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"NRC MOVES INTO THE 21ST CENTURY -  
DEVELOPING A COHESIVE, PUBLICLY ACCEPTABLE  
REGULATORY FRAMEWORK FOR DECOMMISSIONING"

BY

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TO

THE SECOND ANNUAL  
NUCLEAR DECOMMISSIONING DECISIONMAKERS' FORUM  
LANSDOWNE EXECUTIVE CONFERENCE CENTER  
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#### INTRODUCTION

Good morning, ladies and gentlemen. It is a pleasure to have this opportunity to address the "Second Annual Nuclear Decommissioning Decisionmakers' Forum" here at Lansdowne. I have been looking forward to meeting and sharing with you some of my thoughts on the decommissioning of nuclear facilities and related topics.

Some of you may recall that during my confirmation hearings before the U.S. Senate earlier this year, I listed decommissioning activities as one of my concerns and an issue on which I intended to focus during my tenure as Chairman of the Nuclear Regulatory Commission.

Nothing has occurred during my first six months as Chairman that has caused me to alter my earlier views on this issue. Decommissioning continues to be an area of considerable importance to the NRC and one that will require vigilant efforts on the part of the NRC and its licensees to ensure that subsequent decommissioning and decontamination activities are carried out in a manner that protects the public health and safety.

Since decommissioning of nuclear facilities, whether they be reactor or materials facilities, will be a significant activity of the Nuclear Regulatory Commission as we move into the 21st century, it is imperative that the NRC (1) establish appropriate radiological standards for decommissioned facilities that will provide adequate protection of the public health and safety; (2) promulgate regulations that assure that adequate funds are available to decommission and decontaminate a facility at the end of its useful life; and (3) perform the decommissioning and decontamination reviews with a cost-efficient and streamlined approach.

The theme of this year's Nuclear Decommissioning Decisionmakers' Forum is the "evolving infrastructure, regulatory regimes, and technologies" for decommissioning or decontaminating commercial and Federal facilities. Today, I would like to talk to you about NRC's regulatory regime for decommissioning and decontamination and how it evolved over the past decade, where we at the NRC are today in this field, and where I expect us to be as we enter the 21st century.

#### PAST EXPERIENCE

Let me start with some historical perspective. Over the past couple of decades, the owners of an increasing number of power plants, fuel cycle facilities, and other operations involving radioactive materials have decided to terminate licensed activities, either because the facilities have reached the end of their useful life or other pressures have forced their premature shutdown. As a result, decommissioning issues have received increased attention from the NRC. This was not always the case. From the inception of the agency in 1974, and into the 1980's, decommissioning was perceived as a simple cleanup task that could be accomplished safely with minimal NRC oversight. In those days, the NRC was focusing primarily on establishing a regulatory framework to ensure safe uses of radioactive material.

Unfortunately, the "simple" task of decommissioning turned out to be too simple. NRC was not always applying consistent cleanup criteria; and, once the criteria were set, in some cases, the agency did not do a very good job of checking to ensure that all of the criteria were satisfied. In addition, a number of sites that faced technically challenging and expensive remediation were allowed to languish and to defer cleanup indefinitely. These sites were perceived as posing a low-risk to the public and were given a low-priority within the agency. However, through the 1970's and 1980's, the threshold of acceptable risk to the public and the environment decreased. Accidents like TMI and Chernobyl brought increased attention to radiation standards. Accordingly,

the levels of residual radioactivity at nuclear sites began to receive increased scrutiny both within and outside the agency.

## PRESENT

Where are we today, in 1995, with regard to decommissioning and decontamination? Well, despite the obstacles, progress is being made in the decommissioning of both materials facilities and nuclear reactors; but there is room for improvement.

### Materials Sites

Let me start with the decommissioning and decontamination of the facilities of our materials licensees; that is, all of our licensees other than nuclear reactors. In 1989, the General Accounting Office (GAO) issued a report that was critical of NRC's oversight of decommissioning materials facilities, and a Congressional hearing was held. The GAO found that there were no federal standards for acceptable levels of residual radioactivity after decommissioning and that some sites were released from a license with contamination levels above NRC guidelines. Review procedures were inadequate. NRC was unsure whether radioactive contamination that exceeds regulatory standards existed at the tens of thousands of sites whose licenses had already been terminated since the 1950s.

