

## STATEMENT FOR THE RECORD

*by*

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*before the*

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Chairman Boucher, Ranking Member Hastert, members of the subcommittee, thank you for the opportunity to appear today to provide the nuclear energy industry's views on one of the most important elements of the Energy Policy Act of 2005. The energy loan guarantee program is an absolute imperative to support the financing and construction of new nuclear power plants in the United States. I believe I speak for the entire electric power industry in thanking this committee of its consistent and even-handed leadership in matters of energy policy and environmental policy, and I appreciate your interest in ensuring effective implementation of this loan guarantee program.

My name is Christopher Crane. I am President and Chief Nuclear Officer of Exelon Nuclear. With 17 nuclear power plants, approximately 20 percent of the U.S. nuclear fleet, Exelon is the largest nuclear operator in the United States. Exelon is also actively pursuing new nuclear development: We are developing an application for a construction/operating license for a new nuclear plant, and are exploring several potential sites for that facility. In addition, we recently received an early site permit from the Nuclear Regulatory Commission, which certifies that our site in Clinton, Illinois, where we operate one nuclear reactor, meets all necessary criteria for construction of a new nuclear unit.

I am appearing today on behalf of Exelon and on behalf of the Nuclear Energy Institute, the nuclear industry's Washington-based policy organization. I am Chairman of NEI's New Plant Oversight Committee, which consists of the chief executives or chief nuclear operating officers of the companies that are developing applications for construction/operating licenses (COLs) for new nuclear power plants. NEI's New Plant Oversight Committee is charged with establishing industrywide consensus on regulatory, financial and other significant policy issues associated with new nuclear plant development. The New Plant Oversight Committee has various Task Forces focusing on specific issues related to new nuclear plant development, including a Finance Task Force, which has been deeply involved in implementation of the energy loan guarantee program.

Nuclear energy is a strategic national asset, and new nuclear power plants are essential if the United States hopes to meet its energy and environmental goals. Consider the following facts:

1. Nuclear power is essential in any program to reduce greenhouse gas emissions. The average nuclear plant avoids seven million metric tons of carbon dioxide (CO<sub>2</sub>) each

year. The 682 million metric tons prevented by America's 103 nuclear power plants in 2005 is equal to the annual emissions from 96 percent of the country's passenger cars. In addition, nuclear power plants also avoid emissions of criteria pollutants like sulfur dioxide, nitrogen oxides and mercury, thereby reducing the clean air compliance burden and costs that would otherwise fall on power plants and industries burning fossil fuels.

2. Nuclear power plants can reduce pressure on natural gas supply, thereby helping to mitigate the volatility in natural gas prices. Compared to an equivalent-size gas-fired power plant, a 1,000-megawatt nuclear plant saves approximately 54 billion cubic feet of natural gas per year, enough natural gas to serve over 600,000 residential customers.
3. Construction and operation of a new nuclear power plant will provide substantial employment – 1,400-1,800 jobs during construction on average (with peak employment as high as 2,400 jobs at certain times), and 400-700 permanent jobs when the plant is operating. These permanent jobs pay 36 percent more than average salaries in the local area. The 400-700 permanent jobs at the nuclear plant create an equivalent number of additional jobs in the local area to provide the goods and services necessary to support the nuclear plant workforce.

My Statement for the Record covers four major areas:

- The purpose and value of loan guarantees in supporting private sector investment, and the unique features of the energy loan guarantees provided by Title XVII of the Energy Policy Act;
- The critical importance of loan guarantees in supporting the financing of new nuclear generating capacity in the United States;
- The nuclear energy industry's perspective on the minimum conditions necessary for a successful energy loan guarantee program, and
- The nuclear industry's concerns about implementation of this program by the Executive Branch in the 20 months since enactment of the Energy Policy Act of 2005.

