

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Title: NPOC BRIEFING ON THE STATE OF THE NUCLEAR INDUSTRY

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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NPOC BRIEFING ON THE STATE OF THE

NUCLEAR INDUSTRY

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PUBLIC MEETING

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Nuclear Regulatory Commission

One White Flint North

Rockville, Maryland

Wednesday, May 10, 1989

The Commission met in open session, pursuant to notice, at 10:00 a.m., the Honorable LANDO W. ZECH, JR., Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

LANDO W. ZECH, JR., Chairman of the Commission

THOMAS M. ROBERTS, Member of the Commission

JAMES R. CURTISS, Member of the Commission

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary  
WILLIAM C. PARLER, General Counsel

FOR THE NUCLEAR POWER ASSEMBLY

JOSEPH M. FARLEY, Chairman, NPA  
J. PHILLIP BAYNE  
JAMES J. O'CONNOR, Chairman, NPOC

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P R O C E E D I N G S

(10:03 a.m.)

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CHAIRMAN ZECH: Good morning, ladies and gentlemen.

Commissioners Carr and Rogers will not be with us today.

This morning we'll hear from members of the Nuclear Power Oversight Committee. They will brief the Commission concerning the state of the nuclear industry from their perspective.

This meeting is scheduled as part of the annual Nuclear Power Assembly. This year's theme for the Nuclear Power Assembly is "The Future is Now". These are formative times in the nuclear industry. I believe this title is reflective, to a large extent, of where we are today. We are setting the stage today for the future of nuclear energy in our country.

We, at the NRC, see significant and sustained improving trends in the safety performance of the nuclear industry. Virtually every indicator of safety performance that this agency routinely monitors has continued to improve since I made this same observation at our last meeting in May of 1988.

The NRC continues to recognize that these are gross measures of safety performance, and there are

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1 nuclear utility leaders whose performance significantly  
2 exceeds the industry average that we are monitoring. On  
3 the other hand, there remains areas for continued  
4 improvement, in my view, for most plants and, in some  
5 plants, for significant improvement.

6 The industry challenge today, as I see it,  
7 remains the same as it was last year -- to continue to  
8 safely operate the current generation of nuclear power  
9 plants in order to assure the viability of the nuclear  
10 option in our country for future generations.

11 The challenge for the future is to be second to  
12 none in safety performance. In my view, U.S. reactors  
13 should be leading the world in performance; many of them  
14 are right up at the top. I'd like to see them all at the  
15 top.

16 I believe that our nuclear reactors, our  
17 nuclear power plants, can do this and can remain at the  
18 top, and it behooves all of us to do our part to bring  
19 that about.

20 In this regard, the Commission has recently  
21 issued a new and historic rule on early site permit  
22 standardization and combined license for nuclear power  
23 plants. We believe that this new method for licensing  
24 nuclear plants will provide the stable and predictable  
25 licensing process that's needed to enhance public

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1 participation in the licensing process, while setting the  
2 stage for the next generation of nuclear power plants in  
3 our country.

4 Mr. Farley, Mr. O'Connor, Mr. Bayne, we welcome  
5 each of you as leaders of the United States nuclear  
6 industry. We appreciate very much your being with us  
7 this morning and providing us with your views concerning  
8 the state of the industry and the readiness of the  
9 industry to renew and continue its commitment to the use  
10 of nuclear energy to meet our nation's future energy  
11 needs.

12 Do any of my fellow Commissioners have any  
13 opening comments they'd like to make before we begin?

14 (No response.)

15 If not, Mr. Farley, you may proceed, and  
16 welcome, again, gentlemen.

17 MR. FARLEY: Thank you, sir.

18 Good morning, Mr. Chairman and members of the  
19 Commission. I'm Joe Farley, Executive Vice President of  
20 the Southern Company and also Chairman of this year's  
21 Nuclear Power Assembly. We appreciate your taking the  
22 time to meet with us for this annual state-of-the-  
23 industry discussion.

24 This is a special occasion. It is, I regret,  
25 the last time we will brief the Commission with Admiral

1 Zech sitting in the Chairman's seat. I know that Admiral  
2 Zech set this agency on a new and orderly course.  
3 Through his leadership, the agency's first five-year plan  
4 was developed. He has brought to the agency a sense of  
5 order and direction, and it is important that he presided  
6 over the consolidation of the NRC staff into this one  
7 building.

8 On a more recent note, it was on his watch that  
9 the NRC, as the Chairman has noted, has undertaken to  
10 develop standardization of plant design and improved  
11 licensing procedures, initiatives that set the stage for  
12 real progress for the industry.

13 As you all know, America's nuclear plants are  
14 safer, more reliable, and more efficient today than they  
15 were ten years, or even five years ago. Admiral Zech  
16 deserves credit for some of that improvement.

17 During his tenure as Chairman, he has visited  
18 every U.S. nuclear plant. He has never tired of driving  
19 home a few simple truths -- the need for discipline, for  
20 accountability, for attention to detail in all aspects of  
21 plant operations. He has achieved what few regulators  
22 achieve. He has managed to create a tone and a climate  
23 that inspires excellence.

24 Let me share with you what one shift supervisor  
25 at the Monticello plant said after a visit from the

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1 Chairman, and I quote. "He pointed out how important we  
2 are to this country, how we keep the lights on and the  
3 nation running. He called us the unsung heroes",  
4 unquote.

5 Admiral, I know you place great stock in what  
6 you call leadership involvement. On behalf of this  
7 industry, I'd like to thank you for your leadership over  
8 these five years.

9 CHAIRMAN ZECH: Thank you very much.

10 MR. FARLEY: Now to the subject at hand. As I  
11 reflect on industry developments over the last year, I am  
12 struck by what a mixed picture this is. Six new nuclear  
13 plants began commercial operation. In 1988, nuclear  
14 energy generated 527 billion kilowatt hours of  
15 electricity -- a 15-percent increase over the previous  
16 year, and an all-time record for any country -- and we  
17 needed every kilowatt hour we could get.

18 You will remember that many parts of the  
19 country recorded demand for electricity that wasn't  
20 expected until the early to mid 1990s. On top of that,  
21 the performance of America's nuclear power plants  
22 continued to improve in virtually every category--  
23 reliability, availability, and general operational  
24 quality. That's the good news.

25 Unfortunately, there's a big dose of bad news

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1 to go along with it. Last year, the decline in America's  
2 energy security continued unchecked. Domestic production  
3 of crude oil dropped. Oil consumption increased. To  
4 fill the gap, imports of oil rose to 37 percent of our  
5 nation's needs. Oil imports accounted for more than 30  
6 percent of our \$120 billion trade deficit, a crime in a  
7 country blessed with so many energy resources.

8 At the same time, construction of new electric  
9 power plants is at a 15-year low, yet demand for electric  
10 power continued to increase, and this growth already  
11 threatens reliability of electric service in some  
12 regions.

13 Since 1982, growth in electricity demand has  
14 averaged 3.6 percent per year, much higher than expected.  
15 Unfortunately, the amount of generating capacity under  
16 construction can sustain electric demand growth of only  
17 about 1 percent a year.

18 These trends, rising oil imports and rising  
19 electric demand, met increasingly with imported fuels,  
20 may combine in the early 1990s to produce another energy  
21 crisis and another nasty shock to this nation's economy.

22 Electricity, particularly nuclear electricity,  
23 has played an important role in cutting our dependence on  
24 oil since the 1973 oil embargo. Today, this progress  
25 toward energy independence is in jeopardy.

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1            Obviously, America's utilities will do what  
2 they must to meet future electricity demand, but unless  
3 the regulatory obstacles standing in the way of new  
4 nuclear and coal-fired capacity are removed, the industry  
5 will be forced to reactivate older oil-fired power  
6 plants, which were put on stand-by over the last 15 years  
7 as new coal and nuclear plants entered service. And if  
8 utilities use oil to meet electricity demand, their  
9 consumption of oil will triple by the mid-1990s, from  
10 about 500,000 barrels per day to over a million and a  
11 half barrels per day.

12            Against this background, let me introduce my  
13 two colleagues who will discuss what must be done to  
14 ensure the continuing viability of today's nuclear  
15 plants, and the continued growth of nuclear energy in the  
16 U.S.

17            First, Phil Bayne, President of the New York  
18 Power Authority, will provide some perspective on nuclear  
19 regulation. Then Jim O'Connor, Chairman and CEO of  
20 Commonwealth Edison and Chairman of the Nuclear Power  
21 Oversight Committee, will discuss the outlook for nuclear  
22 power.

23            Phil?

24            MR. BAYNE: Thank you, Joe.

25            Good morning, gentlemen. It's a pleasure to be

1 here. Before I go any further, I want to endorse Joe  
2 Farley's remarks about Chairman Zech's efforts over the  
3 last five years, in pressing the industry to perform  
4 better and in reorganizing this agency, consolidating it  
5 under one roof, and establishing a five-year plan with  
6 clearly defined goals. Mr. Chairman, you have made a  
7 measurable difference.

8 CHAIRMAN ZECH: Thank you.

9 MR. BAYNE: In a few minutes, Jim O'Connor from  
10 Commonwealth Edison, will give you his thoughts on what  
11 should be done to ensure expanded use of nuclear energy  
12 in this country but, first, I'd like to share my  
13 suggestions, and those of my colleagues, on what we can  
14 do to ensure that today's plants remain viable,  
15 economical, and productive assets.

