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NUCLEAR POWER IN A COMPETITIVE ERA  
BY

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AT THE

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IN COMPETITIVE ELECTRICITY MARKETS

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Good afternoon, ladies and gentlemen. I am delighted to be here to address this National Association of Regulatory Utility Commissioners (NARUC) Conference on Nuclear Energy In Competitive Electricity Markets.

**INTRODUCTION**

We at the Nuclear Regulatory Commission (NRC) have recognized that there is an evolution - some would say "revolution" - in forces affecting our licensees in the electric utility industry. I am speaking of the economic deregulation of that industry. This changing environment has profound significance for the electric utility industry, and, of course, for the NRC. At the same time, the NRC is experiencing potential and actual changes in its responsibilities overall, and in the resources available to the agency to carry out its mission.

In my remarks today I will discuss the external environment affecting our licensees as we see it, as well as its effect on the NRC. I will address briefly the NRC Strategic Assessment and Rebaselining which is designed to ensure that we make the

adjustments necessary to be effective in a changing environment. My focus will then become specific to the primary topic of this conference in addressing how we view the role of the NRC in meeting its mission to protect public health and safety, as economic deregulation and utility restructuring unfold.

#### **FIVE MEMBER COMMISSION**

One obvious change in recent months for the NRC is that, for the first time since June 1993, we have a full complement of Commissioners, with the appointment of Commissioners Nils Diaz, who is in attendance here at your conference, and Edward McGaffigan, Jr. They join Commissioner Kenneth Rogers, who will be speaking to you tomorrow, Commissioner Greta Dicus, and me. The diverse backgrounds and experiences of the members of the Commission bring valuable perspectives to our decision-making process.

#### **EXTERNAL REGULATION OF THE DEPARTMENT OF ENERGY (DOE)**

One potential change for the NRC is the external regulation of U.S. Department of Energy (DOE) nuclear activities. This issue has been identified in our Strategic Assessment and Rebaselining as a direction-setting issue for the agency, because of its potential effect on the future operation of the NRC.

In 1995, the DOE created an Advisory Committee on External Regulation. In its December 1995 report, the Committee recommended that DOE nuclear facilities be regulated externally, and named the NRC and the Defense Nuclear Facilities Safety Board as the two potential safety regulators. Last month, the Secretary of Energy announced that the administration would introduce legislation to give the NRC the responsibility for the regulation of nearly all DOE nuclear facilities, phased in over a ten-year period. After enactment of the appropriate enabling legislation, in the first five-year period, the NRC would regulate all DOE Nuclear Energy and Energy Research nuclear facilities, and related Environmental Management and Defense Program nuclear facilities. In the second five-year period, all Environmental Management nuclear facilities, as well as selected Defense Program nuclear facilities, would come under NRC regulations. At the end of ten years, there would be a limited number of Defense Program nuclear facilities remaining to transition to the regulatory purview of the NRC. If that occurred, the Defense Nuclear Facilities Safety Board staff would be absorbed into the NRC. At the end of Phase 1 and Phase 2, there would be Presidential and Congressional decision milestones on whether to continue to the next phase.

Many questions remain to be answered and many issues, both legal and technical, must be resolved about NRC oversight of DOE

nuclear facilities. In considering this issue as part of the Strategic Assessment and Rebaselining, the Commission is factoring in the Energy Secretary's recent announcement and the public comments received on the DOE external regulation direction-setting issue. Those comments overwhelmingly favor NRC oversight of DOE nuclear facilities.

## **STRATEGIC ASSESSMENT**

Having made reference to the Strategic Assessment and Rebaselining, let me talk about that process. It was and is intended as an intensive, critical self-evaluation to provide a sound foundation for setting NRC direction through the balance of this decade and into the next. This initiative comprises four phases. The first phase identified key strategic issues, which were bundled into approximately twenty direction-setting issues. In the second phase, issue papers were developed for the direction-setting issues, containing policy options for Commission consideration.

