

**THE STATE OF THE COMMERCIAL NUCLEAR INDUSTRY
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NUCLEAR ENERGY AND SCIENCE FOR THE 21ST CENTURY:
ATOMS FOR PEACE PLUS FIFTY
WATERGATE HOTEL,
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Good morning, It is an honor for me to be here today to help commemorate one of the great events in the history of the global energy industries.

(slide – Eisenhower sending signal to Shippingport)

In his historic Atoms for Peace speech, President Eisenhower told the United National General Assembly, “The United States knows that peaceful power from atomic energy is no dream of the future. That capability, already proved, is here – now – today.”

Two years before President Eisenhower’s celebrated speech, in the windswept desert of Idaho, four lightbulbs casually strung across a railing in the turbine room at a government experimental reactor had been lit – the first electricity produced from nuclear energy.

The private sector took notice, as well – and earlier in 1953, twenty-three companies came together to form the Atomic Industrial Forum, the beginning of the commercial nuclear industry in the U.S.

The Atoms for Peace speech was a quantum leap forward – a clear and dramatic signal that a popular President supported nuclear energy.

The following year, the U.S. Congress responded by ending the government monopoly on nuclear technologies, and President Eisenhower gave the signal to start construction on the first nuclear power plant used exclusively for civilian purposes at Shippingport, Pennsylvania.

A half-century later, commercial nuclear applications are invaluable to our daily lives, with thousands of industrial, agricultural and medical applications. But none is more visible than the nuclear energy industry. Nuclear energy generates the electricity for one of every five American homes and businesses, and along with coal is the foundation of the U.S. electricity generation mix. Nuclear is safe, economical, reliable, and emission-free.

Of these important attributes, the reliability and air quality benefits are of growing importance as we meet the needs of an economy increasingly dependent on an uninterrupted power supply and as we continue to take steps to protect our environment.

The first 50 years of the commercial nuclear industry in the U.S. have been extraordinarily productive. President Eisenhower's vision of a thriving international nuclear industry is today a reality. Nuclear energy supplies more than 16 percent of the world's electricity. And nuclear energy is poised to make even more meaningful strides toward improving our quality of life across the globe.

As the commercial nuclear industry in the U.S. turns 50, we are experiencing what has been characterized by the media as a renaissance.

America's 103 commercial nuclear power reactors have set new records in each of the past five years for electricity production and efficiency.

Most companies have already applied to the Nuclear Regulatory Commission to extend the operation of their nuclear plants for an additional 20 years. And Entergy, Exelon and Dominion Energy are seeking early site permits for advanced reactors, a preliminary step toward possibly building new plants.

[pause]

Safe and efficient nuclear plant performance is the bedrock of the nuclear renaissance. Since 1990, power uprates and capacity factor gains have added the equivalent of 26 new large reactors to our electricity grid—one of the most successful energy efficiency stories in the history of our industry!

(nuclear electricity output slide)

As a result, U.S. nuclear electricity output in 2002 was a record 780 billion kilowatt-hours – a one-and-a-half percent increase above 2001 levels.

Yet I don't believe we have yet seen nuclear's full potential. Electricity generation from nuclear will continue to increase as long as we don't allow ourselves to become self-satisfied and complacent in our pursuit of excellence by all operators.

One of the industry goals in its Vision 2020 plan for increasing electricity production at our nuclear plants is the adding of 10,000 megawatts of additional capacity from existing plants by 2020. Through power uprates and capacity factor improvements now under way, along with the planned restart of the Tennessee Valley Authority's Browns Ferry 1 reactor, we will already be more than halfway there within four years.

(capacity factor slide)

Here's how much we have improved in efficiency: The industry-wide capacity factor — the measure of actual output as a percentage of potential output — didn't exceed 60 percent until 1988. Last year, we were above 90 percent for the third straight year. And we are far from reaching the limits of plant efficiency. The top quartile of the industry operates at a three-year rolling average of nearly 96 percent capacity factor, while the lowest quartile is at only 82 percent. If we can bring that trailing quartile up, we can realistically expect the industry-wide capacity factor to hit 95 percent with some consistency.

(comparative fuel cost figures)

Greater output and efficiency translate to improved economic performance and affordable electricity for our consumers. Nuclear energy is the lowest-cost expandable electricity source ...and the production costs for nuclear power plants are holding steady while the costs of other fuels continue to escalate. Production costs at nuclear power plants are cheaper than coal and little more than half the cost of electricity generated using natural gas and oil.