16 Let me briefly review some recent history. The  
17 1979 accident at Three Mile Island was, of course, a  
18 watershed event in the history of commercial nuclear  
19 power in the United States. It led to the creation of  
20 the Institute of Nuclear Power Operations, the National  
21 Academy for Nuclear Training and the Nuclear Safety  
22 Analysis Center at EPRI. It forced sweeping changes in  
23 practices, procedures, training, operations, inter-  
24 company communications and, most important, in attitudes.

25 Ten years ago, our nuclear utilities were

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1 isolated, many doing their own thing in their own way.  
2 There was no systematic way of sharing operating  
3 experience or learning from the experience of others. We  
4 were not consistent in tracking abnormal events and  
5 examining them for generic significance. That has  
6 changed.

7 Ten years ago, only control room operators had  
8 formal training and that was not uniform. There were  
9 only 12 control room simulators in the country, and most  
10 plants operated with only three or four shifts of  
11 operators which, as you know, meant too much overtime and  
12 too little refresher training.

13 Today, the number of professional training  
14 personnel is eight times what it was ten years ago.  
15 We've increased the amount of space devoted to training  
16 almost sixfold. The number of simulators is up from 12  
17 to 71, with 14 more scheduled for operation in the next  
18 three years. And most plants now have five or six full  
19 shifts of control room personnel, so that one shift is  
20 always in refresher training.

21 Equally important, control room operators  
22 aren't the only ones now receiving formal training.  
23 Eleven general categories of nuclear plant workers--  
24 that's maintenance, engineering and other support  
25 personnel -- get formal training.

1           Thanks to all of these changes, the commercial  
2 nuclear industry today is better organized, more  
3 disciplined, more systematic in identifying and tracking  
4 problems, and it also performs at a much higher level,  
5 which is reflected clearly in the performance indicators.

6           At the risk of telling you what you already  
7 know, let me dash quickly through a few of the key  
8 indicators. Capacity factors have improved. Last year,  
9 our nuclear plants operated at 65.1 percent capacity  
10 factor, which was up three percentage points from the  
11 year before.

12           The number of unplanned automatic shutdowns, a  
13 measure of safety and reliability, is declining steadily.  
14 In 1980, U.S. nuclear plants averaged 7.4 scrams; last  
15 year they averaged 2.1 per unit.

16           Unplanned safety system actuations are down  
17 significantly, from 1.3 per unit in 1983 to 0.8 per unit  
18 last year.

19           There have been many other gains. Lost-time  
20 accident rates are down. Radwaste production is down.  
21 Plant efficiency, as measured by heat rate, has improved  
22 markedly. And radiation exposures among the work force  
23 are declining.

24           In short, the efforts of the Nuclear Regulatory  
25 Commission and the nuclear industry over the last ten

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1 years have paid off. We are clearly on the right track.

2           Having said that, however, and with all due  
3 respect for the work of this agency and the skilled,  
4 competent people who serve at NRC, I must raise a  
5 disquieting note.

6           We in the industry are troubled by some of the  
7 trends we see emerging in the area of regulation. I  
8 would be remiss if I didn't share these concerns with  
9 you.

10           Before I go any further, I want to be sure you,  
11 and others, understand that we, in the industry, do not  
12 contend that we have arrived. Like you, Mr. Chairman, my  
13 background and training were in the nuclear Navy, and I  
14 think one of the most important lessons we learned from  
15 Admiral Rickover was that nuclear power requires special  
16 attention and special care. With nuclear operations, you  
17 never arrive. As with all aspects of life, whenever you  
18 start thinking you're pretty good, that's a good time to  
19 ask yourself whether you're as sharp as you would like to  
20 be or ought to be.

21           This industry is not as good as it will be. We  
22 still have plants and managers that do not perform well,  
23 as well as they can and as well as they should, but we've  
24 made progress, significant progress, and I don't want to  
25 lose sight of that.

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1           With that as a background, let me turn to  
2 someof the areas of concern. We perceive that increasing  
3 numbers of rules and procedures are being imposed on the  
4 basis of staff opinion, without benefit of rigorous  
5 analysis and review. We are concerned that the  
6 Commission or its staff is proposing too many new and  
7 unneeded requirements. In short, we perceive a growing  
8 lack of regulatory stability.

9           Let me cite a couple of examples. One involves  
10 the number of bulletins and generic letters issued by  
11 this agency in the last decade. The trend is  
12 disconcerting.

13           As might be expected, the number of bulletins  
14 jumped drastically in 1979 and 1980 but, between 1981 and  
15 1987, the number of new bulletins trended down as  
16 utilities worked off the backlog of TMI-related  
17 requirements, but last year the number of new bulletins  
18 just about quadrupled. The same trend holds true with  
19 NRC generic letters.

20           It's not only the number of bulletins and  
21 generic letters that concerns us. There is a perception  
22 that the staff may be using many of these bulletins and  
23 generic letters, rather than the normal regulatory  
24 process, to impose new requirements that go beyond  
25 established rules and regulations.

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1           This would be a dramatic reversal in NRC  
2 policy, and I'd suggest there is no evidence of safety  
3 concerns that would justify it. I acknowledge that this  
4 industry has some poor performers who should and must be  
5 called to account, but we, the industry, through INPO,  
6 have the means to get their attention, and you, the  
7 Commission, have the mechanisms to discipline the  
8 laggards. There is no reason to lay an ever larger  
9 burden on the entire industry, especially the majority of  
10 plants and companies that are performing well.

11           Last month your staff conducted a regulatory  
12 information conference at which many of the presentations  
13 focused on the NRC's inspection, evaluation and generic  
14 communication programs. In each of these areas,  
15 attendees discerned a staff belief that it is necessary  
16 to push well beyond the normal regulatory bounds in  
17 oversight and direction. Many team inspection programs  
18 were discussed which were not compliance-based. Simply  
19 said, there is a perception that staff is attempting to  
20 regulate to a standard that is not clearly defined and  
21 has not been subject to scrutiny and comment.

22           At the same conference, industry performance  
23 data was presented that was similar to that which I cited  
24 earlier. So, too, were results of the NRC's evaluation  
25 of the industry.

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1           Aggregate SALP ratings are flat or declining in  
2 the face of mutually acknowledged industry performance  
3 gains. The number of enforcement actions resulting in  
4 civil penalties is up by more than 50 percent from what  
5 it was in '84 and '85. Again, the perception is that  
6 plants are being evaluated on a scale that is rising, but  
7 without the benefit of the formal regulatory process.

8           Let me turn to an issue which we have addressed  
9 before, the pending rulemaking on maintenance. It would  
10 place a new burden on the entire industry when data shows  
11 that problems are isolated and involve only a few plants.  
12 And the rule, as proposed, might well disrupt the gains  
13 in maintenance already made by imposing a new regime that  
14 will take years to implement.

15           The industry itself is spending heavily on  
16 maintenance. Through INPO, comprehensive guidelines have  
17 been developed. They set forth details of a sound plant  
18 maintenance program. INPO is committed to ensuring that  
19 all utilities meet the letter and the spirit of those  
20 guidelines.

21           Your Advisory Committee on Reactor Safeguards  
22 has urged you not to issue this rule in its current form.  
23 We believe there are workable alternatives. In many  
24 areas -- station blackout, fraudulent materials, erosion-  
25 corrosion -- the Commission has given the industry a

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1 chance to solve its own problems without resorting to  
2 rulemaking and highly prescriptive enforcement. It seems  
3 to us that this approach has worked well and, we hope,  
4 has given the Commission the confidence that we will  
5 deliver on our promises.

6 In the maintenance area, we can fix the problem  
7 where it exists, among the plants that are not performing  
8 as they should.

9 Let me now turn the microphone over to Jim  
10 O'Connor, Chairman and Chief Executive Officer of  
11 Commonwealth Edison, who will discuss what needs to be  
12 done to ensure the industry's growth.

13 MR. O'CONNOR: Thank you very much, Phil, and  
14 good morning, Mr. Chairman, Commissioners.

15 As Phil Bayne has just reported, the nuclear  
16 industry is proud of the steady improvement in the  
17 performance of our plants. My own company operates 12  
18 nuclear units -- that's the most of any company in the  
19 United States. These units last year provided roughly  
20 three-quarters of our total output to serve 8 million  
21 people in northern Illinois. The capacity that we have  
22 on-line is roughly equivalent to 12 percent of the  
23 nation's total nuclear power capacity.

24 I fully appreciate how much effort all nuclear  
25 utilities have put into improving the performance that

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1 Phil and Joe Farley have referred to. I further  
2 appreciate the extremely important role that nuclear  
3 energy plays in our economy, and the need to have nuclear  
4 power available as an option to meet our country's future  
5 energy needs.

6 I think we're going to look back on this past  
7 year as the beginning of a second renaissance for nuclear  
8 energy in the United States. Almost imperceptibly, the  
9 fundamental nature of the discussion has changed. No  
10 longer is the future of nuclear power simply an academic  
11 question. The need for nuclear energy now, and for more  
12 in the future, is becoming unmistakably clear, even to  
13 many of those were writing its obituary just a short  
14 while ago. A successful, expanding nuclear power program  
15 is vital to our economic well being and to help meet  
16 threats to our environment.

