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SAFETY AND ECONOMICS FROM A REGULATORY POINT OF VIEW

Good morning, ladies and gentlemen. I am delighted to have been invited to address the luncheon meeting of the 1993 Nuclear Energy Forum, to talk about some NRC initiatives to find economical ways to improve the safety of nuclear facilities.

Obviously, the outlook for the nuclear industry depends strongly on its ability to remain competitive in the electricity marketplace. To remain competitive, we realize that the economic performance of nuclear power plants must improve while still assuring plant safety. The main path to economic performance is to increase output faster than costs increase, by prudent investment and forceful management. But it is obvious that costs in certain areas will also have to be reduced.

The NRC is taking actions to improve the safety of nuclear facilities in a prudent and efficient manner. These include our efforts to reduce regulatory burden, our attempts to focus our attention on the poorer performers, and our continuing work towards providing a clear and well defined license renewal process.

The Commission took a big step in January when we established a Regulatory Review Group. The Group examined the feasibility of substituting performance-based regulation for existing prescriptive requirements. They identified regulations and implementing guidance that would be amenable to performance-based techniques. Reducing regulations with marginal safety

impact actually would increase safety since this would allow management to focus their attention and resources on more safety-relevant problems. The group also identified a number of generic technical subject areas for regulatory action, for several of which rulemaking activities are already underway.

I think we have only scratched the surface -- many additional generic opportunities remain. For instance, industry estimates that providing flexibility in areas such as quality assurance and safety-grade procurement could produce savings in the hundreds of millions of dollars each year. In addition, our improved Standard Technical Specifications will reduce reporting and record-keeping burdens. We will keep looking for ways to extend this effort to other NRC programs.

The staff has also been reviewing plant-specific applications as part of their complete examination of the current regulatory framework. A leading utility in submitting plant-specific changes is Virginia Power. Through their own review at their Surry and North Anna plants, Virginia Power has been able to identify changes to numerous requirements that they believe are marginal to safety, 11 of which have already been approved by the NRC, for a net savings that they estimate at more than 16 million dollars for 1993 alone; annual savings in the future should be even greater.

Other changes will direct the NRC inspection effort more to the poorer performing licensees. One such change is the reduction in the number of SALP¹ functional areas to four (operations, maintenance, engineering, and plant support) in order to provide a more balanced weighting of the safety significance of the various SALP areas. This and other SALP changes will enable the NRC to focus its attention on significant issues, especially where poor performance is identified, and help us to communicate the results of our assessments to the licensee quickly and precisely. Another initiative allows licensees to conduct their own assessment of issues that the NRC would normally review via a major NRC team inspection. The NRC will audit the licensee's assessment -- the better the licensee's record, the less detailed the audit; for plants with good records, this will lead to a much smaller NRC presence as compared to a major NRC team inspection.

License renewal is also a crucial economic area. Most plants are quite a few years away from reaching the end of the 40-year license term. However, for a utility to decide whether

¹Systematic Assessment of Licensee Performance, the overall evaluation that the NRC performs every 18-24 months of each reactor licensee.

to make a significant capital improvement in a 25 year old plant, they need to know whether that investment will be amortized over a 35-year span or only over the 15 years remaining in the license term. Without the possibility of the longer life span the utility may feel it has no choice but to shut down rather than devote additional funds to meeting safety requirements.

The NRC staff over the past year has developed a more practical process for implementing the license renewal rule, proposing to shift the focus away from the evaluation of aging mechanisms themselves, and towards the programs which manage the effects of those aging mechanisms.

This approach reverses the order foreseen in the license renewal rule -- the utility would first see if an effective program exists; only if none exists would they need to evaluate the untreated effects of age-related degradation.

The staff's proposed amendment to the rule is expected at the end of the month.

However, the current economic program undertaken by the nuclear industry also has a dark side. I'm referring to the potential for adverse safety impacts as a result of increasing economic pressures. Management must ensure that the message sent to their staff to improve economic performance is properly interpreted by everyone in the nuclear organization. There is evidence that some measures directed toward efficiency are being misinterpreted throughout the management chain.

At a recent evaluation of plant safety performance the first line supervisors and plant staff were "working around" the accumulation of equipment problems, and a growing backlog of maintenance problems, in order to reduce costs. This was based on a message, perhaps unintended, from top management. The expense of restoring degraded plant equipment and reestablishing an operating culture which does not compromise on safety will far exceed any earlier short term savings.

We have also seen evidence that operations staffs feel great pressure to keep the plant on line. Another plant recently became vulnerable to a non-isolable small loss of coolant accident when a small steam leak in a reactor coolant system valve received a temporary leak injection type repair -- a more permanent repair would have required plant shutdown. Any proposed temporary repair associated with reactor pressure boundary or engineered safety features must receive the highest level engineering scrutiny and be brought to senior management's attention. The NRC will be paying close attention to the review and implementation of such temporary repairs.