### **The Purpose and Value of Loan Guarantees**

Federal loan guarantees are widely used by the federal government to support financing of projects that (1) have substantial public value, and (2) would not otherwise be able to secure financing on reasonable terms. Federal loan guarantees are used for ongoing programs – to support rural electrification, development of transportation infrastructure, shipbuilding, low-income housing and, through agencies like the Export-Import Bank and the Overseas Private Investment Corporation, to support U.S. companies developing projects overseas. Federal loan guarantees are also periodically used in specific emergency situations – as they were after the September 11, 2001, terrorist attacks to support the U.S. airline industry. Title XVII of the 2005 Energy Policy Act authorizes the Secretary to provide guarantees for up to 80 percent of project cost for projects that (i) avoid, reduce or sequester air pollutants or greenhouse gases, and (ii) employ new or significantly improved technologies.

At the end of the 2006 fiscal year, \$1.12 trillion in federal loan guarantees were outstanding, and the President's FY 2008 budget projects \$290 billion in new loan guarantee commitments. The President's FY 2008 budget proposes \$9 billion for the DOE Title XVII Loan Guarantee

Program, which represents 3 percent of new government-wide loan guarantee commitments projected in FY 2008, and less than 1 percent of the current portfolio of outstanding federal loan guarantees.

Under the Federal Credit Reform Act (FCRA) of 1990, loan guarantees are scored in the federal budget on a risk-adjusted basis, based on the budget subsidy cost methodology specified in FCRA. The actual amount of new Budget Authority to cover new loan guarantee commitments in FY 2008 is \$2.7 billion (or less than 1 percent of the face value of the new loan guarantee commitments). The budget subsidy cost represents the net present value of the risk-adjusted cost to the government of the loan guarantee at the time it is issued – e.g., the net present value of the loan payoff in the event of a default, less any fees paid by the project to the government and any recoveries (from pledged collateral) made by the government in the event of a default. In this calculation, both the loan payoff amount and any recoveries are estimated on a risk-adjusted basis -- i.e., the face amounts are adjusted by the probability of a default.

The Title XVII loan guarantee program is unique among federal loan guarantee programs in that project developers are expected to pay the budget subsidy cost of the loan guarantee. This “self-pay” or “user-financing” feature offsets the risk-adjusted cost to the government of providing the guarantee. The self-pay amount is retained by the government regardless of whether the project defaults or not. If there is no default, the self-pay amount represents a financial return to the Treasury for agreeing to assume the risk during the period that the guarantee was in effect. Given a rational approach to implementation, in which projects are selected based on a high likelihood of commercial success with the loan guarantees, there will be minimal risk of default and therefore minimal risk to the taxpayer.

The Title XVII loan guarantee program is a financing tool, which should be modeled on the successful financing practices already employed by the federal government (through such agencies as the Export-Import Bank and the Overseas Private Investment Corp.). By allowing projects to overcome the barriers that preclude private financing, the loan guarantee program is designed to stimulate investment in high-capital-cost projects that are in the nation’s best interest because they improve U.S. energy security, meet growing electricity demand, reduce emissions, accelerate the commercialization of advanced technologies, and ensure the reliable operation of the electricity system.

In addition, loan guarantees provide substantial consumer benefits. The cost of electricity to all consumers – residential, commercial and industrial – will increase significantly in the years ahead, due to sustained upward pressure on natural gas prices, and heavy capital investment in new transmission facilities, environmental control technologies, and new generating capacity. A sustained period of upward pressure on electricity prices has negative implications for U.S. economic growth and the competitiveness of American industry in a global marketplace. An effective loan guarantee program can reduce electricity costs significantly, providing substantial benefits to electricity consumers. For example, according to financial modeling performed by the Nuclear Energy Institute:

1. A new nuclear plant with an overnight capital cost of just over \$2,800 per kilowatt will produce electricity for approximately \$84.00 per megawatt-hour in its first year of

operation, if the plant is financed with equal amounts of debt and equity (assuming debt financing was available for such a project, which is unlikely).

2. The same plant, with a federal loan guarantee for 80 percent of project cost, will produce electricity in its first year for approximately \$59 per megawatt-hour, because of the higher leverage and the fact that debt is less costly than equity.
3. The plant financed with a loan guarantee thus delivers a consumer benefit of \$25 per megawatt-hour, or approximately \$275 million per year for the average new nuclear plant.

