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"NUCLEAR ENERGY AND ECONOMIC COMPETITION: THE NRC PERSPECTIVE"

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KEYNOTE ADDRESS TO THE
NUCLEAR ENERGY INSTITUTE
FUEL CYCLE '97 CONFERENCE

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Good morning ladies and gentlemen. I am pleased to be here today to address the Nuclear Energy Institute Fuel Cycle '97 Conference.

INTRODUCTION:

I know that your conference over the next three days will focus on many specific regulatory, economic, and technical issues of concern to those of you involved in the nuclear fuel cycle. Although I know that these specific issues, and their impact on your businesses and responsibilities, may be of greatest concern to you, I am pleased to see that the first session this morning is taking a broader look at the impact of the restructuring of the electric power industry on the nuclear industry worldwide.

Companies that are regulated do their business planning, not only within the context of market opportunities, but within the framework of the regulatory environments in which they operate. It is important, therefore, that regulators are straightforward and clear about what the regulatory requirements are, and how they might change. It also is important that regulators themselves interact, and coordinate their actions, within the law and their independent functions, as much as possible, to avoid duplicative or conflicting regulation. I have been asked to begin this session by sharing the views of the U.S. Nuclear Regulatory Commission (NRC) on electric power industry

restructuring, from the unique perspective of nuclear safety regulation.

Economic deregulation is bringing significant change to the electric power industry, but there are developments that may affect you in the nuclear fuel cycle arena directly. Let me take a few minutes to talk about some of the emerging issues that affect the nuclear fuel cycle, and that intersect with the NRC:

WEAPONS PLUTONIUM STORAGE AND DISPOSITION:

On January 14, 1997, the Department of Energy (DOE) issued its Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials. This, of course, is an issue that is of particular interest to those of you at this conference. In its Record of Decision, DOE stated that it has decided to implement a program for the safe and secure storage of weapons-usable fissile material (plutonium and highly enriched uranium), and a strategy for the disposition of surplus weapons-usable plutonium. DOE's strategy for the disposition of surplus plutonium is to pursue a dual approach that allows for (1) immobilization of surplus plutonium in glass or ceramic material, for disposal in a geologic repository; and, (2) burning some of the surplus plutonium as mixed oxide (MOX) fuel in existing domestic commercial reactors. DOE also is considering the feasibility of burning MOX fuel in CANDU reactors.

The Nuclear Regulatory Commission has a great interest in this program because it impacts at least three major areas that the NRC regulates -- commercial nuclear power reactors, fuel cycle facilities, and the high-level radioactive waste disposal facility. The NRC has been active in an evaluation of the proposed plutonium disposition alternatives since DOE's Record of Decision was issued. On January 27 of this year, the full Commission was briefed by the DOE on its plans for plutonium disposition. The DOE's strategy is predicated upon actions by the Russian government.

On February 21 and March 26, 1997, the NRC hosted technical exchanges in which representatives of the nuclear industry, including NEI representatives, made presentations on the use of MOX fuel in commercial reactors, and the fabrication of MOX fuel. Last month, I toured the DOE Fuels and Materials Examination Facility (FMEF) located on the Hanford reservation in the State of Washington. This facility is one of four that DOE has evaluated for possible use as the MOX fuel fabrication facility. Hanford also is one of the two key sites under consideration for the immobilization option, as well.

Clearly, the Commission recognizes the importance of this program to this country and to other nations around the world, as well as

the need to carry out the broader goals and objectives of the program successfully. After needed legislative clarification, the NRC intends to carry out our regulatory responsibilities in a manner that will avoid unnecessary delays or costs, but will be fully protective of public health and safety.

U.S. ENRICHMENT CORPORATION:

Another area of particular interest to this group began with the Energy Policy Act of 1992, which established the U.S. Enrichment Corporation (USEC) to operate the DOE gaseous diffusion plants in Piketon, Ohio, and Paducah, Kentucky. The Energy Policy Act of 1992 required the NRC to establish standards that would govern the gaseous diffusion uranium enrichment facilities owned by the Department of Energy (DOE). The Act also required that the Commission establish a certification process to ensure that the U.S. Enrichment Corporation (USEC) complies with those established standards.

As required by the Energy Policy Act, the NRC issued regulatory standards entitled "Certification of Gaseous Diffusion Plants," (10 CFR Part 76) on September 23, 1994. A complete USEC application for certification was received by the NRC on September 15, 1995. A proposed NRC certification decision was prepared and issued on September 19, 1996, and the actual certificates were issued to the USEC on November 26, 1996.