The Commission has expressed preliminary views on the policy options presented in each of the issue papers. Before making final decisions, however, the Commission sought the views of our stakeholders -- the nuclear industry, our licensees, the public, and our employees. Subsequent to the release of the issue papers on September 16, 1996, the NRC held three public meetings around the country to obtain feedback and comments from stakeholders. The Commission is now considering all of the comments in making final decisions, which will form the basis for a new NRC Strategic Plan, Performance Plan, and Multiyear Implementation Plan. In the final phase, these plans will provide a framework for future decision-making and a template for aligning our resources with NRC's mission and goals.

## **HIGH LEVEL WASTE**

Although not a new responsibility, the U.S. High Level Radioactive Waste Management Program has been marked by calls for change -- notably in the 104th Congress. It appears that the 105th Congress will take up the high-level radioactive waste issue during this session.

The continued operation of many nuclear reactors over decades has meant a steadily mounting quantity of spent fuel requiring storage and disposal. The need to address and resolve this problem in a timely manner remains critically important. The Commission hopes that the various legislative initiatives will lead to a comprehensive High-Level Radioactive Waste Management Program for the nation -- one with clarity and stability.

## DECOMMISSIONING

Decommissioning of nuclear facilities continues to be an area of considerable importance to the NRC. It will require vigilant efforts on the part of the NRC and its licensees to ensure that decommissioning is carried out in a manner that protects public health and safety, and that funding is available to do so.

An important aspect of any successful regulatory program is having fair, consistent, and cohesive regulatory requirements. To that end, the Commission, in 1988, put into place general requirements for decommissioning. But over time, we have identified additional regulatory requirements that need to be promulgated, or existing requirements that need amendment, in order to put our regulatory program for decommissioning activities into final form.

What constitutes acceptable levels of residual radioactivity for decommissioned nuclear facilities was not addressed in our 1988 regulations. As a consequence, the NRC initiated a rulemaking in 1992 to establish appropriate radiological criteria for decommissioning. Over a two-year period, the NRC conducted a series of workshops and meetings across the country to discuss the scope, issues, and alternative approaches to the rulemaking. The workshops and scoping discussions were used in the preparation of the proposed rule on radiological criteria for license termination that was published in the Federal Register in August 1994 (59 FR 43200).

Since the publication of the proposed rule, the NRC has conducted additional public workshops on the implementation of a dose-based standard for decommissioned sites, and on public participation in planning and conducting decommissioning.

As a result of the very extensive public participation process used in this rulemaking, the NRC has received literally thousands of comments on the subject. Having completed its analysis of these comments, the staff plans to submit a final rule to the Commission for its consideration early this year.

In formulating and promulgating its final rule on radiological criteria for license termination, the Commission will give particular consideration to: (1) an all-pathways dose criterion in the range of 15 to 30 mrem per year; (2) inclusion of specific alternative criteria for certain facilities; (3) elimination of a separate groundwater standard; (4) the appropriate application of ALARA, based on the dose criteria selected in the final rule; (5) a greater reliance on institutional controls; and (6) the appropriate value of the maximum dose limit permitted if restrictions should fail. Issuing this final rule will be a

significant achievement for the Commission, the public, and the regulated industry, because it will establish a national standard of safety for terminated sites.

## **ECONOMIC DEREGULATION AND COMPETITION - EFFECT ON NUCLEAR REACTOR REGULATION**

A major challenge for the nuclear industry and the NRC is ensuring adequate financial assurance for decommissioning both nuclear reactors and materials facilities. This issue must be addressed by those who play a role in economic regulation of the electric utility industry. With this backdrop, I will address the issues of concern to the NRC relating to deregulation of the electric utility industry.