### **The Critical Importance of Loan Guarantees In Supporting the Financing of New Nuclear Generating Capacity**

It will be a formidable challenge to finance the advanced electric generating technologies needed to (1) meet growing U.S. demand for baseload electricity over the next 15 to 20 years, (2) increase energy independence, and (3) meet more stringent environmental standards.

The new nuclear plants now in the early stages of development are capital-intensive projects and will require a level of capital investment that will strain the financing capability of the U.S. electric sector, particularly since that investment in new generating capacity coincides with a period of heavy capital investment by the electric sector in transmission, distribution and environmental control technologies. Consensus estimates suggest that the industry, over the next 15 years, must invest between \$750 billion and \$1 trillion in new generating capacity, new transmission and distribution infrastructure and environmental controls. This new capital spending represents a major challenge to the electric power industry.

All of these investments are necessary to ensure the continued safe and reliable operation of the United States electricity system.

Addressing this challenge successfully will require innovative approaches to financing, combining all the financing capabilities and tools available to the private sector, the federal government and state governments.

The loan guarantee program authorized by Title XVII of the Energy Policy Act of 2005 is one of those tools and is essential to support the financing of new nuclear plants. The loan guarantee program will allow companies to employ project financing on a non-recourse basis. The ability to use non-recourse project finance structures offsets the most significant financing challenge facing new baseload power plant construction – the cost of baseload projects relative to the size, market value and financing capability of companies that will build them. New nuclear projects are \$4-5 billion undertakings at least. Although \$4-5 billion projects are not unique in the energy business, such projects are typically built by much larger companies with market values 10-15 times higher than the largest electric companies. All the companies that have announced plans for new nuclear power plants have a combined market value only slightly more than one-half the market value of ExxonMobil. Even Exelon, my company, with a market value of approximately \$40 billion, is not large enough to finance a single nuclear plant without the federal loan guarantees.

Project financing, supported by loan guarantees, also allows a more efficient, leveraged capital structure to reduce project cost by lowering the weighted average cost of capital, and thus provides a substantial consumer benefit in the form of lower electricity prices. Loan guarantees also mitigate the impact on the balance sheet of these large capital projects which would otherwise place stress on credit quality and bond ratings.

Loan guarantees are equally important to unregulated companies, operating in states that have restructured their electric power industries, and to regulated companies subject to cost-of-service regulation. Unregulated companies will be hard-pressed to build nuclear power plants and other large capital-intensive baseload projects except on a project finance basis with the debt financing secured by the federal government. Unregulated companies do not have the capacity to finance these projects on balance sheet without access to project finance structures. Some regulated companies, especially those pursuing multiple generating and transmission projects at the same time, may also be limited in their ability to finance projects without project finance capability because of substantial pressure on credit quality and debt ratings.

In addition, the capital markets that will provide the debt financing for new nuclear projects regard loan guarantees as essential to protect investors against potential licensing, regulatory and political risks associated with new nuclear plant construction.

The 2005 Energy Policy Act included several incentives designed to stimulate investment in new nuclear power plants. These incentives were provided as a package to address different risks associated with new nuclear power plants. Our analysis of new nuclear plant financing, and our discussions with the banking community since the passage of the 2005 energy legislation, suggests that the loan guarantee program is clearly the most important of all the incentives in the Energy Policy Act.

The Act provided a production tax credit for nuclear plants that file applications for construction/operating licenses before the end of 2008 and start construction by the beginning of 2014. These credits will improve the financial attractiveness of a nuclear project when it is in commercial operation, and help offset the economic risk associated with the first projects. Our major challenge is construction financing, however, and the construction period is when a new nuclear project most needs investment support. The production tax credit does not help address the construction risks and financing challenge during construction.

The Energy Policy Act also provides a form of insurance – called standby support – to protect project developers against delays caused by licensing or litigation over which they have no control. But this insurance protection is severely limited. The insurance covers debt service up to certain limits for a limited period of time, but would not cover other substantial costs borne by a nuclear plant subject to a delay in commercial operation. Although standby support addresses a limited portion of the risk associated with potential delays experienced by the first six plants, I do not believe the standby support will be a critical factor in any board of directors' decision to authorize construction of a nuclear power plant.