In responding to the Congressional hearing, the NRC developed the Site Decommissioning Management Plan (or the SDMP) in 1990, and has taken a more aggressive approach to decommissioning since then. This plan provides a mechanism for ensuring increased NRC oversight of a number of problematic sites. Over the last 5 years, the SDMP has become the cornerstone of NRC's policy and technical efforts to develop a decommissioning program for materials facilities. The majority of the issues affecting the timely and safe decommissioning of contaminated facilities identified by the NRC staff, and in the 1989 GAO report and Congressional hearings, have been resolved and are being translated into guidance for routine implementation by licensees and NRC. Nevertheless, as a 1995 GAO report points out, progress in decommissioning facilities is not proceeding as expeditiously as planned despite the progress in resolving regulatory issues. The limited access to waste disposal facilities and high costs of waste disposal, litigation and coordination among interested parties, to mention a few causes, have slowed or even stifled progress in decommissioning nuclear facilities of all types.

Nevertheless, some progress is being made. Two sites have recently been removed from the SDMP list; these were the United Nuclear Corporation site in Rhode Island and the United Technologies/Pratt and Whitney site in Connecticut. In addition, decommissioning actions are moving forward and are essentially completed at other SDMP sites. We are gradually removing any doubts that formerly licensed sites are still contaminated above release criteria by completing reviews of licensing records and, in some cases, on-site radiological surveys. On the whole, we are finding that past licensee actions and oversight have been effective in protecting the public -- out of tens of thousands of formerly licensed sites, only some tens of sites have been found to be contaminated in excess of current criteria. I intend to closely monitor future progress in the decommissioning of sites and their ultimate removal from the SDMP list.

### Reactors

Turning to reactor decommissioning, in 1988, the NRC amended its Part 50 regulations addressing reactor decommissioning to ensure that both adequate funds and a plan were available for decommissioning nuclear facilities. These new regulations were based upon assumptions about future decommissioning scenarios that did not develop as expected.

One significant assumption was that reactors would continue to operate until their licenses expired and that decommissioning plans would be prepared and approved well in advance of permanent cessation of operations allowing decommissioning to be implemented in an orderly and efficient manner. Contrary to this assumption, nearly all the reactors that have reached the decommissioning mode entered the process prematurely, shutting down prior to the expiration date of the license.

And of the power reactors that have embarked on decommissioning, only Shoreham has proceeded through the entire process to license termination. Fort St. Vrain is currently undergoing the final phases of dismantlement and termination surveys, and it is anticipated that the license will be terminated in late 1996. (I understand that Mr. Clegg Crawford of Public Service Company of Colorado, who I met with just last week and who heads up the decommissioning activities at Ft. St. Vrain, is scheduled to talk to you this afternoon). Eight reactors are in SAFSTOR (Rancho Seco, Vallecitos, Humboldt Bay, Indian Point 1, Peach Bottom 1, LaCrosse, Dresden 1, and San Onofre 1). Yankee Rowe and Trojan have undergone major component removal, and the licensee for Big Rock Point 1 submitted the plant's Decommissioning Plan for NRC review several years prior to permanent shut down of the facility. The Big Rock Point decommissioning plan is currently under staff review.

Regarding the issue of what decommissioning activities should be allowed without prior NRC review and approval, experience since 1989 has shown that decommissioning activities have small inherent risk and are comparable to many activities which licensees of operating reactors are permitted to undertake without prior NRC approval under 10 CFR 50.59. This gave rise to a Commission decision in early 1993 that allowed licensees who were decommissioning reactors to perform large component removal activities under 10 CFR 50.59 prior to approval of the decommissioning plan specified by the 1988 NRC regulations.