On March 3, 1997, the Nuclear Regulatory Commission officially assumed regulatory jurisdiction, from the DOE, over the USEC operations at the gaseous diffusion uranium enrichment plants at Paducah, Kentucky and Piketon, Ohio.

USEC PRIVATIZATION:

The next major milestone for the USEC was set into motion by the passage of the "The USEC Privatization Act," in April of 1996. This Act provides for the USEC to become a private corporation, and for a five-year certification cycle. The USEC currently is awaiting approval by the Administration to move forward with privatization.

The private sector entity that purchases the assets of the USEC will be responsible for the operation of the two gaseous diffusion plants, and the development, by the USEC, of any new uranium enrichment processes. The Act prohibits the issuance of a certificate of compliance to that entity if the Commission determines that:

(1) The entity is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government; or

(2) Issuance of a certificate would be inimical to the common defense and security of the United States; or

(3) Issuance of a certificate would be inimical to the maintenance of a reliable and economical domestic source of enrichment services.

The NRC staff submitted, for Commission approval, on December 19, 1996, SECY-96-258, "Direct and Final Rulemaking: USEC Privatization Act - Conforming Changes and Revision to the NRC Enforcement Policy (NUREG-1600)." With this paper, the staff proposed amendments to 10 CFR Parts 2, 40, 70 and 76 to bring them into conformance with the statutory requirements of the Act. The requirements for prohibition of issuance of a certificate, if the Commission makes any of the determinations described above, were proposed for incorporation as 10 CFR Part 76, Section 76.22, entitled "Ineligibility of Certain Applicants." The Commission approved this direct and final rulemaking.

The issuance of the initial USEC certification was based upon a finding of compliance with NRC standards to protect the common defense and security. Subsequent recertification of the USEC, or certification of a USEC successor, will be based on the submission of changes to the initial application, and a similar review process. This review will include the Commission's determination on foreign ownership, control or influence, the USEC's implementation of the Compliance Plans, and accumulated regulatory experience. The staff is preparing a standard review plan for recertification of the gaseous diffusion plants.

The NRC and the USEC are coordinating activities to ensure that the Privatization Act requirements are met, and to facilitate a smooth transition from operation as a government corporation to operation as a private corporation.

HIGH-LEVEL NUCLEAR WASTE:

One area about which all of us are concerned is the storage and disposal of high level nuclear waste. A satisfactory resolution of this issue is essential to the continued role of nuclear energy in this nation's overall energy mix. The Congress currently is considering nuclear waste storage and disposal legislation which would provide for the development of a centralized interim storage facility, as well as continued development of a deep geologic repository for disposal of high-level nuclear waste. The NRC supports an integrated national high-level nuclear waste management plan, with three fundamental elements -- interim on-site storage; centralized interim off-site storage; and deep geologic disposal of high-level nuclear waste, primarily spent fuel; together with a transportation mechanism to tie the three together. However, we believe that the overall

success of this country's high-level waste management program is dependent on finding a solution to the permanent disposal of high-level nuclear waste.

We already are examining our existing licensing capabilities and staff resources, relative to what would be required if we were called upon to license an interim centralized storage facility, as well as a deep geologic disposal facility. The NRC has issued Certificates of Compliance for several spent fuel storage casks which could be considered in the design of such a centralized storage facility.

I am confident that we can carry out, in a timely manner, the mandate of the Congress for the licensing of both an interim centralized storage facility as well as a deep geologic disposal facility, if reasonable schedules are established, and adequate resources are provided by the Congress. What is important now is that a decision be made as soon as possible on the direction of the Nation's high-level nuclear waste program, so that the nuclear power industry, the NRC and DOE can plan accordingly.

RESTRUCTURING OF THE ELECTRIC POWER INDUSTRY:

Having focused on some specific issues of interest to those of you associated with the nuclear fuel cycle, let me now turn to the broader issue of economic deregulation and restructuring of the electric power industry, and the NRC focus.

I think we would all agree that, when the Energy Policy Act of 1992 was passed, with provisions that enabled wholesale competition in electricity generation, most of us could not have predicted the speed with which the moves from wholesale competition to retail competition would occur. Orders 888 and 889 issued by the Federal Energy Regulatory Commission (FERC), and FERC's recent merger policies were major enabling actions for the economic deregulation of retail power markets.

The change to a competitive market for the electric power industry is certain to have long-term and far reaching consequences on how the nation produces and uses energy. This change will create some interesting challenges for the nuclear power industry. These issues include: safe nuclear operations, electrical grid reliability, availability of funds for decommissioning, and stranded costs. I would like to address these issues from the NRC perspective.

