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THE IMPACT OF LICENSE RENEWAL ON THE NUCLEAR POWER PLANT INDUSTRY

Good morning, ladies and gentlemen. I am delighted to be here in Newport, Rhode Island for the American Nuclear Society's Executive Conference on management in the nuclear industry. Today I would like to address an issue I believe is of paramount importance, nuclear power plant life extension.

The older nuclear power plants operating in this country are facing expiration of their original operating licenses and industry has noted that a 10- to 15-year lead time is necessary to plan for license renewal or alternative new capacity. One of the key issues for industry is knowing the NRC's requirements for license renewal up front in order to make reasonable determinations regarding the pursuit of license renewal versus some other means of replacement power. Therefore, the nuclear industry urged the NRC to develop standards and procedures for license renewal early on so that utilities would know what would be required to obtain a renewed operating license.

I firmly believe that license renewal is key to the viability of the nuclear power industry over the next 20 - 30 years, since without the possibility of license renewal, there may not be enough time left in the plant's license to amortize some of the capital improvements needed to complete the first 40 years. Hence, without license renewal, not only will some reactors not outlive their original 40 years, but plants will close early when faced with costly capital projects.

To give you some background, the NRC's research program on the degradation of nuclear power plant systems, structures, and components due to aging began in the 1980s. One of the

conclusions drawn from this program was that many aging phenomena are readily managed and do not pose major technical issues that would preclude life extension, provided that necessary ameliorative measures such as maintenance, surveillance, repair, and replacement are implemented effectively.

NRC's final rule on license renewal (10 CFR Part 54) issued on December 13, 1991 marked the successful completion of five years of intensive work by the NRC staff and industry on this very important regulatory issue. The license renewal rule is based on a regulatory philosophy containing two key principles:

(1) First, with the exception of age-related degradation unique to license renewal and possibly some few other issues related to safety only during extended operation, the regulatory process is adequate to ensure that the licensing bases of all currently operating plants provide and maintain an acceptable level of safety for operation.

(2) Second, each plant's current licensing basis must be maintained during the renewal term, in part through a program of age-related degradation management for systems, structures, and components that are important to license renewal.

The NRC will ensure that a plant's licensing basis is maintained during the renewal term by continuing its many regulatory oversight programs and by requiring that additional programs or corrective actions be implemented when necessary to manage effectively age-related degradation unique to the period of extended operation.

DOE originally funded lead plant applications for the Yankee Rowe and Monticello facilities. As you all know, both lead plants have cancelled or deferred their license renewal efforts for plant-specific reasons. As it turns out, the "lead plant" approach was probably not the most effective one because both the utility and the NRC became focused on plant-specific issues which had very little to do with the concept of license renewal. As I will discuss later, the staff's approach is now more focused on resolving issues in a more generic manner.

Since Part 54 was promulgated--particularly over the last six months-- the NRC staff has put forth a commendable effort to develop a process for its implementation. Significant policy issues regarding implementation of the rule were identified and an NRC senior management review group was formed to address key issues. Of these issues, the most difficult were integration of the license renewal and maintenance rules, and the clarification of the overall scope of the rule. The NRC staff's review has

culminated in two papers now pending before the Commission which present the staff's proposed process for implementation of the license renewal rule.

I believe the NRC staff has developed a process for implementation of the license renewal rule that is technically sound and balances the interests of both safety and economics. The staff reaffirmed the rule's two key principles as well as the appropriateness of the current focus of what must be examined before a renewed license is issued. With the exception of the National Environmental Policy Act requirements, the license renewal focus is on the effective management of aging effects on the performance or condition of important plant structures and components during the renewal term.

The license renewal rule requires each applicant to perform an Integrated Plant Assessment (IPA) to demonstrate that those plant systems, structures, and components (SSCs) which are important to license renewal have been identified and that, for structures and components that could be affected by age-related degradation unique to license renewal, this degradation will be managed adequately. Recognizing that the Integrated Plant Assessment is the central action to implement the rule, the NRC's approach focuses on identifying the most effective IPA approach.

The first step in the IPA portion of the rule is to identify those SSCs that are important to license renewal. The rule then requires the applicant to determine whether those structures and components required for the functioning of SSCs important to license renewal could have age-related degradation unique to license renewal. It is at this point that the staff's proposed approach begins to diverge from some of the specific language of the statements of consideration associated with the rule.

The staff's proposed approach is based on the premise that most of the structures and components identified as important to license renewal <u>could</u> have age-related degradation that is unique and would not be screened out of the IPA at this stage. Instead, the staff is proposing that structures and components that could have age-related degradation unique to license renewal be addressed by an effective program that ensures identification and mitigation of age-related degradation. In effect, this approach renders moot the question of whether a structure or component is subject to age-related degradation unique to license renewal provided an effective program exists.