I believe the industry must also take responsibility for improving the performance of the poorer performing, or more specifically the bottom quartile, plants. The gap in performance between the poorer performers and top performers is much too large, and needs to be reduced. Those utilities operating the better performing plants need to communicate their strategies more openly and effectively to utilities struggling to improve the safety and reliability of their plants. By working together to improve the performance of these plants, the stronger utilities can help to close the gap, thereby improving significantly the outlook for the future of the nuclear industry.

An ongoing issue that is of serious concern to the NRC is the handling of employees who raise safety concerns. The NRC has placed a high value on employees in the nuclear industry being free to raise potential safety issues to their management and, if that fails, to us. It is clearly in the public interest for employees to raise safety issues, since over the years the NRC, the regulated industry, and the public have benefitted from the issues raised by employees of licensees and their contractors. In addition, we think it is also in industry's interest that such concerns be identified and promptly addressed. Although most of the employees who raise issues to their management or submit allegations to the NRC do so without retaliation, there are cases where retaliation has occurred, and this is simply not acceptable.

As a result, we have established a task force to review the NRC's handling of harassment and intimidation complaints and to recommend changes to our process where deemed appropriate. However, to solve the problem it is not enough to punish intimidators -- the industry must take the responsibility to prevent discrimination from occurring in the first place, by establishing an environment where employees feel free to raise issues without fear of harassment and intimidation. We at the NRC will be more aggressive in the future in our handling of utilities that allow harassment and intimidation to exist in the work place.

I would like to take a moment to turn to some of the recent initiatives occurring in the nuclear materials program. NRC has entered an era of increased interaction with the States and the public in general on nuclear materials.

We are developing a new program evaluation approach for Agreement States which we intend to implement beginning next year. The core performance indicators are expected to include both the traditional programmatic indicators as well as output indicators such as medical misadministrations, lost radioactive sources, overexposures, and contaminated sites. These core performance indicators could be used in the development of an

annual integrated materials safety evaluation for each Agreement State and each NRC regional office.

One major Agreement State and NRC program is medical licensing. Our goal is to ensure that members of the public receive adequate radiation protection during medical procedures without undue interference by us in the practice of medicine. We recently completed a preliminary study of possible alternatives to the current regulatory structure for medical uses of radiation. The bottom line was that we don't have the information to determine if there is, in fact, a health and safety problem. The study also found no great desire either to expand or curtail the scope of our jurisdiction, in spite of the basic inconsistency in our regulating therapeutic radiation from cobalt devices but not from linear accelerators.

You may be interested in the recently released National Performance Review Report from the Vice President and how NRC measures up. This study, in my opinion, is an extraordinary effort to get to the bottom of what it takes to make our government work better. The report is based on four principles: 1) **Cutting red tape**, which for us involves a shift from prescriptive to performance-based management; 2) **Putting the customer first**, in our case, the customer is both the general public and the regulated community; 3) **Empowering employees to get results**; and 4) **Cutting back to basics**, which means abandoning the obsolete, eliminating duplication, and cutting costs.

I believe we are already doing rather well in implementing these principles, especially the first and second, but there is more we can do in all areas. I've already talked about our efforts at making our regulation less burdensome to the licensees.

With regard to putting the customer first, the Commission has repeatedly stressed how critical it is to the future of nuclear energy that we act and make our decisions in an open atmosphere that will engender public confidence in our actions. In an attempt to be responsive to the public at large, we have conducted workshops in a wide variety of regulatory areas. This practice will continue.

Our weakest area of performance falls under empowering employees to get results. We have a lot of work to do in decentralizing decision making and reducing layers of supervision. The staff is looking very aggressively at the various layers of management with the idea of consolidating small subunits throughout the agency. We are also looking at ways to improve our information technology systems.

In connection with the final principle, the NRC has embraced the concept of "Eliminating what we don't need." For example, we are combining activities in two of our regions to reduce overhead, closing the Uranium Field Recovery Office in Denver, and looking at centralization of certain functions at Headquarters that now are the responsibility of the regions. We will keep up our search for more efficiency in our operations.

Finally, I'd like to report on a topic that many of you have worked on. I have just returned from a trip to the Former Soviet Union and Eastern Europe and have both good and bad news to report. The good news is that there has been progress in the short term risk reduction initiative for the Soviet-designed reactors. The bad news is that the long term goal of closing the least safe plants is going to be difficult. The program of western nuclear safety assistance developed at the 1992 G-7 Munich Summit was intended to reduce the risk from the worst reactors, but not to extend the life of these reactors indefinitely. However, it is difficult to draw a fine, bright line between near-term safety upgrades and improvements which could encourage an operator to think in terms of long-term life extension. The Russians seem to think that with the short-term improvements their job is done; we think it is just beginning.

In conclusion, the NRC has taken the initiative to provide for a more economical, yet safer nuclear industry and to improve the nuclear materials program. However, it is up to the nuclear industry to ensure nuclear energy and nuclear materials are a part of the future. With the industry taking the responsibility for establishing a more efficient method of operation and bringing the poorer performers up to par, not only will the industry be perceived more favorably by the public, and an improvement in economic performance of the plants be achieved, but safety will also be enhanced.