STATEMENT SUBMITTED

BY THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

UNITED STATES SENATE

CONCERNING

PRICE-ANDERSON ACT RENEWAL
AND
NUCLEAR ENERGY PRODUCTION
AND EFFICIENCY INCENTIVES

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Mr. Chairman, Members of the Committee, I am pleased to appear before you today to present the views of the Nuclear Regulatory Commission (NRC) on extending and amending the Price-Anderson Act and on nuclear energy production and efficiency incentives. We hope that these views will assist the Committee in its consideration of these provisions in the energy policy bills pending before you (S.388, S. 472, and S.597). Our testimony, of course, addresses the application of these provisions to nuclear power plants regulated by the NRC.

PRICE-ANDERSON ACT RENEWAL

As to Price-Anderson, I am here to deliver the strong and unanimous recommendation of the Commission that the Price-Anderson Act be renewed with only minor modifications. But I would like to preface my statement of that position with the reminder that the Commission's primary concern is public health and safety. Our mission is to ensure the safe use of nuclear power. We can look back on a successful history of safe operation and intend to exercise vigilance to maintain or improve on this record of safety. Nonetheless, it remains important to assure that if an improbable accident should occur, the means are provided to care for the affected members of the public. It is also important, if the Congress intends that nuclear power remain a part of the nation's energy mix, that this option is not precluded by the inability of nuclear plant licensees to purchase adequate sums of insurance commercially.

As you know, Congress first enacted the Price-Anderson Act in 1957, nearly a half century ago. Its twin goals were then, as now:

(1) to ensure that adequate funds would be available to the public to satisfy liability claims in a catastrophic nuclear accident; and

(2) to permit private sector participation in nuclear energy by removing the threat of potentially enormous liability in the event of such an accident.

On original passage the Congress provided a term during which the Commission could extend Price-Anderson coverage to new licensees and facilities. When that term expired, the Congress then, and repeatedly since, has decided that the nation would be served by extending the Price-Anderson Act so that new coverage would be available for newly licensed reactors. This action preserved the option of private sector nuclear power and assured protection of the public. At this point, in order to avoid confusion, I should note that Price-Anderson coverage for NRC licensees is granted for the lifetime activities of the covered facility and does not "expire" in 2002. Thus, in any event, Price-Anderson coverage with respect to already licensed nuclear power reactors will continue and will afford prompt and reasonable compensation for any liability claims resulting from an accident at those facilities.

While Congress has amended the Price-Anderson Act from time to time, it has done so cautiously so as to avoid upsetting the delicate balance of obligations between operators of nuclear facilities and the United States government as representative of the people.

Perhaps the most significant amendments to date were those that effectively removed the United States government from its obligation to indemnify any reactor up to a half billion dollars and that placed the burden on the nuclear power industry. Congress achieved this by mandating in 1975 that each reactor greater than 100 MWe, essentially each reactor providing power commercially, contribute $5 million to a retrospective premium pool <u>if</u> and <u>only if</u> there

were damages from a nuclear incident that exceeded the maximum commercial insurance available. The limit of liability was then $560 million. Government indemnification was phased out in 1982 when the potential pool and available insurance reached that sum.

In 1988, Congress increased the potential obligation of each reactor in the event of a single accident at any reactor to $63 million (to be adjusted for inflation). The maximum liability insurance available is now $200 million. When that insurance is exhausted each reactor must pay into the pool up to $83.9 million, as currently adjusted for inflation, if needed to cover damages in excess of the sum covered by insurance. The $83.9 million is payable in annual installments not to exceed $10 million. Today, the commercial insurance and the reactor pool together would make available over $9 billion to cover any personal or property harm to the public caused by an accident.

In 1982, when the federal government ceased to be the backup insurer in the event of a power plant accident, the retrospective premium pool was still counted in hundreds of millions of dollars. Today the funds available to assist the public, counted in <u>billions</u> of dollars, are more than 15-times as great as they were in 1982. No other country in the world today matches this level of protection available for people injured and property damaged by a nuclear power plant accident.