### Operational Concerns

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. Of course, the NRC is not an economic or rate regulator, but we long have recognized the challenges posed to the nuclear power industry by a changing business environment and by fiscal stringency. They include internal restructuring; ownership changes, including mergers; and a continual effort by utilities to control and reduce costs. These structural changes and economic uncertainties are driven by regulatory and market forces that will determine how, and in what form, nuclear electric generators will survive in an unregulated, or less regulated, world. The role of the NRC is not to dictate what changes should occur or into what form electric utilities restructure. Our focus is on ensuring that, as the business environment changes, economic pressures do not erode nuclear safety. That means that nuclear electric generators must continue to maintain high safety standards, with sufficient attention and resources devoted to nuclear operations, and with decommissioning funding secure.

The NRC traditionally has relied on its inspection and plant assessment programs to identify any adverse trends in safety performance. Based on inspection program results, plant performance reviews, and other evaluative mechanisms, the NRC can take action it deems appropriate to protect public health and safety. In the current economic environment, if new business arrangements, competition, or economic constraints result in any impairment of safety, it is imperative that our assessment mechanisms detect such problems early.

Recent events at several reactors have underscored a need for heightened concern. An NRC special independent safety assessment of the Maine Yankee Nuclear Station concluded that, while overall

performance at the plant was adequate for continued operation, there were a number of significant deficiencies. These deficiencies, several of which will result in enforcement action, stemmed from two closely related root causes. The first was economic pressure to be a low-cost energy producer, which limited the resources available for corrective actions and plant improvements. The second was the lack of a questioning attitude -- a major component of a safety culture -- which resulted in a failure to identify and promptly correct problems arising in areas that management viewed, not always correctly, as having low safety significance.

To detect clearly any similar degradations at other facilities, the Commission has asked the staff to examine measures to identify plants where economic stress may be impacting safety. The NRC has approved for public comment a paper entitled, "Establishing and Maintaining a Safety Conscious Work Environment." The paper includes as "evidence of an emerging adverse trend" the following example: "cost-cutting measures at the expense of safety considerations."

As deregulation unfolds, an emerging potential public health and safety issue is electrical grid reliability. In 1996, two electrical disturbances (within a five-week period) on the Western Grid caused 190 plants to trip off-line, including several nuclear units. In particular, on July 2, 1996, a transmission line sagged into a tree in Idaho creating a ground fault which progressed into a major fault on the Western Interconnection. The nuclear plants saw a frequency transient, but did not scram or lose offsite power. A similar event occurred the next day but did not propagate outside Idaho.

On August 10, 1996, again a line sagged into a tree, this time in Oregon. The subsequent transient resulted in the loss of over 30,000 MW of load, 25,000 MW of generation, which is 17 percent of the total western U.S.-Canada generation, and the tripping of 190 generating units including both Diablo Canyon Units and Palo Verde Unit 1 and Unit 3. Diablo Canyon declared the normal 500 kV offsite power source inoperable. Both Units transferred to the alternate offsite power source. Palo Verde did not lose offsite power.

In reviewing the August 10, 1996 incident, the Western Systems Coordinating Council listed the following contributing factors: high Northwest transmission loads; equipment out of service; inadequate maintenance of its right-of-way by the Bonneville Power Authority; operation in a condition in which a single failure would overload parallel lines, triggering cascading outages; failure of Bonneville to adequately communicate events prior to the disturbance to neighboring utilities; and no response by Bonneville to the earlier July 2 events.

What does this have to do with our discussion today? Let me explain. In 1988, the NRC initiated Individual Plant Examinations to study the various initiators of reactor core damage events. All nuclear plants performed probabilistic risk assessments, with detailed modelling of their plant systems, to search for plant-specific vulnerabilities from severe accidents. At many of the nuclear plants these studies showed that a major contributor to core damage frequency was a Station Blackout event. Events of this type are defined as Loss-of-Offsite-Power events, coupled with the inability of the onsite emergency diesel generators to provide power to necessary plant safety equipment.

Although Station Blackout events have been extremely rare to date, there have been a number of Loss-of-Offsite-Power events. There also have been instances where diesel generators at plants have not been operable for periods of time. Therefore, the possibility of a Station Blackout is of concern to the NRC.