17 There were three events in this past year which  
18 have helped us to refocus attention on the nuclear  
19 option. First, the continued growth in electricity  
20 demand that brought many electric utilities to the brink  
21 of capacity shortages; second, the growing dependence on  
22 imported oil which, as Joe indicated, is now roughly 40  
23 percent of our total oil use -- and that's about the same  
24 level that we experienced back in the 1973-74 embargo  
25 period -- and, third, the growing alarm about global

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1 warming trends that raise serious questions about how  
2 much longer the world can continue the large-scale  
3 burning of fossil fuels.

4           These are only a few of the developments that  
5 underscore the enormous and rapidly evolving energy  
6 challenge that we are going to face in the coming years.  
7 We must shift from increasing reliance on imported energy  
8 sources to our own fuels. We've got to be prudent in the  
9 use of our fossil fuels. We must make sure that we have  
10 a diversity of fuels, and we must meet the nation's  
11 growing electric power needs. Given these imperatives,  
12 there's no doubt that nuclear energy must remain a major  
13 source of our electricity.

14           As I indicated, I believe these developments  
15 are producing a fundamental change in the status of  
16 nuclear energy. We see these former skeptics -- some  
17 energy policy specialists, some columnists and editorial  
18 writers, elected officials -- yes, and even some  
19 environmentalists -- now endorsing nuclear energy, but I  
20 think equally important, and perhaps even more important,  
21 I see a changing mood among my colleagues in the electric  
22 power industry.

23           A lot of utilities were burned by their  
24 experience with nuclear power in the early 1980s--  
25 unpredictable regulatory treatment at the federal and

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1 state level; the after-shock of Three Mile Island; the  
2 huge cost increases because of the long delays in  
3 construction, primarily related to the carrying charges;  
4 the after-the-fact prudence reviews that cost utilities  
5 and their shareholders literally billions of dollars;  
6 criticism that the industry had overbuilt and that the  
7 country had a long-term excess of nuclear power. These  
8 are all things that were -- and charges that were levied  
9 and paid for in the main, by electric utilities.

10           These were traumatic years. As a result, few  
11 companies have been willing to undertake the construction  
12 of baseload new electric power plants, either fossil or  
13 nuclear, that require a large capital investment and long  
14 lead times, but change is inevitable, particularly in a  
15 world that now witnesses events that weren't even dreamed  
16 of a few years ago, such as the huge demonstrations for  
17 democracy in China and Eastern Europe.

18           Most utility executives have always believed  
19 that nuclear energy was important to the economy, but you  
20 would have had trouble finding a CEO who felt that his  
21 company would ever consider another nuclear plant. The  
22 financial risk was just simply too great to absorb.

23           Today, several of the country's largest  
24 electric utilities, especially those that are located in  
25 fast-growing areas, now see the need for large amounts of

1 additional capacity over the next decade, and they see  
2 their energy options for that new capacity very  
3 restricted.

4           How much oil do we want to import, and at what  
5 price? How long can we rely on the price and supply of  
6 natural gas? Can we afford to place all of our chips on  
7 coal? And how many really believe we can head into the  
8 21st century, with an expanding economy, trying to  
9 compete with other industrial powers in the international  
10 marketplace, by counting largely on major, and possibly  
11 unachievable, increases in conservation or by utilizing  
12 independent power producers to pick up the slack?

13           The answer emerging more clearly every day is  
14 that nuclear energy must be available as one of the  
15 industry's options when utilities consider major new  
16 capacity additions in the future. And if regulatory  
17 conditions permit, I'm convinced that nuclear energy will  
18 be the choice in many instances, perhaps sooner than many  
19 of us would have predicted just a few short years ago.

20           This conviction is based on informal  
21 conversations with my fellow utility executives, as well  
22 as on the formal discussions of nuclear power conducted  
23 throughout our several industry associations. One key  
24 indicator of the industry's level of support is a  
25 position paper prepared for the new Administration

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1 earlier this year by the Nuclear Power Oversight  
2 Committee and, in that paper, we stated unequivocally  
3 that "our nation will need substantial new electric  
4 generating capacity in the 1990s", and that "nuclear  
5 energy should play an important role in providing this  
6 new capacity".

7 As last year clearly demonstrated, surpluses of  
8 electric power are all but gone in many regions of the  
9 country, and that's particularly true along the East  
10 Coast from Maine down to the southeast.

11 We have seen the predictions of slow growth or  
12 no growth evaporate as the economy has continued to grow.  
13 Growth in demand for electricity in the past two years is  
14 double what the forecasters have been predicting.  
15 Electricity sales last year alone grew 4.5 percent. Last  
16 year, in many parts of the country, including my own,  
17 experience in demand increases was achieved that we  
18 hadn't anticipated until the early 1990s.

19 In the case of my own company, last August 17th  
20 our demand surged upwards 11.5 percent above the previous  
21 high for our company, and it really caused our critics to  
22 take account of the fact that the demand is really out  
23 there. And these are the same critics who, for years,  
24 had challenged the need for power and the desirability of  
25 completing our Byron and Braidwood stations.

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1 Not only Edison, but our neighboring utilities  
2 as well, were very fortunate last summer that the critics  
3 did not prevail in their arguments and that we had the  
4 opportunity to take power from these plants.

5 We all recognize that electricity use and the  
6 GNP are inextricably linked. Since 1973, the GNP has  
7 grown by 46 percent, and electricity use during that same  
8 period has grown by 50 percent. Recent studies by the  
9 Department of Energy and by the Edison Electric Institute  
10 predict that electricity demand will grow 2.6 percent a  
11 year through the year 2000, and that's roughly a total of  
12 another billion kilowatt hours.

13 With that kind of growth, we see the need for  
14 one-third more capacity on our system or, put another  
15 way, that translates into the need for a 120,000 to  
16 220,000 megawatts of additional generating capacity,  
17 beyond that which we now have. Given the long lead times  
18 for construction, hard choices are going to have to be  
19 made, and they're going to have to be made very soon.

20 If we do not obtain additional nuclear energy,  
21 what choices remain? For one, we are going to be certain  
22 to be more reliant on imported oil. The Department of  
23 Energy projects that U.S. oil production will decline 28  
24 percent, to a little less than 6 million barrels a day,  
25 by the end of the century. Increased oil imports will

1 make up the difference, supplying in excess of 50 percent  
2 of the U.S. needs by 1994, and that's a pretty dangerous  
3 trend.

4           The DOE assumes electricity generated by oil  
5 will increase by more than 5.5 percent a year through the  
6 year 2000, and that's reversing a 15-year trend that  
7 we've had in our industry away from using oil for  
8 electric generation.

9           Collectively, economic, strategic and  
10 environmental concerns have convinced the utility  
11 industry of the need for re-establishing nuclear energy  
12 as a realistic option.

13           This realization, however, is not enough.  
14 Before utilities can consider the increased use of  
15 nuclear energy, we must clear away some serious obstacles  
16 that are now holding us back.

17           First, as you so clearly understand, we need a  
18 more predictable licensing process. Second, we must see  
19 substantial progress in the Federal Government's nuclear  
20 waste disposal program. Third, we've got to find a way  
21 to address license extension. A nuclear plant that has a  
22 demonstrated track record of safe, efficient operation  
23 should be able to continue beyond its 40-year license  
24 period, and the demonstration program that's now underway  
25 with the Department of Energy and the Electric Power

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1 Research Institute, along with two other utilities, one  
2 with a PWR and one with a BWR, would develop with the NRC  
3 staff a process that will, first, satisfy the  
4 requirements for a safe and -- to provide safety to the  
5 public at the same time that it will permit the continued  
6 operation of the much-needed power plants in this  
7 country.

8           If nuclear is to succeed, we're also going to  
9 have to have some new understandings with our state  
10 regulators that will give us the assurance that we can  
11 recoup our investments once we have kept our part of the  
12 bargain, and that the plants, once finished and  
13 operating, will have a way to finance themselves in the  
14 rate base.

15           For years, we had a compact with state  
16 regulators and, in large measure, that's been shattered,  
17 and I'm afraid that until there's some understanding that  
18 occurs between the utilities and state regulators that  
19 not all the burden can be placed on the utilities for  
20 undertaking the construction of major new plants but some  
21 of that has to be shared by state regulators, it's  
22 unlikely that we're going to see large investments that  
23 are going to be required to build these plants.

24           If nuclear is, indeed, to be one of our  
25 options, we cannot wait until the shortages are upon us

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1 before we make these changes. We've simply got to have  
2 the foundation in place well in advance. We're trying to  
3 do what we can, developing more economical, standardized  
4 reactor designs that will be able to compete in  
5 tomorrow's marketplace, but technology is not the  
6 limiting factor; the primary obstacle is regulation.

7 In saying that, I want to convey my  
8 appreciation to the Nuclear Regulatory Commission, for  
9 its recent improvements in the licensing process. By  
10 endorsing standardized plants, by early approval of sites  
11 and emergency plans, and the combined construction  
12 permit-operating license, you have put in place a vital  
13 component of the foundation for tomorrow's nuclear  
14 orders.