The NRC is not an economic or rate regulator, and you will be hearing from people this morning who do play an important role in those areas. However, the NRC, as the government agency responsible for the safety regulation of the nuclear industry, has an important function during this transition to a competitive

market, and the challenges it poses to the nuclear power industry. In this changing business environment, as organizations restructure internally, as ownership changes, as mergers occur, and as utilities work to control and reduce costs, the NRC must understand the effect on nuclear safety of these changes to the business environment. The structural changes and economic uncertainties that are driven by regulatory and market forces will determine how, and in what form, nuclear electric generators will continue to operate as economic deregulation continues to unfold. It is not the role of the NRC to dictate how the rules and legislative mandates undergirding economic deregulation change, nor is it our responsibility to prescribe how the electric power industry restructures. It <u>is</u> however, our responsibility to ensure that, as the business environment changes, economic pressures do not erode nuclear safety. We must do our job to see that nuclear electric generators continue to maintain high safety standards, with sufficient attention and resources devoted to nuclear operations, <u>and</u> with decommissioning funding secure.

SAFE NUCLEAR OPERATIONS:

<u>Assessment of Performance</u>

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, with new business arrangements, competition, and economic constraints, it is imperative that our assessment mechanisms detect any problems early.

While the overall safety performance of the U.S. nuclear power industry continues to improve, we have seen events at several reactor sites which have signaled to us that there is 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 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 a failure to identify and to correct promptly problems arising in areas that management viewed, not always correctly, as having low safety significance. The Commission has taken some action to respond to these signals. To ensure that the NRC can detect any safety degradations at other facilities, the staff has been asked to examine measures to identify plants where economic stress may be impacting safety.

The NRC also has issued 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."

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. NRC Senior Management Meetings (SMMs) are 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 have demonstrated weaknesses that warrant increased NRC attention, although such facilities always must operate in a manner that adequately protects public health and safety.

To improve the effectiveness of the Senior Management Meeting process, the NRC staff was asked to identify objective, meaningful, "leading" performance indicators of nuclear plant performance, and to identify an enhanced approach for monitoring and assessing licensee corrective actions. In the Summer of 1996, I asked the NRC staff to commission an outside study to evaluate the SMM process, to suggest improvements to 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 makes several recommendations, and proposes a methodology for using existing performance indicators in reaching SMM decisions. The Commission has tasked the NRC staff to evaluate the Arthur Anderson report in order to develop a methodology to more effectively use existing performance indicators in the NRC's decision making processes, with new risk-based indicators being phased in as they are developed.

Electrical Grid Reliability

Another area of concern to the NRC is electrical grid reliability, or security. NRC reviews in recent years have left no doubt that a Station Blackout at a nuclear power station is a major contributor to reactor core damage frequency. 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.

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. Nuclear plants are designed to withstand unexpected trips. However, events of this type cause unnecessary challenges to plant safety systems. Of course, the nuclear plants themselves are an important element of maintaining electrical network stability.

In reviewing these events, the Western Systems Coordinating Council listed the following contributing factors: high Northwest transmission loads; equipment out of service; inadequate maintenance of right-of-way; operation in a condition in which a single failure would overload parallel lines, triggering cascading outages; communication failures to neighboring utilities, prior to the disturbances; and no response to earlier events.

Therefore, from the perspective of a nuclear safety regulator, the NRC is convinced that economic deregulation must proceed with a sensitivity to, and an understanding of, the vulnerability of nuclear plants to Loss-of-Offsite-Power events. This means that transmission network governance structures must reflect that standards of performance, operational criteria, and training of personnel are critical oversight issues, which all must be factored in, and properly addressed, as deregulation proceeds. Whatever form network governance structures assume, their authority needs to be strong enough to assure that these considerations are enforced.

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 (FERC), and at the Department of Energy (DOE). The DOE has created a working advisory committee on the reliability of the U.S. electric system. NRC has been coordinating with the DOE, and will remain abreast of this effort, and will participate as appropriate.

This month the Commission has scheduled two public meetings on aspects of electric power industry restructuring. The first meeting, on April 23, 1997, will focus on Grid Performance and Reliability, and the second meeting, on April 24, 1997, will address Electric Utility Restructuring, and will include a discussion of independent system operators (ISOs). These meetings will bring together representatives of the nuclear power

industry, as well as economic regulators, from both the federal and state governments. Our goal is for the Commission, and the public, to have an opportunity to gain an understanding of where we are on the road to economic deregulation and industry restructuring. More specifically the goal of the NRC is to explore the safety questions, and to ensure that we are taking the right actions, at the right time, in the appropriate manner.