The "effective program" approach, as I will refer to it, gives the applicant credit for work performed during the original license term, including work done to comply with the maintenance rule. This approach recognizes that performance or condition monitoring can be relied upon to demonstrate that aging effects are being effectively managed and controlled. The staff believes

that an effective program can be demonstrated with minimum additional documentation from an applicant if the structure or component is covered by regulation or the facility's technical specifications, with specified acceptance criteria for performance or condition.

The NRC staff has recently revised its thinking regarding which structures and components require an effective program. The rule requires a licensee to demonstrate that structures or components that could have age-related degradation unique to license renewal are either: 1) addressed through an effective program, or 2) need not be addressed in an effective program. The staff is now proposing a graded approach that includes three methods for treating these structures and components. The first method requires effective programs for those structures and components of fundamental safety importance. Effective programs covering these structures and components would have to meet the requirements of the rule regarding identification and mitigation of age-related degradation unique to license renewal, acceptance criteria, inclusion in facility operating procedures, and review by the on-site review committee. The second method recognizes that no effective program is needed to manage age-related degradation such that the current licensing basis is maintained throughout the license renewal term. The third method proposed by the staff addresses structures and components that are not determined to be of fundamental safety importance. For these structures and components, the staff would accept current licensee programs demonstrated to ensure compliance with the current licensing basis. These programs would have to be described in the license renewal application, but would not need to meet the specific requirements for an effective program as described in the rule.

These three methods allow for a greater number of structures and components to be screened out at an earlier stage and reduce the burden on licensees regarding the effective program requirements of the current rule.

For those of you familiar with 10 CFR Part 54, you may be aware that the "effective program" approach proposed by the staff does not necessarily follow the order of tests in the IPA portion of the rule. The staff is currently developing possible solutions to address this issue. One of the possibilities is the development of clarifying amendments to the rule to address the departure of the proposed alternative approach from the Commission's explanation of its intent and understanding of how the rule would apply in the original statement of considerations. The NRC's General Counsel is in the process of drafting its position on the need for a rule change.

The NRC has held public meetings with the industry on the issue of license renewal rule implementation. The industry has expressed concerns with the alternative approach proposed by the staff including: 1) the legal defensibility of the proposed approach because it does not satisfy the literal language of the statement of considerations, 2) the amount of information required to be submitted to the NRC as part of the renewal application, and 3) the administrative burden associated with implementation of the license renewal programs. In order to allow industry comment and provide an opportunity for public participation, the staff is recommending issuance of further guidance on the proposed alternative implementation approach. The staff has developed two papers currently pending before the Commission which explain the staff's proposed alternative approach to implementation of the rule. In addition, the General Counsel is in the process of developing recommendations for the Commission regarding the necessity for a rule change. The staff's recommendation is that the Commission publish these for notice and comment so that all interested parties have a chance to provide input on the license renewal implementation process.

Let me talk a little about some of the specific projects ongoing outside of the rule implementation. As a result of the experience with the "lead plant" approach, recent industry efforts have focused on a more generic approach to license renewal. The Babcock & Wilcox (B&W) Owners Group has started discussions with the NRC on a license renewal program for B&W design facilities. The B&W strategy is to develop a screening methodology and other generic elements to resolve key issues for a group of similar plants. The Owners Group has submitted its methodology for identifying structures and components important to license renewal and their functions. A submission of a license renewal application from a member plant in fiscal year 1997 is one of the objectives of this program.

The Baltimore Gas & Electric Company (BG&E) has also asked the NRC to review its proposed program to implement the license renewal rule. BG&E has submitted its methodology for screening structures and components that are important to license renewal, including implementing procedures. This methodology has been used on four plant systems and the results of the screening have been given to the NRC.

Further NRC action to revise 10 CFR Part 51 to enhance the agency's environmental review process associated with reactor license renewal is underway. The final revised rule is scheduled for publication in 1994. A number of environmental issues previously identified for generic consideration in the proposed rule will be reclassified to require plant-specific analyses. This is expected to increase the effort required to complete environmental reviews associated with license renewal

applications compared to the draft Part 51, but will still represent enormous savings compared to individual environmental impact statements.

I would like to commend the NRC staff for its efforts over the past year to develop a process for implementation of the license renewal rule which provides assurance that the continued operation of nuclear power plants beyond their initial 40-year lifetime is not inimical to the public health and safety. At the same time, I believe that we must make every effort to ensure that this process will provide the nuclear power industry with a stable and predictable option for renewing nuclear power plant licenses. It is our intent to keep the industry and the public informed of any proposed changes to the license renewal process to ensure that the interests of all parties are heard and addressed.

As I stated before, license renewal is key to the viability of the nuclear power industry over the next 20 years. Many of you in the audience today have a vested interest, as does the Commission, in helping to ensure that a stable, predictable, and reasonable regulatory process exists within which a licensee can consider whether or not to submit a license renewal application. The next few months will determine whether that process is successful. I hope that I have given you some food for thought over the next few days. Thank you for the opportunity to share my thoughts with you.