15 We realize that this Commission went about as  
16 far as it believed it was capable of going under existing  
17 law; we still think that legislation is necessary in this  
18 area, if for no other reason than to ratify and codify  
19 what the Commission has already advanced. Our belief  
20 that legislation is desired, however, I want to assure  
21 you, takes nothing away from our appreciation to you for  
22 the major steps that you have taken in this area.

23 As I've noted, we also need to remove some of  
24 the financial uncertainties at the state level. We need  
25 that new spirit of cooperation between utilities and

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1 state regulators. Utilities and public service  
2 commissions have got to devise a process whereby they can  
3 agree in advance on the need for a new power plant and on  
4 the conditions under which those costs can be recovered.

5 And here, again, leadership at the national  
6 level, perhaps through the Federal Energy Regulatory  
7 Commission or at the Administration level, could be very,  
8 very helpful to us.

9 National leadership in bringing nuclear power  
10 back to the marketplace would not be contrary to the  
11 wishes of a presumably frightened public, as many of the  
12 industry's critics assert.

13 Public opinion surveys show, in fact, that  
14 there is broad public acceptance for nuclear power. When  
15 asked which of the energy sources will be our primary  
16 source of electricity ten years from now, Americans name  
17 nuclear energy above all other sources.

18 Significantly, almost three-quarters of the  
19 public expect nuclear power plants that might be built in  
20 the years ahead will be safer. They expect, also, safety  
21 to improve -- and I quote -- and these are some of the  
22 comments that came back in these surveys -- "We learn  
23 from our mistakes", "we are gaining experience", and "the  
24 technology is constantly improving". Increased  
25 regulation, incidentally, is not a factor in their views.

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1 More than three-quarters of Americans believe  
2 it is likely that new nuclear power plants will have to  
3 be built in the years ahead, and 43 percent think it is  
4 very likely. That's really a very large number when  
5 compared with just a few years ago. Two-thirds of  
6 Americans consistently respond that nuclear energy is a  
7 good or realistic choice for large-scale use.

8 Nuclear energy also enjoys Presidential  
9 support. When he announced his appointment of Admiral  
10 James Watkins as Secretary of Energy, President Bush  
11 stated -- I am quoting him -- "I am convinced we are not  
12 going to solve the national energy needs of this country  
13 through hydrocarbons alone or through wind and thermal or  
14 coal alone. We must safely use nuclear power" -- end of  
15 quote.

16 We're also very encouraged by the common-sense  
17 approach that Admiral Watkins has taken, in trying to  
18 restore some rational thinking to issues such as the  
19 Shoreham fiasco.

20 This industry fully realizes that the future of  
21 nuclear energy in the United States involves more than  
22 just overcoming the financial and regulatory obstacles to  
23 new plant construction, as both Joe and Phil have  
24 suggested. We need to do our part, too.

25 We need to continue to operate these plants

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1 efficiently and safely, and we need to educate the public  
2 so that today's increasing acceptance of nuclear energy  
3 translates into a growing recognition of its benefits and  
4 future potential. Opinionmakers, policymakers and  
5 others, as well as the industry and its regulators, all  
6 have important roles to play in this regard.

7 I don't know of another industry that operates  
8 more in a fish bowl, more under a stringent regulatory  
9 doctrine than we do in the nuclear industry. I know of  
10 no other technology that's required to report every  
11 single unusual event, no matter how mundane.

12 I hope we can continue to work to try to help  
13 the public understand that an unusual event is not an  
14 accident, as our critics like to claim, and that these  
15 reporting requirements actually reflect the industry's  
16 unique regulatory oversight and emphasis on safety.

17 The task of ensuring that we meet our future  
18 electrical needs is so vital to the national interest,  
19 such a monumental obligation, that it can't rest with  
20 industry alone, however. It's a collective  
21 responsibility of government and industry. Strong  
22 government leadership and forward-looking legislative and  
23 regulatory policies are needed to ensure that nuclear  
24 energy will be available to meet our nation's future  
25 energy needs.

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1           We are understandably proud of the  
2 contributions that nuclear power has made to our nation's  
3 economic strength and energy security, but at the same  
4 time we're somewhat frustrated that this domestic, non-  
5 polluting energy source has not been permitted to achieve  
6 its full potential. There are crises ahead if we fail to  
7 plan effectively, and it is increasingly clear that  
8 nuclear energy must be a part of our strategy to meet the  
9 energy needs of our nation in the years ahead.

10           Thank you very much, Mr. Chairman,  
11 Commissioners.

12           CHAIRMAN ZECH: Thank you.

13           MR. FARLEY: Mr. Chairman, Commissioners, in a  
14 little more than a decade, we will be entering the 21st  
15 century. We can't know what that century will bring, but  
16 we do know that it will be an era of technological  
17 advancement, a time of intense economic competition  
18 between industrialized nations and, we hope, a rising  
19 standard of living for many Americans who have not yet  
20 felt the benefits of modern society.

21           Our job is to provide the electric power to  
22 make all that happen. Nuclear energy will be decisive in  
23 determining whether we succeed. Without it, we will be  
24 moving into the 21st century, trying to be  
25 technologically advanced in a competitive society, but

1 relying on the three fossil fuels of the 19th century.  
2 As you know, other nations are not making that mistake.

3 We believe over the past decade the industry  
4 and the Commission have made major strides toward heading  
5 off that outcome, and we intend to continue.

6 We took great comfort yesterday in our luncheon  
7 meeting, when a letter was read by Under Secretary Tupp,  
8 from the President of the United States, which encouraged  
9 us very much, with a direct message, in going about the  
10 business that we've been discussing here with you this  
11 morning. And in his concluding paragraph, he said "And  
12 now is the time for America's nuclear industry to take  
13 its rightful place in helping to meet the nation's energy  
14 needs for the next decade and the next century". It's  
15 very reassuring to have that commitment directly from the  
16 White House.

17 We thank you all for your time. We look  
18 forward to even greater progress in the years ahead.  
19 And, Mr. Chairman, we wish you the best in the years  
20 ahead, and offer our sincere thanks for having served  
21 your country, again, so well. Thank you, and we'll be  
22 glad to receive questions or comments from all of you, of  
23 course.

24 CHAIRMAN ZECH: Thank you very much. Questions  
25 from my Commissioners? Commissioner Roberts, comments,

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1 questions?

2           COMMISSIONER ROBERTS: I have no questions,  
3 just a comment. I think you paint a pretty grim future  
4 for our energy situation, but I'm afraid you're quite  
5 accurate.

6           MR. FARLEY: We had a great deal of comment  
7 from a number of Senators and Congressmen yesterday,  
8 during our meeting, in that regard, and one bit of  
9 comfort is the fact that there is so much realization  
10 that that problem -- the problems we discussed are there.

11           COMMISSIONER ROBERTS: Certainly, historically,  
12 no elected politician has been willing to be up front on  
13 the nuclear issues. I'm sorry. That's a historical that  
14 you know as well as I. Look at the congressman on Long  
15 Island who lost his seat over LILCO.

16           MR. FARLEY: Yes.

17           COMMISSIONER ROBERTS: That's all I have.

18           CHAIRMAN ZECH: Commissioner Curtiss?

19           COMMISSIONER CURTISS: I don't have any  
20 questions.

21           CHAIRMAN ZECH: Well, let me, first of all,  
22 thank you for your excellent presentations. I can assure  
23 you that we will study your comments and your thoughts  
24 that you've given us here today, and we will review them  
25 very carefully.

1 I think that I'd like to respond to a few  
2 things you said, very briefly. I've made a few notes,  
3 and I don't know if I'll hit on all the things or not,  
4 but let me try but, in trying, please recognize that I'm  
5 giving you my views at the moment, and assure you that  
6 the Commission and the staff will carefully review your  
7 remarks to make sure we can perhaps take them into a  
8 little bit more serious consideration than I give you  
9 with these brief comments here this morning.

10 First of all, I agree with the general thrust  
11 of what you've said, that nuclear energy is -- nuclear  
12 power is important for the future of our country. This  
13 Commission believes that. That's part of the Atomic  
14 Energy Commission charter -- in the very first section--  
15 of the Atomic Energy Commission that we're well aware of.

16 Our responsibilities are for public health and  
17 safety, the common defense and security, and also our  
18 responsibilities are to -- and so, minding those primary  
19 responsibilities is to be mindful that the Congress, in  
20 the Atomic Energy Act, has so stated that nuclear energy  
21 is a legitimate and important national goal, and the  
22 peaceful benefits of nuclear energy in our country,  
23 brought to our fellow citizens, is part of the charter  
24 that this agency lives under. So, we're very mindful of  
25 that, and we also recognize that we have room for

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1 improvement in our agency.

2           We are, as you well know, trying to make our  
3 agency perform better all the time. I think we have made  
4 some improvements. We certainly agree with your views on  
5 stability and predictability of the regulatory process.  
6 My personal feeling is that efforts to bring stability  
7 and predictability with the licensing process are not  
8 incompatible with our safety responsibilities. That's  
9 the challenge we have, to bring stability and  
10 predictability to our process, at the same time mindful  
11 that we are focusing on doing that in a manner such as  
12 public health and safety will be assured.

13           So, I don't think that's incompatible, and  
14 that's our -- that's, of course, what we focus on. That  
15 doesn't mean that we should be complacent, nor the  
16 industry should be complacent.

