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Remarks by
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United States Nuclear Regulatory Commission
by telephone to the
Harvard Electricity Policy Group
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Good afternoon, ladies and gentleman. I am delighted to be able to participate, even if from afar, and look forward to discussing the important topic of nuclear power in the competitive environment with Messrs. Bradford, Gilinsky, and Dellsy.

The NRC takes its paramount responsibility for ensuring nuclear safety at the 107 operating nuclear plants very seriously. These plants continue to be among the safest and best run in the world and generate about 20% of the nation's capacity.

The most important effect of competition is the discouragement of capital investment, a development favoring gas over both nuclear and coal. More generally, the outlook for the nuclear industry depends both on the ability of utilities to compete in the changing electrical generating market and on the industry's continuing to operate the current plants safely.

Economic competition should not necessarily cause nuclear performance or safety problems. In fact, we find generally that the plants with the lowest generating costs also are recognized among the best safety performers. The majority of nuclear safety problems are concentrated in a relatively small number of plants that are known to be poor performers. With increased competition there are two possibilities on either end of the future performance spectrum:

- A utility can use the competition as a compelling reason to improve its financial status, while at the same time improving nuclear safety operation. This utility stands to benefit both in the market place and from reduced NRC inspection activities.

- A utility can take a penny wise but pound foolish approach, achieving short term economic benefits, while causing safety problems or a decline in performance. Negative performance trends could be caused by reduced staffing below required levels, failure to maintain safety equipment properly, or failure to identify and correct problems due to capital constraints. When a decline in safety performance is identified the NRC will allocate needed inspection resources and take the actions necessary to ensure public health and safety.

With heightened competition looming large, the industry has reached a point where a high level of safety performance must be directly coupled to improved economic performance. In the next 20 years there will be plenty of demand for new power generation in the U.S., even at 1-1 1/2% demand growth. If nuclear power is to continue as an important part of that picture, I believe that three conditions must be met:

- 1) utility management and the NRC must continue to ensure that the current plants are operated safely,
- 2) utility management and the state regulators must make decisions that ensure the economic viability of nuclear plants, and
- 3) the federal government must develop an effective way to store high level nuclear waste.

To meet these objectives licensees, the NRC, the PUCs and the federal government have very specific responsibilities.

Utilities

As licensees face increased economic pressures they must not lose sight of their primary and absolute responsibility for nuclear safety. Clearly competition with replacement power is key to business survival, but it is putting tremendous pressure on utilities, pressure that did not exist before. This pressure comes from increased involvement of state PUCs in financial affairs, from non-utility generators, from state and federal proposals for electricity pricing on the open market, and from bond rating agencies that are concerned about stranded investments.

As part of cost containment, numerous utilities across the country have undertaken programs to reduce their incremental operation and maintenance costs. An O&M reduction or increase needs to be looked at from the point of view of how it affects nuclear safety, not just its effect on incremental costs and/or capacity factor. It is clear that for older plants, O&M and new

incremental capital costs play much more important roles in generating costs. For newer plants O&M is not as important since the repayment of the larger debt depends greatly on capacity factor.

Fundamentally, the industry needs to continue its efforts to remain at all times technically safe, to use good judgement to make sound economic decisions, and to maintain strong organizational and management oversight of activities. The goal must be to provide the capital and human resources to improve economic performance, increase output and reduce overall costs, while maintaining nuclear safety.

NRC

The NRC needs to remain a strong and independent regulator, focusing attention on the poorer performing plants, while reducing the regulatory load on the lowest risk performers. The agency needs to provide clear assessments of licensee performance and when necessary take prompt and effective action when safe operation is jeopardized. The NRC can also reduce costs to licensees by using risk-based regulation and changing regulatory policy, while not impacting safety. The agency needs to be prepared for inevitable license renewals as well as the possibility -- at least in the longer term -- of a licensee taking advantage of the new one-step licensing process for a new plant.

As we compare the safety performance at the nation's nuclear plants one to another, there is a layer of superior performance, a layer of good performance and a layer of weak performance. This type of distribution is not surprising. What is surprising is the magnitude of safety performance difference between the weakest and the strongest. As plants with performance problems are identified through our inspection process, we bring appropriate actions to bear to correct the decline in performance.

To integrate the different assessments of the NRC staff, a systematic assessment of licensee performance or SALP is conducted for each plant on a frequency of between one to two years. In this process licensees receive performance ratings in the areas of plant operations, maintenance, engineering, and support activities. We endeavor to make these ratings as objective and realistic as possible. These ratings are used by the NRC staff as a critical measure to determine proper allocation of inspection resources. Plants that receive superior ratings in a given SALP period, absent any indication of performance decline, will receive fewer inspection hours. Plants that exhibit weaknesses will receive more inspection hours.

The NRC program to reduce regulatory burdens that do not provide clear nuclear safety dividends has had some tangible benefits. Changing current regulations to a risk-based approach and removing regulations that do not have a substantial benefit to nuclear safety reduces the cost of regulation and allows appropriate focus on the tasks having greater safety significance. One major area of success has been in the reduction of technical specification requirements. In the last two years licensees have requested and received nearly fifty changes, resulting in estimated savings of over \$275 million over the remainder of the original licenses. Another area under review is to reduce the requirements of reactor containment leak testing, which has the potential for shortening outages while not causing any safety problems.