Therefore, from the NRC perspective, deregulation must proceed with a sensitivity to and understanding of the vulnerability of nuclear plants to Loss-of-Offsite-Power events. Grid reliability governance structures must reflect this. This is an important issue, therefore, to be considered in the formation of Independent System Operators (ISOs). This implies, for example, that standards of performance, operational criteria, and training of personnel are critical oversight issues that must all be factored in and properly addressed as deregulation goes forward.

Although grid reliability is a voluntary function under the North American Electric Reliability Council and the regional councils, federal oversight currently is located at the Federal Energy Regulatory Commission and at DOE. DOE has created a working advisory committee on the reliability of the U.S. electric system, which will be considering whether efforts to date to maintain reliability are sufficient to provide assurance of reliability in the future, and whether there may be a need for increased federal authority over reliability in the future. NRC has been coordinating with DOE and will remain abreast of this effort and participate as appropriate. The Commission is carefully examining this issue and is planning two Commission meetings in March, the first meeting will focus on Grid Performance and Reliability, and the second meeting will address Electric Utility Restructuring, and will include a discussion of ISOs.

#### Decommissioning Funding

As I indicated earlier, as electric utility industry deregulation proceeds, the NRC needs to ensure that adequate decommissioning funding is available, whether nuclear plants operate to the end of their license terms or shut down prematurely. Moreover, since

deregulation may change the economic umbrella for some licensees, the NRC may need to monitor their financial qualifications more closely.

Most electric power companies have been economically regulated by the States through their Public Utility Commissions (PUCs). In initiating plans to deregulate these entities, the states and state PUCs have responded to consumer and other pressures for lower electricity rates by developing programs that ultimately will provide customers with a choice of suppliers for their electricity service. One of my initiatives has been to foster increased staff-level contacts between the NRC, as a health and safety regulator, and you as rate regulators, so that the States and the NRC can share thoughts about our respective roles. I believe that establishing this dialogue will allow the NRC to better understand the implications of the decisions you make, and to identify any safety issues that may flow from those decisions. These contacts are in addition to the Commission-level contacts that Commissioner Rogers has fostered so well for the NRC for several years. The NRC also will be examining its regulatory review processes so that we are prepared to respond to licensee requests in the most efficient and effective manner.

The NRC is aware of many options being discussed in the States to accomplish deregulation. For example, generation, transmission, and distribution assets may be spun off into subsidiary or fully separate companies (e.g., into "GENCOs," "TRANSCO," and "DISCO").

We expect to see a variety of hybrid ownership arrangements that go beyond the current, typically geographically defined, vertically integrated structures. States and the Federal Energy Regulatory Commission (FERC) are developing a variety of approaches to address the problem of above-market or "stranded" costs, including some nuclear plant capital and decommissioning costs. Remedies being considered include exit fees for customers leaving a company's system, transmission access fees for new bulk electricity sellers, and other transmission and wire charges. In some States, nuclear plant owners have been allowed to accelerate the depreciation of their plants, so that by the time full retail competition arrives, the capital costs of some nuclear plants will have been fully amortized. Without being specific about how nuclear "stranded" assets should be addressed by state public utility commissions or state legislatures, I will just say - it is important that our power reactor licensees continue to have sufficient resources to operate and decommission their plants safely.

In the Fall of 1995, I initiated a reevaluation of NRC policy regarding decommissioning funding. The NRC issued an advance notice of proposed rulemaking (ANPR) in April 1996, seeking

additional information on electric utility restructuring. The ANPR also explained that some additional decommissioning funding assurance might be needed for those power reactor licensees no longer subject to rate regulation by FERC or the State regulatory commissions.

