STATEMENT SUBMITTED

BY THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

UNITED STATES SENATE

CONCERNING

NUCLEAR ENERGY SUPPLY ASSURANCE ACT

S. 472

SUBMITTED BY
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U.S. NUCLEAR REGULATORY COMMISSION

TESTIMONY ON THE NUCLEAR ENERGY SUPPLY ASSURANCE ACT

Introduction

Mr. Chairman and members of the Committee, I am pleased to submit this testimony on behalf of the U.S. Nuclear Regulatory Commission (NRC) concerning three sections of S. 472. One section (Section 130) requires a report to the Congress on the state of nuclear power generation in the United States. The other two sections (Sections 201 and 205) discuss the establishment and implementation of a research program to support resolution of potential licensing issues associated with new reactor concepts and new technologies for nuclear power plants.

As the Committee knows, the Commission's mission is to ensure the adequate protection of the public health and safety, the common defense and security, and the environment in the application of nuclear technology for civilian use. The Commission does not have a promotional role; rather, the agency's role is to ensure the safe application of nuclear technology. The agency's perceptions of the three sections of S. 472 are presented from this perspective.

1. Section 130 requires the Nuclear Regulatory Commission to report to Congress on the state of nuclear power generation in the United States.

The NRC would be pleased to provide a report on the status of its activities related to nuclear power generation, and on NRC's work to prepare for future applications and the complex issues related to licensing and regulating nuclear power facilities.

While such a report could provide information and insights related to nuclear power generation and electricity supply for the country, we would caution that the NRC would prepare such a report from the perspective of a safety regulator. Economic issues will be of central importance in defining the future course of nuclear power in this country and the NRC, which does not engage in economic regulation, does not have any particular insights on such matters. In particular, with respect to advanced reactor designs and future applications, the report would address NRC's readiness for such future applications rather then the relative merits from an energy policy perspective of the designs being considered. Congress will have to decide whether a report from the perspective of the NRC will serve the policy needs of Congress.

2. Sections 201 and 205, requires the NRC to develop a comprehensive research program to support resolution of potential licensing issues associated with nuclear reactor concepts and new technologies that may be incorporated into new or current designs of nuclear power plants.

The Commission approves of the direction in S. 472 to develop a research program to support resolution of licensing issues for new reactor designs and technologies and appreciates the recognition of the importance of NRC's research program to any successful licensing of new nuclear power plants. The Commission believes that a strong nuclear research program needs to be maintained to support our regulatory activities, including activities relating to new concepts and designs. The NRC's research program has historically provided valuable information to support a wide spectrum of regulatory activities. Research has provided the technical basis for license renewal and

for the certification of advanced plant designs, such as the Westinghouse AP-600, General Electric's Advanced Boiling Water Reactor, and Combustion Engineering's System 80+. Research programs have allowed the NRC to address reactor pressure vessel issues, steam generator issues, and issues associated with longer fuel burnup and power uprates. Perhaps most fundamentally, research has developed the analytical tool, probabilistic risk assessment, that underlies the NRC's efforts to implement a more risk-informed regulatory paradigm.

In addition to the three certified advanced reactor designs, there are new nuclear power plant technologies, which some believe can provide enhanced safety, improved efficiency, lower costs, as well as other benefits. The Commission has already begun to undertake the groundwork for the effort sought by S. 472. To ensure that the Commission staff is prepared to evaluate applications to introduce these advanced nuclear reactors, the Commission recently directed the staff to assess the technical, licensing, and inspection capabilities that would be necessary to review an application for an early site permit, license application, or construction permit for a new reactor unit. This will include evaluating the capability needed to review the designs for generation III+ or generation IV reactors, such as the Westinghouse AP-1000, the Pebble Bed Modular Reactor, General Atomics' Gas Turbine Modular Helium Reactor, and the International Reactor Innovative and Secure (IRIS) designs. The Commission will also examine its regulations relating to reactor licensing, such as 10 CFR Parts 50 and 52, in order to identify whether any enhancements are necessary. NRC's research program will provide important information and contributions to these efforts.

Decisions concerning research programs that address new designs, as well as other possible new technologies and concepts, must consider the potential for applications for the new designs and technologies. The first priority must be on those designs or concepts that appear most likely to be pursued by licensees. In addition, such decisions must include consideration of the timing of potential requests for NRC approval to use new technologies and designs. The NRC seeks to assure the availability of research results to support timely decision making. Such decisions must also include consideration of resources for and the method of funding of new research programs. Operating reactor licensees have expressed concern about the fees imposed on them and, as a result, about the size of the NRC's budget. One approach that would address licensee concerns is to fund additional research from the general fund, as opposed to funding additional activities from the fee-based portion of NRC's budget. Such support could be justified on the basis of the broad public benefit from such research.

The funding proposed in S. 472 would be used to augment and accelerate research programs in support of the future application of new technologies in operating reactors (e.g., behavior of advanced fuel designs, advanced instrumentation controls and sensors), and to establish new programs to address the technical needs identified in the Commission's assessment of future licensing capabilities.

The Commission believes that its past research programs have made important contributions to support the NRC's regulatory activities in many areas. We welcome the opportunity to work with the Congress to develop and implement research programs to address new reactor designs, as

well as new technologies and concepts which could be incorporated into new or current nuclear plants.

Thank you Mr. Chairman. I welcome your comments and questions.