The loan guarantee program is, therefore, the single most important instrument provided by the Energy Policy act to support financing of new nuclear generating capacity. Yet we are almost

two years past passage of the Energy Policy Act, and we still do not have final regulations to implement the loan guarantee program, the Department of Energy does not have staff to evaluate projects, neither the Congress or the White House have provided sufficient loan authorization to support even one new nuclear plant, and we have no idea what a loan guarantee will cost.

### **Nuclear Energy Industry Perspective on the Minimum Conditions Necessary For a Successful Energy Loan Guarantee Program**

**The loan guarantee must cover 100 percent of project debt.** The Energy Policy Act authorizes the Secretary of Energy to guarantee up to 80 percent of total project cost. In its August 2006 Guidelines for the energy loan guarantee program, the Department of Energy determined that the guarantee would cover only 80 percent of the project debt, not 80 percent of the project cost. This approach would reduce the guarantee to “80 percent of 80 percent” – e.g., only 64 percent of the total project cost would be covered by the guarantee. The investment banks that will provide the debt financing for new nuclear projects have indicated that it will not be possible to fund the remaining “20 percent of 80 percent” in the un-guaranteed debt markets on commercially reasonable terms.

In addition, there is no basis in law or administrative practice for restricting the guarantee to 80 percent of project debt. The policy limiting coverage under federal loan guarantees to 80 percent of the loan amount is an administrative guideline in OMB Circular No. A-129. It is not a statutory requirement, and the Federal Credit Reform Act of 1990 does not address the issue of percentage loan coverage for federal loan guarantees.

OMB Circular A-129 (Part II, Section 3a) states that “[p]rivate lenders who extend credit that is guaranteed by the Government should bear at least 20 percent of the loss from a default” (emphasis added). Thus, the policy is not mandatory but suggestive in nature. Circular A-129 also provides flexibility in the application of the guideline on 80 percent loan coverage. It states: “The policies and standards of this Circular do not apply when they are statutorily prohibited or are inconsistent with statutory requirements” (emphasis added). The guideline for 80 percent coverage of debt is inconsistent with the requirement in EPAct Section 1702 (c), which authorizes that “a guarantee by the Secretary shall not exceed an amount equal to 80 percent of the project cost.” The application of Circular No. A-129 would prevent the Secretary from ever reaching the statutory cap. Administrative practice in other federal loan guarantee programs also allows for flexibility in setting loan guarantee limits up to statutory caps.

The FY2007 budget included \$238 billion in new loan guarantee commitments; \$177.2 billion of that provided 100 percent loan coverage. The FY2008 budget proposal included \$289 billion in new loan guarantee commitments; \$217 billion of that provided 100 percent loan coverage. Clearly, 100 percent coverage of the debt portion of the financing is the rule in federal loan guarantee programs, and the approach taken by DOE in its August 2006 Guidelines is an egregious exception to that rule.

**The Program Must Have Rigorous Project Evaluation Criteria.** The process of evaluating projects and selecting those that qualify for loan guarantees must be rigorous and disciplined, employing transparent project finance risk evaluation criteria of the kind used by commercial

banks, rating agencies, and other government agencies (like the Export-Import Bank) that operate successful loan guarantee programs.

We believe the Department of Energy should focus the loan guarantee program design on credit analysis and underwriting of the kind any bank would employ to lend money. We believe the pending rulemaking should establish a set of risk-based evaluation criteria to ensure that credit risks are rigorously analyzed, quantified, scored and appropriately priced or mitigated. The Department then should have the flexibility, as provided in the statute, to structure loan guarantees that will enhance the statutory objective of commercializing innovative technologies, with projects that are financially sound and have the financial capacity to repay the underlying loan obligation guaranteed by the U.S. government. This process would be supplemented by third-party consultants and reports that are standard for project financings, such as independent engineers, fuel consultants, insurance advisors and market studies.

This approach, using rigorous credit analysis and risk assessment, will minimize taxpayer risk.