I firmly believe that license renewal is the key to the viability of the nuclear power industry over the next several decades. The older plants are facing expiration of their original 40 year operating licenses. However, the useful life of these facilities may be substantially longer. The possibility of a plant receiving a 20 year extension to its license becomes important in a financial sense as capital improvement and debt recovery terms are reviewed. At present licensees must retain access to capital funds to deal with the current and potential future problems with aging equipment to ensure acceptability of license renewal. The NRC is endeavoring to have a clear and predictable license renewal process in place to allow utilities to determine the best use of their capital.

The Commission has regulations in effect to cover the one-step licensing of a new plant. This one-step licensing process provides for the use of pre-approved designs. The NRC has recently approved two new designs which are based on current designs modified by advanced features that improve safety. The Commission staff continues to review two other new designs that feature passive safety systems which can safely respond to events without the availability of electricity on the site.

The one-step approach would allow quicker NRC approval, and reduce construction time, costs, and the possibility of intervention before operation begins. However, given the forecast for generating needs, the possibility of interstate transmission of current capacity, and the financial environment, I frankly don't see a new plant being ordered in this country in the near term. I must note that other countries, particularly in the booming Pacific Rim, continue to build nuclear plants viewing this as a way to lessen their dependance on imported fossil power.

PUCs

PUC involvement has made good economic sense -- and I do not dispute the value of least cost planning and prudence approaches. In recent years State PUCs have been very active in decision-making regarding additional electrical generation needs and on establishing rate recovery packages. This has led to PUCs having inspectors at reactor sites reviewing the decisions of plant management and to detailed processes for least cost planning and prudence reviews. PUCs are trying to get the most generation capacity out of current assets, before approving new construction, while making sure that utilities spend their money with the best interests of the rate payers in mind.

State PUCs need to be judicious in their actions. But with the current price of natural gas and the competitive, anti-investment environment, I worry that PUCs and utilities may conclude that neither coal nor nuclear power is economically viable. This could be disastrous for the country if for some unforeseen reason gas and oil prices shoot up. The country will need a mix of sources available, including nuclear. A balanced portfolio would ensure that the national needs are not put in jeopardy by unexpected developments at home or abroad.

On a more technical point, to the degree that PUCs allow nuclear utilities to accelerate and recover depreciation, even with a lower Return on Equity, the utilities will be that much more competitive once real competition begins.

Federal Government

The conundrum of the safe disposal of high and low level nuclear waste needs to be resolved. The Federal Government must develop a viable plan for the centralized storage and/or disposal of high level nuclear waste. This would include the 85,000 metric tons of reactor fuel either currently stored at reactor sites or anticipated to be discharged by the 107 operating reactors during their 40 year license period. All parties involved in both the public and private sector see this as an urgent problem. Continued delays in siting and developing a centralized spent fuel storage facility and high-level waste repository can only serve to add significantly to the costs and regulatory burden of nuclear power plant operators, to the detriment of their competitive stature.

The Department of Energy's new strategy, termed the program approach, shows promise in demonstrating real progress in determining whether the Yucca Mountain, Nevada, site is technically suitable as a high level waste repository. DOE's current schedule envisions making the suitability determination in Fiscal Year 1998 and, assuming the site is suitable, submitting a license application to the NRC in Fiscal Year 2001.

The safe disposal of low level waste also has become an issue with the closure of the Barnwell site to most utilities. For example, estimates of decommissioning costs for Yankee Atomic's Yankee Rowe plant recently increased by 94 million dollars in part due to the lack of access to a low-level waste facility; Massachusetts will not have an operational low-level waste site until 2003. Costs are high but not strategically so - in other words, increases in decommissioning costs should not affect the future of nuclear power one way or another. Although measurable progress is being made in Texas and in the Southeastern and Central Compacts, overall progress towards siting and development of low level waste disposal facilities in State compacts and individual States has been disappointingly slow. Nevertheless, even with access to a low-level waste facility costs can range to hundreds of dollars per cubic foot of material. This problem is on the way to solving itself, even if expensively and too slowly.

CLOSING

Looking toward the future, in today's environment the current plants need to continue to prove themselves in order to overcome negative public and political perceptions. Utilities and State PUCs need to develop sound financial plans to ensure that economic structure is well established and supportable for the replacement of aging generating capacity.

Nuclear power can continue to be a safe and environmentally advantageous method of generating power into and through the next century. At this point, the future at least partly depends on the ability of electric generating industry safely to overcome the unprecedented economic pressures that lay ahead. Of equal importance, ironically, is that the future may hold a situation where "the tail wags the dog" in that how and when the Federal government and utilities resolve the pending problems of storage and disposal of spent fuel may, in the end, determine the viability of the nuclear power option.

I am optimistic that the utilities, the NRC, and the State PUCs can work together to address issues related to competition and maintaining the safety of nuclear power. In addition, I am also encouraged that the recently renewed resolve shown by Congress and the Department of Energy to address the spent fuel storage and disposal issue will lead to a safe and timely solution.

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