17           We have made great progress together, I  
18 believe, in recent years, and I think that we have a very  
19 serious obligation to continue to make progress, and to  
20 recognize that the energy needs of our country are  
21 growing, and that we want to provide for those growing  
22 needs in a manner that is safe and reliable and economic.  
23 In my view, they all go together; you can't neglect one  
24 for the other, and you must start with safety, first, and  
25 you move to reliability and you move to economics, but

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1 they all go together, and they simply must go together,  
2 in my view, and I think our industry and our regulatory  
3 agency is focusing on those areas, and I think we are  
4 making progress in that regard.

5 I do believe that, as Mr. O'Connor pointed out,  
6 I believe, that federal regulation is still necessary,  
7 and will be necessary. I think we all acknowledge that,  
8 and I think that's important.

9 A couple points you mentioned -- I think Mr.  
10 Bayne mentioned a concern about our going beyond our  
11 normal regulatory bounds in our quest for excellence, if  
12 you will, and pushing you towards that.

13 I will take full responsibility for that. That  
14 is my objective. I do think it's important that you  
15 continue to move towards excellence, and it troubles me  
16 occasionally, when I hear those who say that this nuclear  
17 regulatory agency should be satisfied with the minimum  
18 requirements, with adequacy and, essentially, a marginal  
19 standard. That's not the way I'm made up. I can't  
20 possibly accept that for our agency, and I don't accept  
21 it. And the reason I don't is because I believe that we  
22 should not be satisfied with bare compliance and  
23 marginally meeting our responsibilities, nor should you.

24 And speaking of Admiral Rickover, I know that  
25 was never his philosophy, Mr. Bayne, as you and I well

1 know. He always encouraged us to do our best, and to not  
2 be satisfied with anything other than our best.

3 So, here at the agency, whereas I fully  
4 recognize that we have requirements and those must be  
5 met, I would certainly hope that the industry would  
6 appreciate the fact that, as a regulator, it's not a very  
7 comforting feeling to think that all that's happening out  
8 there is people are barely meeting our marginal  
9 requirements in an adequate manner. That's not very  
10 comforting from a regulator's viewpoint. It's not good  
11 enough for me.

12 So, we expect you to do better than that. We  
13 know most all of the plants are doing much better than  
14 that. We fully recognize that, but it bothers me when I  
15 hear that we're criticized for encouraging excellence  
16 because I think we should encourage excellence. I think  
17 you should. I think you are. I think INPO has that  
18 charter, of course, but I think you should recognize that  
19 the NRC also encourages excellence, and I think that we  
20 are achieving excellence, and I think that that is  
21 something that we should lay to rest because it's not  
22 good enough, from my standpoint, to accept marginal  
23 performance.

24 Let's see -- I think there was a mention of the  
25 bulletins and generic letters, and let me just say there,

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1 we do have a number of regulatory tools at the agency  
2 that we use. I think we, in general, exercise them  
3 responsibly. We always try to. We do, in choosing the  
4 proper regulatory response. Sometimes we have to take  
5 into consideration the urgency, and I can assure you that  
6 when we find that there is a safety concern, that we're  
7 not overly worried about the bureaucracy and what we have  
8 to do. We take whatever action we believe is important  
9 and is necessary to address the safety concern.

10 So, it is true that we have used generic  
11 letters and bulletins, and will continue to do so, as far  
12 as I'm concerned, but I think we're using them with good  
13 judgment. We have to look at the safety risks involved  
14 and the timeliness of getting information to you when we  
15 hear about it.

16 We try to decide whether it's just PWR plants.  
17 Is it BWR plants? Is it generic to everybody? Is it  
18 just a small group of plants? We do take all those  
19 factors into consideration, and use our best judgment,  
20 but we do act promptly when we see we have a safety  
21 concern.

22 I do think that the generic letters and  
23 bulletins have decreased. If you look, the trends are  
24 going down. Yes, 1988 was what I would like to think is  
25 perhaps an aberration, but we did have special concerns

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1 in 1988, as you know, in the view of the counterfeit  
2 problem in the fasteners and other equipment that looked  
3 like it could give us a potential safety concern. We  
4 needed to get that out in a hurry, and we did.

5 My review of the bulletins has been that even  
6 though there was a larger number issued in 1988, I think  
7 almost half of them were supplements of bulletins that  
8 had already been issued. I'm not sure that's correct,  
9 but I think it is but, in any case, that was a particular  
10 problem which did require us to take prompt action, and I  
11 think we acted responsibly.

12 Maintenance -- just a word on maintenance.  
13 You've heard my views on maintenance before, most of you.  
14 I've been concerned about improvements of maintenance  
15 ever since I first visited my first plants almost five  
16 years ago, and I do think and acknowledge that  
17 maintenance has improved. I think it's been a long time  
18 improving, though. I think INPO gets great credit for  
19 their efforts in that effort, and in other efforts that  
20 they've undertaken. They serve you very well.

21 INPO is one of the most responsible  
22 developments in the industry, in my judgment, since Three  
23 Mile Island, and they are serving you well in the  
24 maintenance area and in other areas, but I do believe  
25 that this regulatory body, if we do believe that

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1 maintenance has a direct bearing on safety -- which I  
2 believe it has -- certainly merits consideration of  
3 rulemaking.

4 I was personally disappointed in the reaction  
5 from the utilities concerning our efforts. We got,  
6 essentially, no cooperation at all. Everybody just kind  
7 of said "it's not -- rulemaking is not necessary, leave  
8 us alone". I appreciate that viewpoint. On the other  
9 hand, it seemed to me that we would have been better  
10 served by getting your advice. We asked for your help.  
11 We asked for your advice. We didn't get much help and,  
12 as a result, we've got before us a rulemaking which the  
13 Commission is looking at right now.

14 We don't know if it's as good as we want it.  
15 We want a good rule, if we have a rule. Staff has worked  
16 hard to develop such a rule. I commend the staff for  
17 their efforts, without much support, to develop the best  
18 rule they possibly could. Staff has done a superb job in  
19 that regard, in giving us several options. We're looking  
20 at it right now. I don't know what we'll do. We haven't  
21 decided yet.

22 We'll make a decision soon but, in any case, no  
23 matter what happens, whether we have a maintenance rule  
24 now or later, or if we have a maintenance rule, the  
25 important thing, I think, is for the industry to continue

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1 its efforts to improve maintenance because, in my  
2 judgment, it truly does have a direct bearing on  
3 operational safety.

4 Let's see -- well, just a word on the final  
5 rule that we've recently put out, on standardization,  
6 early selected sites, and combined construction permit  
7 and operating licenses. Since the 1970s, this  
8 Commission, as I understand it, has been putting forward  
9 a legislative proposal to Congress, on trying to improve  
10 our -- and reform our licensing process.

11 I was one who was convinced for the first four  
12 years I was on the Commission, that we needed  
13 legislation. Last summer, after four years of being on  
14 the Commission and going every year to Congress with a  
15 proposal and realizing that I've got one more year on the  
16 Commission as the Chairman, and I didn't want to just put  
17 forward another legislative proposal to say we did, so I  
18 asked the General Counsel, Mr. Bill Parler who is, in my  
19 view, one of the best general counsels in the United  
20 States of America, and the Executive Director for  
21 Operations, Mr. Vic Stello who, in my view, is one of the  
22 finest public servants in our country, to see what they  
23 could do to come up with our own -- to research, start  
24 all over again; to go back and look at the statutes, look  
25 at the regulations; see what we could do on our own, to

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1 use all the authority we could, to develop this rule.

2           They worked very hard all summer and all fall,  
3 and they brought it forward to the Commission. We put it  
4 out for public comment, as you all know; we received  
5 comments from many, many of you and others. We took  
6 those comments very seriously. We worked very hard. The  
7 Commissioners -- personally, I can assure you, every one  
8 of them was involved with his own personal staff as well  
9 as the technical staff and our legal people -- and we put  
10 a tremendous amount of effort that -- I'm so proud,  
11 frankly, of what my colleagues have done in that regard,  
12 that they give me a lot of credit for that and I'm, of  
13 course, flattered by that, but they get the credit -- my  
14 fellow Commissioners, and the staff, and General Counsel,  
15 and others -- for this effort, but it was a Commission  
16 effort, a team effort, I can assure you, but I think we  
17 did a good job.

18           I think we did a very good job, and now we have  
19 a rule that does provide, in my judgment, a sound basis  
20 for efficient construction and licensing of new, safe  
21 nuclear power plants in our country.

22           The Commission, I believe, is confident that  
23 the final rule rests on a solid legal foundation, and  
24 will fully accomplish the purposes for which it was  
25 designed. The Commission believes it's necessary to give

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1 the rule an opportunity to work.

2 I, for one, have concluded that legislation is  
3 not necessary, and I believe that my fellow Commissioners  
4 have the same feeling. So, we believe that this  
5 rulemaking is a good one, it's solid, it will stand the  
6 test of time, and it will provide for the future.

7 So, those are my thoughts on some of the things  
8 you talked about, but having said that, let me assure  
9 you, again, that I will review, again, what you've  
10 brought forward to us today. We do listen to you  
11 carefully, and others who are interested in nuclear  
12 energy in our country.