Although the Commission in 1993 determined that the Atomic Energy Act did not provide for mandatory hearing opportunities associated with decommissioning plan approval, the staff sought public involvement in decommissioning by publishing notices soliciting public comments and by holding public meetings to explain the nature of the decommissioning regulatory process and to hear concerns raised by the public. Both the large component removal activities prior to the approval of a decommissioning plan and the lack of hearing opportunities were challenged in court by a citizens group petitioning for a mandatory hearing on the decommissioning of the Yankee Rowe facility in western Massachusetts. This past July, the United States Court of Appeals for the First Circuit issued a decision unfavorable to the NRC decisions on these matters. The Commission decided not to appeal the decision and has offered a public hearing in the Yankee Rowe case as well as the Trojan plant when staff evaluations of decommissioning plan are completed. The lesson learned is that the public wants to be involved in the decommissioning process, even if the risk to public health and safety is small.

In parallel with the court case, the NRC published proposed amendments to the decommissioning rules for public comment on July 20, 1995. The Commission believes that the proposed amendments would enhance the efficiency and uniformity in the decommissioning process for nuclear power reactors. The proposed amendments provide opportunities for public participation in the decommissioning process and furnish licensees and the public with a better understanding of the process as operating personnel at a nuclear power reactor undergo the transition from an operating to a decommissioning organization. These rule revisions would reduce regulatory burden while providing greater flexibility for implementing decommissioning activities. The current schedule for Commission review of the proposed final rule is mid-1996.

#### Radiological Criteria for Decommissioning

An important aspect of all successful regulatory programs, and the decommissioning program is no exception, is having fair, consistent, and cohesive regulatory requirements. As I had

previously mentioned, the Commission put in place general requirements for decommissioning nuclear facilities in 1988. These regulations addressed decommissioning planning needs, timing, assurance of the availability of funds for decommissioning, and environmental review requirements. What the regulations did not include were the acceptable levels of residual radioactivity for decommissioned facilities. As you are aware, the rulemaking for establishing these criteria was initiated in 1992 and has become known as the "Enhanced Participatory Rulemaking". Coming on the heels of the Commission's ill-fated policy statement on Below Regulatory Concern, the Enhanced Participatory Rulemaking is one attempt to learn from past mistakes and to conduct a rulemaking process that is inclusive and constructive.

NRC initiated this effort through a series of workshops and scoping meetings held across the country during which NRC discussed the scope, issues, and alternative approaches to the rulemaking. The discussions involved a broad cross-section of interests, including the Environmental Protection Agency, industry, States, local government, Native Americans, academia, vendors, civic and environmental groups, environmental justice organizations, and other Federal agencies. The workshop and scoping discussions were used in the preparation of the proposed rule that was published in August 1994. During the comment period, NRC conducted additional workshops on site characterization for decommissioning and on public participation in planning and conducting decommissioning. The current schedule for this rulemaking provides for Commission review of the rulemaking package early next year.

As part of the development of the rulemaking guidance, the NRC is also conducting pilot demonstrations of the proposed survey and statistical methods that would accompany the new rule. A demonstration was conducted at the Yankee Rowe Nuclear Power Plant in mid-1995 for the assessment of contamination by gamma emitting fission products (for example, Co-60). Another demonstration is currently being conducted for open land areas contaminated by uranium, which can be especially difficult to detect at low levels because it also occurs naturally in the environment. The target concentration of uranium to detect in this second demonstration is about 1 pCi/g above background. We will consider the results of these pilot demonstrations when evaluating how to implement the limits on the proposed decommissioning rule.

To date, the Enhanced Participatory Rulemaking has demonstrated the importance of meaningful and timely public involvement in establishing decommissioning criteria. NRC is committed to seeking meaningful and efficient ways to involve and inform the

public about decommissioning to facilitate timely, constructive, and coordinated progress.

#### Decommissioning Financial Assurance - Reactors

Another major challenge in the decommissioning arena for both the nuclear industry and the NRC is ensuring adequate financial assurance for decommissioning both nuclear reactors and materials facilities. You might be surprised to hear that NRC is concerned about financial assurance at reactors. For years, many of us have assumed that a continued stream of resources would not be a problem for operating electric utilities. However, this may be changing as a result of deregulation in the power industry, premature shutdown, and other corporate developments.