DECOMMISSIONING FUNDING:

Another important concern for the NRC as electric power industry deregulation proceeds, is the availability of adequate decommissioning funding for nuclear plants, whether they operate to the end of their license terms, or shut down prematurely. Moreover, since deregulation may change the economic umbrella for some of our licensees, the NRC may need to monitor their financial qualifications more closely.

Most electric power companies have been regulated economically by the States through their Public Utility Commissions (PUCs). In initiating plans to deregulate these entities, the states and state PUCs have responded to pressures from consumers and others for lower electricity rates by developing programs that, ultimately, will provide customers with a choice of suppliers for their electricity service. As these changes unfold, it is critical that the NRC understand the changes and that, as appropriate, we provide an understanding of safety concerns to the agencies responsible for economic regulatory decisions. One of my initiatives has been to foster increased staff-level contacts between the NRC, as a health and safety regulator, and federal and State economic regulators (including FERC and NARUC), so that we can share thoughts about our respective roles.

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

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 suppliers, and other transmission or "wires" 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. Companies also are exploring securitization of stranded costs, in those states where the remedies such as exit fees, and transmission access fees have been established.

Although it is not the responsibility of the NRC to determine how nuclear "stranded" costs (assets) should be addressed by state public utility commissions or state and Federal legislatures, it is our responsibility to make clear that it is essential that our power reactor licensees continue to have sufficient resources to operate and decommission their plants safely. That responsibility includes taking regulatory action, where appropriate, if the issues lie within our jurisdiction, and, if warranted, to weigh in on legislative initiatives under consideration by the Congress.

In order to ensure NRC readiness to respond to issues flowing from restructuring, I initiated a reevaluation of NRC policy regarding decommissioning funding in the Fall of 1995. 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. 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 <u>additional</u> 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. Changes also may be required in reporting requirements with respect to decommissioning funding. In light of the comments received in response to the ANPR, the NRC staff

currently is developing a proposed rule, which is expected to be before the Commission for consideration in May, 1997.

The NRC also 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 staff currently is finalizing these documents, with consideration of public comments.

The policy guidance includes a discussion of our planned approach to future reviews. Under the planned approach, the NRC will: continue to conduct financial qualifications, decommissioning funding, and antitrust reviews; identify all owners, indirect as well as direct, of nuclear power plants; evaluate the relative responsibilities of power plant co-owners/co-licensees; and reevaluate our regulations for their adequacy to address changes resulting from rate deregulation.

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. The letter included a reminder of our licensees' 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 <u>authority</u> 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 <u>strengthen</u> 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, including the promulgation of a rule on decommissioning funding.

As I have stated, it is not the responsibility of the NRC to determine the structure of the electric power industry. It <u>is</u> important that the NRC not be influenced in making safety regulatory decisions by the need to lower the cost of operating a nuclear plant. However, it is the responsibility of the NRC to meet fully its health and safety mission within the most efficient and effective regulatory framework possible -- one that

is efficient and effective for both the NRC and the nuclear energy industry. The NRC and the nuclear energy industry have been working together to remove unnecessary regulatory requirements through such programs as conversion to improved Standard Technical Specifications for nuclear power plants, marginal-to-safety rule changes, and the implementation of Regulatory Review Group recommendations. These recommendations include expedited review of cost-beneficial licensing actions, and the development of guidelines that would permit licensees to implement changes to, or reduce commitments in, quality assurance programs, emergency preparedness plans, and security plans without prior NRC review and approval, as long as the underlying regulations are met. We have continued the movement toward risk-informed, performance-based regulation through the development of a PRA Regulatory Guide, PRA Standard Review Plan, 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. We will continue to identify opportunities for improvements to the regulatory process and framework.

In closing, let me reiterate that the NRC will continue to take seriously its responsibility as a safety regulator. I firmly believe that ensuring safety is in no way inconsistent with economic deregulation and competition. 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 power industry addresses what is necessary for that protection. What is essential is that those responsible for economic deregulation recognize the safety implications of change, and that those of you in the nuclear energy industry recognize that there are no economic short cuts to safely operated, economically viable nuclear generation. The many players who have a role in the interesting and challenging environment of electric power industry restructuring -- including the NRC as safety regulator, FERC and the State regulatory commissions as rate regulators, and you in the industry -- must work together, and must understand each other's concerns in order to ensure that we will 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.