13 We have the benefit of lots of various views,  
14 and I can assure you that we listen to our Advisory  
15 Committee on Reactor Safeguards, as well as other  
16 advisory groups we have, as well as the public comments  
17 we get from all sectors, and that's the strength of this  
18 agency, I believe.

19 This independent regulatory agency provides an  
20 avenue for a tremendous amount of knowledge, viewpoints,  
21 scientific and engineering expertise that we get, and we  
22 respect that. We listen to it. We study it and analyze  
23 it carefully. We try to make the best decisions we can,  
24 and you can be assured that we will, again, review what  
25 you've brought to us today very carefully, and my

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1 comments, again, are just my personal ones to you here  
2 today, and to let you know that we have listened, and  
3 continue to listen to your viewpoints.

4 We recognize that you are the operators, that  
5 you are the ones responsible for the safety of the  
6 operation. We provide the regulatory framework. We try  
7 not to do that in a vacuum. We try not to do that in an  
8 ivory tower. That is, indeed, why I have visited the  
9 plants in our country, have tried to get to know all of  
10 you as best I can.

11 I've developed a tremendous respect for the  
12 utility leadership that I have gotten to know, and I  
13 think that we have -- our country is fortunate to have  
14 the leadership we do have in our nuclear utility, our  
15 nuclear industry across-the-board, and that gives me the  
16 great confidence, to know that this agency can listen  
17 very carefully to what you say, and be very serious about  
18 exercising our responsibilities because I do believe very  
19 strongly that we have the same goal -- that is, to  
20 provide safe nuclear power, nuclear energy, to the  
21 citizens of our country. That's your goal as well as our  
22 goal.

23 Our roles are somewhat different in that we  
24 have the regulatory responsibility for our government.  
25 We have the statutes behind us, and the law behind us.

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1 On the other hand, we are very respectful of that, and  
2 your role is to design, construct and operate those  
3 plants and those nuclear energy facilities in a safe  
4 manner.

5 So, where our roles are different, our goal is  
6 the same. Therefore, we ought to continue to work  
7 together, in my judgment, to serve the American people.  
8 That's our obligation. That's your obligation. And  
9 that's why it has given me great satisfaction in this  
10 very challenging job it's been a privilege of mine to be  
11 in for a few years. It gives me great satisfaction to  
12 know that we have made progress, but there is room for  
13 improvement, on this agency as well as your industry, and  
14 we shouldn't be complacent or over-confident. We  
15 shouldn't be satisfied, neither of us, in my view.

16 We simply have too great an obligation to the  
17 American people to provide the energy they really, truly  
18 need, and provide it in a safe manner. It's a great  
19 responsibility we have and, together, we need to go  
20 forward, in my view, to do the best we can in that very  
21 important obligation we have.

22 Other comments?

23 (No response.)

24 Well, let me then thank you, again, for being  
25 with us. We appreciate very much your kind words.

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1 I also welcome the many others in the audience  
2 that I see from the Nuclear Power Assembly. So many of  
3 you I've gotten to know very well. My remarks I extend  
4 to those of you in the audience as well as those at the  
5 table, and my respect for what you've done and what you  
6 continue to do.

7 I think that it is important that we continue  
8 to work together in an atmosphere of mutual respect and  
9 trust and confidence, honesty, integrity, while  
10 acknowledging our different roles. I think that's  
11 healthy. It's good. But I believe that the nuclear  
12 industry and the NRC will be successful. I'm confident  
13 we will be successful in achieving our common goal and in  
14 bringing the benefits of safe nuclear energy to our  
15 fellow citizens. I believe we will be successful, we  
16 must be successful.

17 So, let me just conclude then by thanking you  
18 very much for your presentations today, and as much as  
19 anything, let me thank you for your continuing service  
20 that you and your colleagues here are providing to the  
21 American people, and let me just remind you and remind my  
22 colleagues in the agency, that we have a great  
23 responsibility to do our best to do that well, and we all  
24 need to continue striving in that regard, but to those of  
25 you here today, let me thank you for your presentations,

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1 and especially let me thank you for your service to our  
2 country. You are serving your country. We here at the  
3 agency and the government are serving our country, but  
4 you, too, are serving your country, by providing a very,  
5 very vital need to our fellow citizens.

6 So, for that and for your many contributions on  
7 a daily basis, let me thank you very much.

8 Thank you very much.

9 We stand adjourned.

10 (Whereupon, at 11:07 a.m., the meeting was  
11 adjourned.)

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This is to certify that the attached events of a meeting  
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DATE OF MEETING: MAY 10, 1989

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1989 NUCLEAR POWER ASSEMBLY

NRC AND THE NUCLEAR INDUSTRY:  
WHERE WE STAND TODAY

BY

J. Phillip Bayne  
President  
New York Power Authority

Presentation To  
The U.S. Nuclear Regulatory Commission

May 10, 1989

NRC AND THE NUCLEAR INDUSTRY:

WHERE WE STAND TODAY

By J. Phillip Bayne

Good morning, gentlemen. It's a pleasure to be here. Before I go any further, I want to endorse Joe Farley's remarks about Chairman Zech's efforts over the last five years—in pressing the industry to perform better, and in reorganizing this agency, consolidating it under one roof and establishing a five-year plan with clearly defined goals. Mr. Chairman, you have made a measurable difference.

In a few minutes, Jim O'Connor from Commonwealth Edison will give you his thoughts on what should be done to insure expanded use of nuclear energy in this country.

But, first I'd like to share my suggestions—and those of my colleagues—on what we can do to insure that today's plants remain viable, economical, productive assets.

Let me briefly review some recent history. The 1979 accident at Three Mile Island was, of course, a watershed event in the history of commercial nuclear power in the United States. It led to the creation of the Institute of Nuclear

Power Operations, the National Academy for Nuclear Training and the Nuclear Safety Analysis Center at EPRI. It forced sweeping changes in practices, procedures, training, operations, inter-company communications. And, most important, in attitudes.

Ten years ago, our nuclear utilities were isolated, many doing their own thing in their own way. There was no systematic way of sharing operating experience or learning from the experience of others. We were not consistent in tracking abnormal events and examining them for generic significance. That has changed.

Ten years ago, only control room operators had formal training and that was not uniform. There were only 12 control room simulators in the entire country. And most plants operated with only three or four shifts of operators which, as you know, meant too much overtime and too little refresher training.

Today, the number of professional training personnel is eight times what it was 10 years ago. We've increased the amount of space devoted to training almost sixfold. The number of simulators is up from 12 to 71, with 14 more scheduled for operation in the next three years. And most plants now have five or six full shifts of control room personnel, so one shift is always in refresher training.

Equally important, control room operators aren't the only ones now receiving formal training. Eleven general categories of nuclear plant worker—maintenance, engineering and other support personnel—get formal instruction too.

Thanks to all of these changes, the commercial nuclear industry today is better organized, more disciplined and more systematic in identifying and tackling problems. It also performs at a much higher level, which is reflected clearly in the performance indicators compiled both by NRC and INPO. At the risk of telling you what you already know, let me dash quickly through a few of the key indicators:

- o Capacity factors have improved. Last year, our nuclear plants operated at a 65.1 percent capacity factor, up three percentage points from the year before.
- o The number of unplanned automatic shutdowns—a measure of safety and reliability—is declining steadily. In 1980, our nuclear plants averaged 7.4 scrams a year; last year they averaged only 2.1 per unit.
- o Unplanned safety system actuations are down significantly—from 1.3 per unit per year in 1983 to 0.8 per unit last year.

- o And there have been many other gains. Lost-time accident rates are down. Radwaste production is down. Plant efficiency—as measured by heat rate—has improved markedly. And radiation exposures among the workforce are declining.

In short, the efforts of the Nuclear Regulatory Commission and the nuclear industry over the last 10 years have paid off. We are clearly on the right track.

Having said that, however, and with all due respect for the work of this agency and the skilled, competent people who serve at NRC, I must raise a disquieting note.

We in the industry are troubled by some of the trends we see emerging in the area of regulation. I would be remiss if I did not share these concerns with you.

Before I go any further, I want to be sure you—and others—understand that we, as an industry, do not contend that we have "arrived." Like you Mr. Chairman, my background and training were in the nuclear Navy. I think one of the most important lessons we learned from Admiral Rickover was that nuclear power requires special attention and special care. With nuclear operations, you never "arrive." As with all aspects of life, whenever you start thinking you're pretty good, that's a good time to ask whether you're really as sharp as you'd like to be or ought to be.

This industry is not yet as good as it will be. We still have plants and managers that do not perform as well as they can—and as well as they should. But we've made progress—significant progress—and I don't want to lose sight of that.

With that as background, let me turn to some areas that concern us.

We perceive that increasing numbers of rules and procedures are being imposed on the basis of staff opinion, without benefit of rigorous analysis and review. We are concerned that the commission or its staff is proposing too many new—and unneeded—requirements.

In short, we perceive a growing lack of regulatory stability.

Let me cite a couple of examples.

One involves the number of bulletins and generic letters issued by this agency in the last decade. The trend is disconcerting.

As might be expected, the number of bulletins jumped dramatically in 1979 and 1980. Between 1981 and 1987, the number of new bulletins trended down as utilities worked off the backlog of TMI-related requirements. But last year, the number of new bulletins just about quadrupled. The same trend holds true with NRC generic letters.