**Flexibility is essential.** The implementing regulations should provide a high degree of flexibility – e.g., on the term of the loan of the guarantee, and the percentage of debt in the project. This will allow project sponsors to structure projects as best suits their needs. Different technologies and different companies will wish to employ different levels of debt in their project capital structure. Different technologies and companies may choose different durations for the loan guarantee – in some cases, projects may need a guarantee for the full 30-year term authorized by the Energy Policy Act, while others will need a shorter duration. Such differences in project capital structure, percentage of debt being guaranteed and duration of the guarantee should be reflected in the credit subsidy costs paid by the project sponsor.

**Subsidy cost and calculation.** The implementing regulations should include a transparent methodology to calculate the credit subsidy cost that will be paid by the project as a loan guarantee fee, and that subsidy cost should be reasonable and commercially viable, in line with those of other Federal loan guarantee programs. Project sponsors should be allowed to include the credit subsidy cost as part of the total project cost, and finance it over the term of the guarantee. This is standard practice in other federal loan guarantee programs, including the Export-Import Bank.

**The Loan Volume Limitation Must Recognize the High Cost of Major Energy Projects.** The President's FY 2008 budget proposes a \$9-billion loan volume limitation, with only \$4 billion of the \$9 billion allocated to large power projects like nuclear power plants. Given the cost of new energy infrastructure projects (including new nuclear plants, coal gasification plants and coal-to-liquids projects), a robust and viable loan guarantee program will require significantly larger annual loan volumes in future fiscal years.

### **Nuclear Industry Concerns about Implementation Of the Loan Guarantee Program To Date**

On August 8, 2006, the Department of Energy published initial guidelines (DOE Guidelines) under which it will implement the loan guarantee program, accompanied by an initial solicitation

for projects. Nuclear projects were not included in the initial solicitation. The Department indicated that nuclear projects will be covered by formal regulations to be developed over the next year.

In terms of supporting financing of new nuclear and advanced coal-based baseload power plants, the DOE Guidelines significantly erode the value of the loan guarantee program authorized by Title XVII. The procedures outlined in the guidelines are so restrictive that they would not support construction and financing of new baseload power plants. If the regulations now being developed mirror the guidelines published in August 2006, the loan guarantee program would not support new advanced nuclear power plants, and will thus fail to fulfill part of the statutory intent – to spur construction of new, cleaner baseload capacity.

The industry's major sources of concern with the August 2006 DOE Guidelines are discussed below.

- 1. EPC Act Title XVII authorizes loan guarantees up to 80 percent of total project cost. The DOE Guidelines limit coverage to 80 percent of the loan amount (80 percent of 80 percent), with flexibility to guarantee above 80 percent, but never 100 percent.**

#### *Industry Position*

There is no basis in law or administrative practice for restricting the guarantee to 80 percent of project debt. If incorporated into the implementing regulations, this restriction would reduce the value of the loan guarantees by approximately one-half, increase the project's capital costs and thereby compromise project economics.

As discussed above, the policy limiting coverage under federal loan guarantees to 80 percent of the loan amount is an administrative guideline, not a statutory requirement. Administrative practice in other federal loan guarantee programs also allows for flexibility in setting loan guarantee limits up to statutory caps.

- 2. Any commercial debt brought into a project must be subordinate to the government-guaranteed debt. *Pari passu* financing structures would be prohibited under the DOE Guidelines.**

#### *Industry Position*

It is not uncommon in federal government loan guarantee programs to have a second tranche of non-guaranteed commercial debt in a project. Any such commercial debt is, however, typically *pari passu* with the guaranteed debt. The requirement in the DOE Guidelines that any commercial debt must be subordinate to the guaranteed debt will significantly restrict the interest of commercial lenders and the availability of financing for the program, especially in view of the size of the projects. By making this program less attractive to top-tier lenders and effectively requiring more expensive sub-debt financing structures, the financeability of a project is significantly compromised. Furthermore, the guidelines appear to prohibit the substitution of



equity for the unguaranteed portion of debt. As a result, this restriction could actually erode a project's creditworthiness, rather than enhancing the credit structure.

