to issue standard review plans covering financial reviews, decommissioning funding assurance, and anti-trust reviews. Our focus on license transfers is important as generation assets are spun off, and new companies, with new partners, are formed. With respect to stranded assets our main focus is decommissioning funding. However, the treatment of stranded assets is important for our financial reviews pursuant to license transfer requests. The approach of securitization of stranded costs is an interesting subject, which will be explored in the up-coming Commission meeting on April 24th, on Electric Utility Industry Restructuring.

The NRC will give focus to grid reliability issues as they affect the safety of nuclear power plants. We will weigh in on legislation, as appropriate, or within regulatory space, if necessary, on this important issue.

Today, I have outlined some of the challenges facing the nuclear power industry and the NRC, in our separate and at the same time, closely associated roles. To date, the overall industry record of good performance continues. That good record will continue only so long as all of us do our utmost to make it continue. What can put it at risk? Poor operational performance; an incomplete or poorly maintained design and licensing basis; an incorrect assessment (by either you or the NRC) of your plant performance; or, an unwise economy on safety, resulting from industry-wide cost-cutting pressures related to deregulation. This is a time, therefore, for redoubled vigilance, from the industry and the regulators alike.

In conclusion, I have every confidence that in the coming year, the industry and the NRC will continue aggressively to meet their respective challenges. Our mutual goal is to manage these challenges successfully, and thereby to fulfill our commitment to the safety of the American people.