It's not only the number of bulletins and generic letters that concerns us. There is a perception that the staff may be using many of these bulletins and generic letters—rather than the normal regulatory process—to impose new requirements that go beyond established rules and regulations.

This would be a dramatic reversal in NRC policy, and I'd suggest that there is no evidence of safety concerns that would justify it. I acknowledge that this industry has some poor performers who should and must be called to account, but we, the industry—through INPO—have the means to get their attention. And you, the commission, have the mechanisms to discipline the laggards. There is no reason to lay an ever-larger burden on the entire industry, especially the majority of plants and companies that are performing well.

Last month your staff conducted a regulatory information conference at which many of the presentations focused on the NRC's inspection, evaluation and generic communications programs. In each of these areas, attendees discerned a staff belief that it is necessary to push well beyond the normal regulatory bounds in oversight and direction. Many team inspection programs were discussed which were not compliance-based. Simply said, there's a perception that staff is attempting to regulate to a standard that is not clearly defined and has not been subjected to scrutiny and comments.

At the same conference, industry performance data was presented that was similar to that which I cited earlier. So, too, were results of the NRC's evaluation of the industry.

Aggregate SALP ratings are flat or declining in face of mutually acknowledged industry performance gains. The number of enforcement actions resulting in civil penalties is up by more than 50 percent from what it was in 1984-85. Again, the perception is that plants are being evaluated on a scale that is rising, but without the benefit of the formal regulatory process.

Let me turn to an issue that we have addressed before—the pending rulemaking on maintenance. It would place a new burden on the entire industry when data shows that the problems are isolated and involve only a few plants. And the rule, as proposed, might well disrupt the gains in maintenance already made by imposing an entirely new regime that will take years to implement.

The industry itself is spending heavily on maintenance. Through INPO, comprehensive guidelines have been developed. They set forth details of a sound plant maintenance program. INPO is committed to insuring that all utilities meet the letter and the spirit of those guidelines.

Your Advisory Committee on Reactor Safeguards has urged you not to issue this rule in its current form. And we believe there are workable alternatives. In many areas—station blackout, fraudulent materials, erosion–corrosion—the commission has given the industry a chance to solve its own problems without resorting to rulemakings and highly prescriptive enforcement. It seems to us this approach has worked well and, we hope, has given the commission confidence that we will deliver on our promises.

In the maintenance area, we can fix the problem where it exists—among the plants that are not performing as they should.

Let me close with a plea for stability. As the performance indicators demonstrate, our plants are performing better today than ever. The steady improvement required a lot of work on your part and a lot of work on ours. But the important fact is that the system IS working.

Our performance gains are the result of initiative, investment and the relative regulatory stability that we've seen over recent years. The regulatory stability provides a standard against which we can measure and demonstrate—by further performance improvements—a return on investment.

We subscribe to the pursuit of excellence, but we need precision and regulatory stability to accomplish it.

Mr. Chairman, my thanks for your attention. We look forward to working with the commission and the staff in a continuing mutual effort to improve operations that will pay dividends in safer, more reliable, more-efficient nuclear power plants.

Let me now turn the microphone over to Jim O'Connor, chairman and chief executive officer of Commonwealth Edison, who will discuss what needs to be done to insure the industry's growth.

**1989 NUCLEAR POWER ASSEMBLY**

**OPENING REMARKS**

**BY**

**Joseph M. Farley  
Executive Vice President—Nuclear  
The Southern Company**

**Before The  
U.S. Nuclear Regulatory Commission**

**May 10, 1989**

## OPENING REMARKS

Joseph M. Farley

Good morning Mr. Chairman, members of the commission. I am Joe Farley, executive vice president of nuclear at The Southern Company and also chairman of this year's Nuclear Power Assembly. We appreciate your taking the time to meet with us for this annual state-of-the-industry discussion.

This is a special occasion. It is, I regret, the last time that we will brief the commission with Admiral Zech sitting in the chairman's seat. I know that Admiral Zech set this agency on a new and orderly course. Through his leadership, the NRC's first five-year plan was developed. He has brought to the agency a sense of order and direction. It is important that he presided over the consolidation of the NRC staff into this one building. On a more recent note, it was on his watch that the NRC has undertaken to develop standardization of plant design and improved licensing procedures, initiatives that set the stage for real progress for the industry.

As you all know, America's nuclear plants are safer, more reliable and more efficient today than they were 10, or even 5, years ago. Admiral Zech deserves credit for some of that improvement. During his tenure as chairman, he has visited every U.S. nuclear plant. He has never tired of driving home a few simple truths—the need for discipline, for accountability, for attention to detail in all aspects of nuclear plant operations.

He has achieved what few regulators achieve. He has managed to create a tone and climate that inspires excellence. Let me share with you what one shift supervisor at the Monticello plant said after a visit from the chairman: "He pointed out how important we are to this country, how we keep the lights on and the nation running. He called us the unsung heroes."

Admiral, I know you place great stock in what you call leadership involvement. On behalf of this industry, I'd like to thank you for your leadership over the last five years.

And now, to the subject at hand.

As I reflect on energy developments over the last year, I am struck by how mixed the picture is. Six new nuclear plants began commercial operation. In 1988 nuclear energy generated 527 billion kilowatt-hours of electricity—a 15 percent increase over the previous year and an all-time record for any country. And we needed every kilowatt-hour we could get...you'll remember that many parts of the country recorded demand for electricity that wasn't expected until the early- to mid-1990s. On top of that, the performance of America's nuclear power plants continued to improve in virtually every category—reliability, availability, and general operational quality.

That's the good news. Unfortunately, there's a big dose of bad news to go along with it.

Last year, the decline in America's energy security continued unchecked. Domestic production of crude oil dropped. Oil consumption increased. To fill the gap, imports of oil rose to 37 percent of our nation's needs. Oil imports accounted for more than 30 percent of our \$120-billion trade deficit—a crime in a country blessed with so many energy resources.

At the same time, construction of new electric power plants is at a 15-year low. Yet demand for electric power continues to increase and this growth already threatens reliability of electric service in some regions. Since 1982, growth in electricity demand has averaged 3.6 percent a year, much higher than expected. Unfortunately, the amount of generating capacity under construction can sustain electricity demand growth of only 1 percent a year.

These trends—rising oil imports and rising electric demand met increasingly with imported fuels—may combine in the early 1990s to produce another energy crisis and another nasty shock to this nation's economy.

Electricity—particularly nuclear electricity—has played an important role in cutting our dependence on oil since the 1973 oil embargo. Today, this progress toward energy independence is in jeopardy.

Obviously, America's utilities will do what they must to meet future electricity demand. But unless the regulatory obstacles standing in the way of new nuclear and coal-fired capacity are removed, the industry will be forced to reactivate older oil-fired power plants, which were put on stand-by over the last 15 years as new coal and nuclear plants entered service. And if utilities use oil to meet electricity demand, their consumption of oil will triple by the mid-1990s—from about 500,000 barrels per day to over 1.5 million b/d.

Against this background, let me introduce my two colleagues who will discuss what must be done to ensure the continuing viability of today's nuclear plants, and the continued growth of nuclear energy in the U.S.

First Phil Bayne, president of the New York Power Authority, will provide some perspective on nuclear regulation. Then Jim O'Connor—Chairman and CEO of Commonwealth Edison and Chairman of the Nuclear Power Oversight Committee—will discuss the outlook for nuclear power.

Phil ...

## CLOSING REMARKS

Joseph M. Farley

Mr. Chairman, Commissioners, in a little more than a decade, we will be entering the 21st century. We can't know what that century will bring. But we do know that it will be an era of technological advancement...a time of intense economic competition between industrialized nations...and, we hope, a rising standard of living for many Americans who have not yet felt the benefits of modern society.

Our job is to provide the electric power to make all that happen. Nuclear energy will be decisive in determining whether we succeed. Without it, we will be moving into the 21st century, trying to be a technologically advanced, competitive society, but relying on the three fossil fuels of the 19th century. As you know, other nations are not making that mistake.

We believe that over the past decade, the industry and the Commission have made major strides toward heading off that outcome. And we intend to continue.

We thank you all for your time. We look forward to even greater progress in the years ahead. And Mr. Chairman, we wish you the best in the years ahead and offer our sincere thanks for having served your country so well, again.

**1989 NUCLEAR POWER ASSEMBLY**

**The New Outlook for Nuclear Power**

by

**James J. O'Connor**

**Chairman, Nuclear Power Oversight Committee**

and

**Chairman and Chief Executive Officer**

**Commonwealth Edison Company**

before the

**U.S. Nuclear Regulatory Commission**

**May 10, 1989**

## THE NEW OUTLOOK FOR NUCLEAR POWER

By James J. O'Connor

Good morning Mr. Chairman, Commissioners. As Phil Bayne has just reported, the nuclear industry is proud of the steady improvement in the performance of our plants. My company operates 12 nuclear units—the most in the United States. These units provided more than three-fourths of the power in northern Illinois last year and represent 12 percent of total U.S. nuclear capacity. Given our company's commitment to nuclear power—both locally and nationally—I fully appreciate how much effort all nuclear utilities have put into improving performance over the past 10 years. I further appreciate the extremely important role nuclear energy plays in our economy, and the need to have nuclear power available as an option to meet our country's future energy needs.