NRC decommissioning regulations already have some built-in capability to address rate deregulation. Currently, our regulations allow only licensees meeting the NRC definition of "electric utility" to use the external sinking fund method of decommissioning funding assurance. "Electric utility", in this context, means any entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority. Investor-owned utilities, including generation or distribution subsidiaries, public utility districts, municipalities, rural electric cooperatives, and State and Federal agencies, including associations of any of the foregoing, are included within the meaning of "electric utility." Power reactor licensees that are no longer considered "electric utilities" within the current NRC definition will be required to provide some other method of assurance, such as a letter of credit or surety bond, for any unfunded balance of decommissioning costs. As indicated in the ANPR, the NRC believes that additional regulatory measures may be required. Regulatory changes might include eliminating any ambiguities in the NRC definition of "electric utility," and taking account of alternative methods of providing assurance of decommissioning funding - for example, pooled insurance, if available, or accelerated funding of decommissioning. The NRC staff currently is developing a proposed rule in light of the comments received in response to the ANPR.

The NRC has issued a Draft Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry. Standard Review Plans (SRPs) have been drafted in the areas of financial qualifications, decommissioning funding assurance, and antitrust reviews. These SRPs were issued for public comment on December 27, 1996. The public comment period will close on the Draft Policy Statement on February 9, and on the Draft Standard Review Plans on March 15. I hope you will take the opportunity to provide your views on these documents.

The draft policy guidance includes a discussion of our planned approach to future reviews. To reiterate what I have summarized in earlier speeches, the NRC will:

- (1) Continue to conduct financial qualifications, decommissioning funding, and antitrust reviews as described in the Standard Review Plans being developed in concert with the Policy Statement;

- (2) Identify all owners, indirect as well as direct, of nuclear power plants;
- (3) Establish and maintain staff-level working relationships with state and Federal rate regulators, including NARUC, FERC and the SEC;
- (4) Evaluate the relative responsibilities of power plant co-owners/co-licensees; and
- (5) Reevaluate our regulations for their adequacy to address changes resulting from rate deregulation.

We also are examining potential changes in reporting requirements with respect to decommissioning funding. In this regard, we have been tracking the work of the Financial Accounting Standards Board (FASB), for possible endorsement of an FASB reporting standard for decommissioning fund status. This information would include (1) the projected amounts needed; (2) the assumptions used in making the projections, such as inflation, interest, and discount rates; and (3) the amount of funds accumulated so far, plus the annual amortization amount. The NRC staff currently plans to develop a regulatory guide endorsing the proposed FASB reporting standard. We understand that FASB may defer the effective date of their standard for up to one year. If further delays appear likely to occur, the NRC will explore other options for reporting the status of decommissioning funds.

Because of the complexity of the proposed new business arrangements, and because of our concern about the timing of asset divestiture in relation to rate deregulation, we issued an administrative letter on June 21, 1996, informing licensees of their obligation, under our regulations, to report to the NRC any changes in ownership arrangements that would constitute a direct or indirect transfer of the license. It also included a reminder of their responsibility to advise us promptly of any information bearing on financial qualifications and the assurance of decommissioning funding.

The current regulatory framework provides us the authority to obtain the information we need in order to determine whether any restructuring actions are creating problems in operational safety, or in financial assurance for decommissioning. The issue we face is how to further strengthen our capabilities in these areas in response to rapidly evolving state and federal initiatives. As the ANPR and Policy Statement actions indicate, we intend to monitor these issues closely, to take whatever action is required in specific cases, and, as necessary, to modify our regulatory framework.

In closing, let me stress that our initiatives in these areas should not be construed as implying that we view economic deregulation as being inconsistent with adequate nuclear safety. It is not. My own view is that adequate protection of public health and safety is entirely compatible with a deregulated environment, provided economic restructuring of the electric utility industry addresses what is necessary for that protection. What I have outlined today are factors the NRC believes must be considered in this regard. Our primary concern is with safety, not economics. With sensible cooperation, where appropriate, among the NRC as safety regulator, FERC and the State regulatory commissions as rate regulators, and others with a stake in deregulation, I believe that the nation can continue to enjoy the benefit of safely operated, soundly regulated nuclear-generated electricity, along with the economic benefits of deregulation.

Thank you for the opportunity to address you. I wish you a very successful conference. I will be happy to respond to your questions.