The NRC's requirements pertaining to financial assurance for the decommissioning of nuclear power reactors are contained in our regulations. In accordance with these regulations, the NRC allows power reactor licensees, who are defined as "electric utilities" under 10 CFR Part 50, to set aside funds annually over the estimated life of the reactor. Electric utilities have the capability to collect funds through their ratepayers, as allowed by public utility commissions.

The U.S. Federal Energy Regulatory Commission and several State Public Utility Commissions (for example, California and Michigan) have initiated policy changes that would, over the next several years, deregulate at least some aspects of how utilities provide electrical service. This may change the environment within which these utilities will conduct their business in the next millennium. I recognize that deregulation will cause some of these utilities to transform themselves to survive in the new deregulated environment and that these changes may affect utilities with nuclear reactors. In fact, tomorrow, the Commission will have a public meeting to discuss this very subject with the Chairman of FERC, a member of a public utility commission, an electric utility company Chief Executive Officer, and a representative from a major investment firm.

Some utilities have established generating subsidiaries to operate their nuclear plants. If the utility parent remains on the operating license, or otherwise commits through operating agreements or other mechanisms to pay safety-related costs, including decommissioning, there should be no serious concern that decommissioning funds will be unavailable. However, as deregulation proceeds, both plant operators and co-owners may reduce or eliminate their links with affiliated electric utilities.

Another consideration, that should be kept in mind when evaluating the level of financial assurance that should be in

place to permit decommissioning, is that decommissioning cost estimates could escalate due the large uncertainties related to the low-level waste and final site survey costs. In addition, premature shutdown of the plants could result in an earlier need for decommissioning funds than had originally been forecast, so that the sinking funds may not be adequate to cover decommissioning costs at the time of shutdown.

There appears to be no immediate safety concern with the current wave of corporate and utility reorganizations, particularly since the NRC has sought and received commitments that licensees will notify the NRC when significant assets are transferred from a licensee to its non-licensed parent company. However, in the long-term, trends in deregulation and reorganization may cause power reactor licensees to have smaller asset bases and reduced recourse to decommissioning cost recovery through rates approved by either the Federal Energy Regulatory Commission or State Public Utility Commissions. This would be contrary to the assumptions underlying the Commission's decision to allow regulated electric utilities to rely on more liberal financial assurance methods, such as an uninsured external sinking fund for providing decommissioning funding assurance.

The Commission is evaluating the need to revise NRC regulations to address the potential uncertainties with respect to the availability of decommissioning funds based on the impact of deregulation of the power generating industry.

#### Decommissioning Financial Assurance - Materials

Reactors are not the only nuclear facilities where financial assurance for decommissioning is a concern. In 1988, the NRC promulgated decommissioning financial assurance requirements for both reactors and non-reactor facilities. The objective of these requirements was to place the cost of decommissioning on the licensee who received the principal benefit from the use of nuclear materials. Since the 1988 rulemaking, NRC has gained greater insight into financial assurance matters through several difficult licensing cases and bankruptcy actions.

Some licensees that have substantial volumes of contaminated materials from previous operations have had difficulty providing the necessary financial assurance. And some licensees never anticipated having to pay such large decommissioning costs and did not accumulate the requisite funds during operations. Again, this has been aggravated by rapidly escalating waste disposal costs throughout the 1980s and early 1990s. Consequently, licensees find their sites listed on the SDMP today because their ability to finance decommissioning appears extremely limited. In a few cases, the NRC finds itself in a dilemma between allowing a licensee to continue operating -- even though the licensee cannot

provide the necessary financial assurance -- and shutting the licensee down by revoking or suspending a license only to transfer the cost of decommissioning to the Superfund and taxpayers.

I have recently been reviewing this matter in an effort to identify how the NRC can best ensure protection of the public in situations where the resources to do so do not currently exist and how the NRC can ensure that licensees with adequate resources do not intentionally funnel the assets away from their liabilities for decommissioning. These complex situations will continue to receive my close attention.