I think we'll look back on this past year as the beginning of a second renaissance for nuclear energy in the United States. Almost imperceptibly, the fundamental nature of the discussion has changed. No longer is the future of nuclear energy an academic question. The need for nuclear energy now, and for more in the future, is becoming unmistakably clear, even to those who were writing its obituary a short time ago. A successful, expanding nuclear power program is vital to our economic well-being and to help meet threats to our environment.

Three events of the past year have refocused attention on the nuclear option:

- the continued growth in electricity demand that brought many electric utilities to the brink of serious capacity shortages;

- growing dependence on imported oil, which now exceeds 40 percent of our total oil use and pre-1973 embargo levels.
- growing alarm about global warming trends that raise serious questions about how much longer the world can continue the large-scale burning of fossil fuels.

These are only a few developments that underscore the enormous—and rapidly evolving—energy challenge that we face over the coming years. We must shift from imported energy sources to our own fuels. We must be prudent in our use of fossil fuels. We must make sure that we use a diversity of fuels. And we must meet the nation's growing electric power needs. Given these imperatives, there's no doubt that nuclear energy must remain a major source of our electricity.

As I indicated, I believe these developments are producing a fundamental change in the status of nuclear energy. We see many former skeptics—energy policy specialists, columnists and editorial writers, elected officials, even some environmentalists—endorsing nuclear energy.

Equally important, I see changing attitudes among my colleagues in the electric power industry.

Many utilities were burned by their experience with nuclear power in the 1980s—unpredictable regulatory treatment at the federal and state levels; the after-shocks of Three Mile Island; huge cost increases because of long delays in construction; after-the-fact "prudence" reviews that cost utilities and their shareholders billions of dollars; criticism that the industry had overbuilt and that the country had a long-term excess of electric power.

These were traumatic years. Afterward, few companies were willing to undertake the construction of baseload power plants that required a large capital investment and long lead times. And who could blame them?

But change is inevitable, particularly in a world that now witnesses events not dreamed of a few years ago, such as huge demonstrations for democracy in China and Eastern Europe. Most utility executives have always believed that nuclear energy was important to our economy. But you would have had trouble finding a CEO who felt that his company would ever consider another nuclear plant. The financial risk was too great.

But today, several of the country's largest electric utilities, especially those in fast-growing areas, now realize their need for large amounts of additional capacity over the next decade, and they see their energy options for that capacity rapidly shrinking.

How much more oil do we want to import—and at what price? How long can we rely on the price and supply of natural gas? Can we afford to place all our chips on coal? And how many really believe we can head into the 21st century—with an expanding economy, trying to compete with other industrial powers in the international marketplace—by counting largely on major, and possibly unachievable, increases in conservation and small power producers?

The answer emerging, more clearly every day, is that nuclear energy must be available as one of our industry's options when utilities consider major new capacity needs in the future. And if regulatory conditions permit, I'm convinced that nuclear energy will be the choice in many instances—perhaps sooner than any of us would have predicted only a few years ago.

This conviction is based on informal conversations with my fellow utility executives as well as on the formal discussions of nuclear power conducted through our industry associations. One key indicator of the industry's level of support is a position paper prepared for the new Administration earlier this year by the Nuclear Power Oversight Committee. That report states unequivocally that "our nation will need substantial new electric generating capacity in the 1990s," and that "nuclear energy should play an important role in providing this new capacity."

As last year demonstrated, surpluses of electric power are all but gone in many regions of the country. There's absolutely no doubt that our nation will need substantial new electric generating capacity in the 1990s. We have seen the predictions of slow growth or even "zero" growth evaporate as the economy has continued to grow. Growth in demand for electricity in the past two years was more than double what most forecasters predicted. Electricity sales nationwide grew 4.5 percent in 1988 alone. Last summer, utilities in several parts of the country, including our own company, experienced demand not expected until the 1990s, and some areas of the East suffered repeated electricity shortages. Last August 17 at Commonwealth Edison, we hit an all-time peak demand record that our critics had predicted for the year 2005. These were the same critics who had challenged our need for more power in startup hearings on our Byron and Braidwood stations. Not only Edison, but neighboring utilities as well, were very fortunate last summer that the critics did not prevail and we had the power from those plants.

Electricity use and growth in GNP have been closely linked historically. Since 1973, GNP has grown by 46 percent, while electricity consumption grew by 50 percent. This correlation will undoubtedly continue. Recent studies by the Department of Energy and the Edison Electric Institute predict that electricity demand will grow 2.6 percent a year through the year 2000, or by a total of 1 billion kilowatthours. With that kind of growth, we will need one-third more electricity than we used last year. The United States will need 120,000-220,000 megawatts of additional generating capacity—beyond what we now have under construction—in place and operating to meet the increased demand. Given the long lead times for construction, hard choices will have to be made—and made soon.

If we do not obtain additional nuclear energy, what choices remain? For one, we are certain to become more dependent on imported oil. The Department of Energy projects that U.S. oil production will decline 28 percent—to 5.9 million barrels per day—by the end of the century. Increased oil imports will make up the difference, supplying more than 50 percent of U.S. needs by 1994. DOE assumes electricity generated by oil will increase by more than 5.5 percent a year through the year 2000, reversing a 15-year trend away from oil burning by utilities.

Collectively, economic, strategic and environmental concerns have convinced the utility industry of the need for re-establishing nuclear energy as a realistic option.

This realization alone is not enough. Before utilities can consider the increased use of nuclear energy, we must clear away some serious obstacles that are now holding it back.

First, we must have a predictable licensing process. Second, we must see substantial progress in the federal government's waste disposal program. And finally, we need assurance from state regulators that we can recoup our investment once we have kept our part of the bargain and the plants are finished and operating.

If nuclear is, indeed, to be one of our options, we can't wait until shortages are upon us before we make these changes. The foundation must be in place well in advance. The industry is already doing what it can—developing more economical, standardized reactor designs that can compete in tomorrow's market. But technology is not a limiting factor; the primary obstacle is regulation.

On behalf of the entire industry, I'd like to take this opportunity to convey our appreciation to the NRC for its recent improvements in the licensing process. By endorsing standardized plants, early approval of sites and emergency plans, and the combined construction permit/operating license, you have put in place a vital component of the foundation for tomorrow's nuclear orders. We realize that this commission went as far as it believed it could under existing law, but we still believe legislation in this area is necessary—if only to ratify and codify what the commission has achieved. Our belief that legislation is desired, however, takes nothing away from our appreciation for the major steps you have taken in this area.

As I've noted, we also need to remove some of the financial uncertainties at the state level. We need a new spirit of cooperation between utilities and their state regulators. Utilities and public service commissions must devise a process by which they can agree in advance on the need for a new power plant and on the conditions under which its cost can be recovered. Leadership at the national level would help here too.

National leadership in bringing nuclear power back to the marketplace would not be contrary to the wishes of a presumably frightened public, as many of the industry's critics assert. Public opinion surveys show, in fact, that there is broad public acceptance of nuclear energy. When asked which energy source will be our primary source of electricity 10 years from now, Americans name nuclear energy above all other sources. Significantly, almost three-quarters of the public expect nuclear power plants that might be built in the years ahead will be safer. They expect safety to improve because "we learn from our mistakes," "we are gaining experience," and "the technology is constantly improving." Increased regulation, incidentally, is not a factor in their views.

More than three-quarters of Americans believe it is likely that new nuclear plants will have to be built in the years ahead, and 43 percent think it very likely. Two-thirds of Americans consistently respond that nuclear energy is a good or realistic choice for large-scale use.

Nuclear energy also enjoys Presidential support. When he announced his appointment of Admiral James Watkins as Secretary of Energy, President Bush stated that "I am convinced we are not going to solve the national energy needs of this country through hydrocarbons alone or through wind and thermal or coal alone. We must safely use nuclear power." We're also very encouraged by the common-sense approach taken by Admiral Watkins and his department in trying to restore rational thinking to issues such as the Shoreham fiasco.

This industry fully realizes that the future of nuclear energy in the United States involves more than just overcoming the financial and regulatory obstacles to new plant construction. Our future depends just as much on our own ability to keep existing nuclear plants operating safely and reliably, and on educating the public so that today's increasing acceptance of nuclear energy translates into a growing recognition of its benefits and future potential. Opinion leaders, policymakers and the general public, as well as the industry and its regulators, all have important roles to play in this regard.

I know of no industry that operates under a more stringent regulatory doctrine. I know of no other technology that's required to report every single unusual event, no matter how mundane.

I hope we can continue to work together to help the public understand that an "unusual event" is not an "accident"—as our critics like to claim—and that these reporting requirements actually reflect this industry's unique regulatory oversight and emphasis on safety.

The task of ensuring that we meet our future electrical needs is so vital to the national interest, such a monumental obligation, that it cannot rest with industry alone. It is the collective responsibility of government and industry. Strong government leadership and forward-looking legislative and regulatory policies are also needed to ensure that nuclear energy will be available to meet the nation's future energy needs.

We are understandably proud of the contributions nuclear power has made to our nation's economic strength and energy security, but at the same time frustrated that this domestic, non-polluting energy source has not been permitted to achieve its full potential. There are crises ahead if we fail to plan effectively, and it is increasingly clear that nuclear energy must be a part of our strategy to meet the nation's future energy requirements.

Thank you for your attention.

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