Our safety record – the linchpin of our credibility as an industry and our resurgent public support -- also continues to be outstanding. Nuclear power's industrial safety record is unmatched by any other manufacturing industry in the country.

(Public Opinion slide)

Nuclear energy's performance and safety record has earned solid public and policymaker support – even at this time of national uncertainty. The percentage of the public favoring nuclear energy is 64 percent – close to an all-time high – according to independent public opinion research done for the Nuclear Energy Institute.

That support also extends to Washington's policymakers. Like President Eisenhower, the Bush Administration and the Congress realize the value of nuclear energy to our energy security, national security and environmental protection.

Secretary of Energy Spencer Abraham and the other distinguished representatives of the Department of Energy on this program will describe the Administration's initiatives in detail. Let me simply note the bipartisan support for the Yucca Mountain, DOE's Nuclear Power 2010 program and support for new nuclear plants. And nuclear energy is also included in the President's hydrogen initiative...I believe these policy actions are clear indications that the technology championed by President Eisenhower is poised for another half-century of success.

Energy and environmental policies are more closely linked now than ever before, and so it is more important than ever that the nuclear plants environmental benefits are well understood by the public.

The value of nuclear energy to the future environmental health of the U.S. and the world is undeniable. A recent study by the Massachusetts Institute of Technology and Harvard University, co-chaired by two former under secretaries of the U.S. Department of Energy — Doctors John Deutch and Ernest Moniz — concluded that “...the nuclear option should be retained, precisely because it is an important carbon-free source of power that can potentially make a significant contribution to the future electricity supply.”

The nuclear industry is implementing an ambitious plan, which we call Vision 2020. This plan is to ensure that nuclear energy achieves its full potential to enhance the economic health and environmental quality of the country in the future.

(emission-free energy sources in Vision 2020 slide)

The goal of Vision 2020 is to bring 50,000 megawatts of new nuclear capacity – roughly 50 large new plants on line by the end of the second decade of this century. Given the lack of large power plant construction in recent years, this is an ambitious goal...but it is a strategically important goal for this country.

Nuclear energy produces three-fourths of all of the emission-free electricity on the U.S. grid today. Though renewables provide about 2 percent of the total electricity supply and hydropower generates about 10 percent, nuclear energy is the

only readily expandable emission-free source available. The Department of Energy projects that electricity demand will rise more than 40 percent by 2020. The addition of 50,000 megawatts of new nuclear generation, along with the 10,000 megawatts of expansion of current capacity, would only increase the percentage of emission-free generation by one percent – even factoring in the potential expansion in capacity from solar energy, wind and other renewables.

The country will need an increased contribution from renewables, just as we will need added capacity from natural gas, clean coal and every other source we can muster to meet the growing demand. But we will still need nuclear energy for its economic and environmental advantages, and for its value in maintaining the security that a diverse energy supply mix brings to this country.

(NASA night sky 2000-2050 build slide)

The need for nuclear energy internationally is even greater than ours in the United States. President Eisenhower said 50 years ago that nuclear energy should be harnessed ‘to the needs of agriculture, medicine and other peaceful activities,’ including “abundant electrical energy in the power-starved areas of the world.”

Globally, six new reactors came on line last year, joining the more than 450 reactors already in operation. Thirty-three more are under construction, more than a third of these are in China and India. Nuclear energy is the best hope of those two countries, and in other developing nations, of achieving economic improvement without environmental deterioration.

In its first 50 years, commercial nuclear technology has brought many improvements to humankind – in medicine, agriculture, space exploration and many other areas. But we are recognized largely for the production of electricity.

In the next 50 years – and beyond – we have the opportunity to make a boundless contribution to the capability of this planet to support a population that will double by mid-century...to sustain that world with its environment...and its economy...not only intact, but enhanced.

The ability to generate electricity with nuclear energy will grow even more important, but it may be eclipsed by the potential to produce hydrogen using nuclear technology, leading to a hydrogen economy.

The years ahead represent not only an opportunity for our industry, but a responsibility...to play an even greater role in bringing light where there is darkness, food where there is hunger, prosperity where there is poverty. We in the nuclear industry believe we are up to the task facing us, and are eager in the spirit with which we responded to President Eisenhower's leadership a half-century ago, to advance even further the possibilities of nuclear energy that he saw so clearly.

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