Dr. Ronald L. Simard
Senior Director, Business
Services Department
Business Operations Division

October 30, 2001

Chair, Council on Environmental Quality
Executive Office of the President
17th and G Streets, NW
Washington, DC 20503

Attention: Task Force

Subject: *Federal Register* Notice 66 FR 43586, August 20, 2001, Notice and request for comments on task force formation

The Nuclear Energy Institute (NEI)[1] is submitting these comments on behalf of the nuclear energy industry in response to the subject *Federal Register* notice. The industry recognizes the importance of our existing 103 nuclear energy plants in meeting the environmental and energy supply objectives of Executive Order 13212. Further, the siting and construction of new nuclear plants is essential in meeting the demand for more electricity without exacerbating clean air concerns.

The Energy Information Administration projects a need, by 2020, to add 400,000 megawatts of new and replacement generating capacity. Today, 30 percent of our electricity is generated without emitting airborne pollutants and greenhouse gases. Maintaining that 30 percent share will require significant increases in generation from nuclear energy and renewables, on the order of 50,000 megawatts from new nuclear plants. The siting and construction of new nuclear plants in a timely manner will require a licensing process that fixes the problems of the past.

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plants designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

The need for a more efficient nuclear plant siting process was recognized by Congress in the Energy Policy Act of 1992. A process was created that allows all site suitability issues to be addressed, with full public participation, in advance of a commitment to construction. The new process has not yet been used. However, several power companies are now evaluating whether to apply for the first ever Early Site Permits. A description of the licensing process for future nuclear plants is attached.

Given the relevance of this process to the objectives of the Executive Order, we recommend that the Task Force address ways to expedite and improve the efficiency of the Early Site Permit process. We also recommend that the Task Force membership be augmented to include a representative from the Nuclear Regulatory Commission.

We would be pleased to offer further nuclear industry perspectives as the Task Force carries out its responsibilities. Please contact me at (202) 739-8128 if you have any questions.

Sincerely,

R. Simard

Ronald Simard

Enclosure

Nuclear Power Plant Licensing

The Energy Policy Act of 1992 included provisions on nuclear plant licensing reform that have been codified by the NRC in its rules and regulations.

Nuclear licensing reform ensures that all major design, safety, siting, emergency planning and other regulatory issues are resolved as early as possible—before construction begins and billions of dollars are spent. This is possible because future nuclear power plants will be almost fully designed when they are ordered. U.S. owners will not have to seek permission to build a nuclear plant that is only partly designed. They will not find it necessary to perform extensive design and engineering work during construction.

The reformed process contains three major provisions. All involve extensive NRC reviews and opportunities for appropriate public participation.

Early Site Approval. Electric companies can request NRC approval to "bank" sites for future nuclear plants. This process is designed to resolve all siting issues-geology, seismology, hydrology and other environmental issues-before plant construction begins.

Design Certification. Nuclear reactor vendors submit their nuclear plant designs to the NRC for review and approval (called "certification"). These designs provide all the necessary engineering details on safety-related systems and components. Once a design is certified, companies can order that plant, confident that design and safety issues have been resolved. Three advanced light water reactor designs have been reviewed and certified by the NRC.

Construction/Operating License. When it has selected a design, an electric company may request a combined construction/operating license for the plant. The application must contain details on inspections, tests, analyses and acceptance criteria that will be performed during construction. The company will be required to prove that the plant was built to its license requirements and can be operated safely. The NRC must ensure that the acceptance criteria have been met before it allows the plant to operate. The application must also address site-specific environmental and design factors that were not resolved in other reviews, such as early site approval.

The site for the plant can be one that has already received an Early Site Permit as part of the early site approval process, or it can be one that will be reviewed as part of the construction/ operating license review process.

This three-stage process improves the former licensing process in two significant ways. First, it requires the availability of all necessary information to allow public input on design, siting and construction issues early in the process, when such input is most meaningful. Second, it provides a more stable regulatory environment, which is required before companies, other organizations or consortia will undertake the large financial investment involved in building a nuclear power plant.

Nuclear Power Plant Licensing: How the Early System Evolved

Today's nuclear power plants were licensed under a system that dates back to the 1950s, when commercial nuclear energy was in its infancy.

The 1950s-vintage licensing process had two major steps: (1) the construction permit and (2) the operating license. Both steps required formal adjudicatory hearings with opportunities for participation by members of the public and others who had questions or concerns about the plant.

The Construction Permit Stage. Under the old system, because nuclear technology and government regulations were still evolving, construction permits were commonly granted to companies for nuclear plants whose designs were incomplete. Most of these plants were built on a "design-as-you-go" basis. Design and safety issues raised in public hearings couldn't be finally resolved because the design had not yet been completed.

The Operating License Stage. When the plant was complete, the company requested an operating license. Hearings at that stage dealt with all design and safety issues, because this was the first time complete design details were available for public scrutiny. Any other significant plant operating features, such as emergency plans, also were evaluated at that time. Unfortunately, this also created a difficult situation—for both the public and the electric companies. The company, when it had satisfied all safety requirements and had invested considerable money in the plant, needed to begin recovering its investment by operating the plant.

On the other hand, members of the public had a right to raise concerns about design and safety issues in judicial-type hearings before NRC licensing boards—no matter how long such hearings took. As a result, operating license hearings were sometimes bitterly contested, divisive proceedings that caused unnecessarily protracted delays in plant operation. And in some cases, these delays added hundreds of millions of dollars to the cost of the nuclear plants—mostly in the form of interest payments on debt.

Impact on Nuclear Power Plant Costs. Although the 62 U.S. nuclear power plants built before 1979 took an average of only five years to build and license, later nuclear plants took an average of almost 12 years to build and license—twice as long as nuclear plants in France, Japan, Sweden and some other countries. Longer construction times meant higher costs. This was one reason the cost of nuclear power plants in the United States rose from $300-$500 million in the 1970s to an average of about $3 billion in the 1980s. In a few cases, interest expenses represented half the total cost of these plants.

In many cases, longer construction times were caused by changing regulatory requirements—in such areas as fire protection and seismic criteria, and as a result of lessons learned from the 1979 accident at Three Mile Island Unit 2. Because of regulatory changes, plants under construction in the 1980s had to make extensive and costly design and equipment changes during construction.

The reforms in nuclear plant licensing will reduce the likelihood of that situation being repeated in the future by creating a stable, predictable process that ensures meaningful public participation at every step. With new, standardized plants and a reformed process for licensing them, the public will be able to satisfy itself that nuclear plants are safe and safely built; companies will have all regulatory issues settled before construction begins and can count on a stable, predictable process; and company customers will have a cost-effective source of electricity. The reformed licensing process turns a no-win situation into a win-win situation.

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