#### FUTURE - INTO THE 21ST CENTURY

So what might the NRC be doing for the rest of this decade and into the 21st century? From the start, we will have to recognize that resources will be reduced and that we must pursue more efficient approaches that ensure protection of the public and environment. The NRC must absorb a ten percent budget cut in fiscal year 1996, and all indications from Congress are that, in subsequent fiscal years, we would expect a continuing downward trend in available funding. Within this tighter fiscal environment, it becomes more critical to prioritize our activities, while working to help the Congress and the Office of Management and Budget to understand our core mission and all the essential elements of that mission.

Although I believe that the NRC has earned its reputation as the foremost nuclear regulatory body in the world, we still need to be guided by a strategic vision. The strategic vision embodies an awareness of our mission and the mandatory bases of our mission, an ability to respond to a changing environment, including assumption of possible new elements into our mission, and continuing and enhancing effectiveness in our regulatory activities -- with a firm health and safety basis. This strategic vision undergirds our regulatory approach, and allows us to develop and maintain appropriate programmatic focus and to conduct appropriate resource planning, including personnel, technology, and budget planning.

In line with the elements of the strategic vision, I have initiated a strategic assessment and rebaselining at NRC. This initiative does not have as its primary objective the achievement of a preferred "numbers" outcome. The resource "numbers" are being driven by the Office of Management and Budget (OMB) and the Congress in the context of the budget, not the strategic assessment and rebaselining initiative.

The first phase of the initiative, the "strategic assessment," involves identifying and examining the sources of the mandates that make up our regulatory mission--statutes, executive branch directives, and Commission decisions--so that we can establish a common understanding of the NRC mission and what is required of us. Also included in this phase is a process of looking at agency activities to determine whether they are being conducted in response to a specific mandate or whether these activities have some other rationale for their existence, and whether there are areas where we should establish programs to implement a specific aspect of our mission. This phase is, as the title implies, essentially a review, categorization, and assessment. This phase is also meant to begin to surface key strategic issues, questions, and decision-making points to be addressed by the Commission. This first phase will be coming to a conclusion early next year.

The subsequent phases--rebaselining and strategic planning--will address what our programmatic needs are and what resource levels should be assigned to them. The first phase drives and provides input to the following phases and ultimately to budget and human resource planning, which is the final phase. This review is necessary to position us to meet the challenges we face effectively and to guide intelligently our activities and decision-making in the future.

As for new missions in the next century, one that comes to mind immediately for this audience is that the NRC is one of the agencies being considered by an advisory committee formed by the Department of Energy to examine the need for external regulation of nuclear safety at DOE facilities. If this responsibility is assigned to the NRC, it would add significantly to our current regulatory responsibilities. The concern that I would have with taking on such an added responsibility would relate to the transition planning needed for the regulatory staff to assume the oversight responsibilities of DOE facilities. That is why it is important that adequate resources, above our baseline budget for regulating commercial nuclear facilities and materials, be provided to accompany any new responsibilities. In addition, the new responsibilities must be phased in over a period of time so as to provide sufficient time to hire, develop, and retrain competent experts needed to conduct safety reviews in licensing and inspection of complex facilities.

Regardless of the final decision on this matter, the NRC is committed to work with DOE and the Congress, provided sufficient resources are made available, to implement the programs necessary to ensure the protection of workers, the public, and the environment. One thing is certain -- stabilization and decommissioning of the weapons complex will require a sustained effort throughout the 21st century and beyond and will draw upon

this country's technical, financial, and political resources if it is to be accomplished efficiently and safely.

#### CONCLUSION

Although NRC has done a great deal to address the issues that confront the agency and the nuclear industry, we need to do more to ensure that we have positioned ourselves to prepare for changing missions and budget, deal with economic pressures being faced by the nuclear industry, and improve the regulatory framework. This is especially true in emerging fields, such as nuclear facility decommissioning. By asking the right questions and focusing the NRC staff's and industry's attention on new approaches to the key issues, I believe that I can position the NRC to meet its public health and safety responsibilities more effectively in the 21st century.

Thank you for your attention. I would be pleased to answer any questions that you might have at this time.

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