**3. The DOE Guidelines should clarify that the guaranteed debt is non-recourse beyond the project.**

*Industry Position*

The statute makes clear (Section 1702(g)(4)(B)) that, in the event of default, the loan guarantee is non-recourse beyond the project: "If the borrower defaults on an obligation, the Secretary shall notify the Attorney General of the default . . . . On notification, the Attorney General shall take such action as is appropriate to recover the unpaid principal and interest due from -- (i) such assets of the defaulting borrower as are associated with the obligation; or (ii) any other security pledged to secure the obligation."

This non-recourse provision is essential for successful project finance structures. If the guaranteed loan is recourse beyond the project—e.g., to the balance sheet of a project sponsor—the rating agencies will impute that debt to that project sponsor's balance sheet, and require the company to increase the amount of equity in its capital structure in order to maintain its overall debt rating. This would offset much of the economic benefit of the guarantee.

The DOE Guidelines, however, are equivocal on the issue of recourse, at best. The Guidelines require the Secretary of Energy, before finalizing a loan guarantee agreement, to ensure that "the prospective borrower has pledged project assets and other collateral or surety, including non-project-related assets, as determined by the Secretary to be necessary as assurance for the repayment of the loan." The implementing regulations should clarify that guaranteed loans will require security in only the project assets, contracts and agreements.

A project sponsor should, at its discretion, have the flexibility to pledge additional assets or other forms of security as collateral (e.g., to reduce the credit subsidy cost of the loan guarantee), and the implementing regulations should provide this flexibility.

**4. The DOE Guidelines require a project sponsor to obtain a credit assessment of the project in the absence of the loan guarantee from a nationally recognized debt-rating firm.**

*Industry Position*

Because the loan guarantee will be a critical factor affecting the project's economics—e.g., interest costs and leverage factors—and since the industry believes it would be impossible to obtain financing for an advanced nuclear project with 80percent leverage absent the federal loan guarantee, obtaining a credit assessment for the project without the guarantee is not likely to be useful. Such an assessment would likely demonstrate why these innovative technologies require loan guarantees to obtain financing. It would be more appropriate to evaluate the creditworthiness of the project taking into account the loan guarantee. An independent analysis of the project by consulting engineer or other reputable firm would provide more relevant

information for assessing project viability and risk. In fact, such an analysis would be required by the lenders in order to evaluate the project.

The rating agency requirement represents an unnecessary expenditure of time and funds. To the extent that DOE requires a third-party credit assessment of the project as part of its credit analysis, or in the determination of Subsidy Cost, project sponsors should not be limited to utilizing one of the rating agencies and should have the ability to obtain the credit assessment from other acceptable independent firms.

**5. The DOE Guidelines exclude the subsidy cost as well as fees paid for administrative costs from project cost.**

*Industry Position*

The DOE Guidelines exclude the subsidy cost and the fees paid for administrative costs of issuing a loan guarantee from the definition of project cost. These costs are financing costs incurred and expended by the sponsors and should be included in project cost. These exclusions are inconsistent with the treatment of similar costs in commercial project financing and in other federal programs. For example, the exposure fee charged by Ex-Im Bank is not only counted as a project cost, but borrowers can elect to have that cost financed under the Ex-Im Bank loan or loan guarantee.

**Conclusion**

The U.S. electric power industry faces a major challenge in financing and building the generation, transmission and distribution infrastructure necessary to support U.S. economic growth and maintain reliability. Simply maintaining nuclear power at its current position – approximately 20 percent of U.S. electricity supply – will require construction of 50,000 megawatts of new nuclear generating capacity (approximately 35 large plants) by 2030. The U.S. nuclear industry is positioning itself to meet this challenge: 16 companies or groups of companies are now preparing license applications for as many as 30 new nuclear plants.

An effective loan guarantee program is essential to maintain this momentum.

Given the cost of new nuclear power plants relative to the size of the companies that will build them, and given lenders' unwillingness to provide debt financing to new nuclear plants in the fact of unknown licensing and regulatory risks, the energy loan guarantee program is essential to support financing of a limited number of new nuclear plants. When investors gain confidence that these projects can proceed through construction and into commercial operation without regulatory or political interference, it is likely that the private capital markets will be prepared to undertake nuclear plant financing without the federal credit support authorized by Title XVII of the Energy Policy Act.