In 1998, as mandated by Congress, the Nuclear Regulatory Commission submitted to the Congress its report on the Price-Anderson system. The report included a concise history and overview of the Price-Anderson Act and its amendments as well as an update on legal developments and events pertaining to nuclear insurance and indemnity in the last decade. Congress had also required the NRC to address various topics that relate to and reflect on the

need for continuation or modification of the Act: the condition of the nuclear industry, the state of knowledge of nuclear safety, and the availability of private insurance.

After considering pertinent information, the Commission considered what its recommendations should be. It concluded then that it should recommend that Congress renew the Price-Anderson Act because it provides a valuable public benefit by establishing a system for the prompt and equitable settlement of public liability claims resulting from a nuclear accident. That, as I said at the outset, remains today the strongly held position of the Commission.

Having noted that substantial changes in the nuclear power industry had begun and could continue, the Commission believed it would be prudent to recommend renewal for only ten years rather than the 15-year period that had been adopted in the last reauthorization so that any significant evolution of the industry could be considered when the effects of ongoing changes would be clearer. Notwithstanding that view, the Commission, recommended that the Congress consider amending the Act to increase the maximum annual retrospective premium installment that could be assessed each holder of a commercial power reactor license in the event of a nuclear accident.

The NRC suggested that consideration be given to doubling the ceiling on the annual installment from the current sum of $10 million to $20 million per year per accident. The total allowable retrospective premium per reactor per accident was to remain unchanged at the statutory "$63 million" adjusted for inflation. (It is now $83.9 million as so adjusted). The Commission recommended consideration of an increase to $20 million because it then appeared likely that in the coming decade a number of reactors would permanently shut down.

The effect of these shutdowns would have been to reduce the number of contributors to the reactor retrospective pool. Fewer contributors would, in turn, reduce the funds that, in the event of a nuclear accident, would become available each year to compensate members of the public for personal or property damage caused by an accident. Increasing the maximum annual contribution available from each reactor licensee would provide continuing assurance of "up front" money to assist the public with prompt compensation until Congress could consider whether to enact additional legislation providing further relief, should it be needed.

Recent events have led the Commission to review its 1998 recommendations and to reevaluate its recommendation that Congress consider increasing the annual installment to $20 million. There is now a heightened interest in extending the operating life for most, if not all, of the currently operating power reactors, and some power companies are now examining whether they wish to submit applications for new reactors or complete construction of reactors that had been deferred. As a result, the Commission does not believe that there is now justification for raising the maximum annual retroactive premium above the current $10 million level.

NUCLEAR ENERGY PRODUCTION AND EFFICIENCY INCENTIVES

Moving briefly to the matter of nuclear energy production and efficiency incentives contained in certain of the pending bills, we would first note, by way of background, that the nation's nuclear electricity generators have worked over the past 10 years to improve nuclear power plant performance, reliability, and efficiency. According to the Nuclear Energy Institute, the improved performance of the U.S. nuclear power plants since 1990 is equivalent to placing 23 new 1000 MWe power plants on line. The average capacity factor for U.S. light water reactors was 88 percent in 2000, up from 63 percent in 1989. I must stress that the

Commission has always focused on ensuring that safety is not compromised as a result of these industry efforts to improve efficiency and increase production.

With regard to the production incentive provision in S. 388, the Commission would advise caution. The Commission has previously elaborated upon the potential impacts of performance incentives in a 1991 policy statement "Possible Safety Impacts of Economic Performance Incentives: Final Policy Statement," published in the Federal Register on July 24, 1991 (56 FR 33945). The Commission stated a concern with incentive plans such as the one proposed here, that, in the interest of real or perceived short-term economic benefit, the utility might hurry work, take short cuts, or delay a shutdown for maintenance in order to meet a deadline, a cost limitation, or other incentive plan factor. Therefore, such an incentive program could directly or indirectly encourage the utility to maximize measured performance in the short term at the expense of plant safety and public health and safety. By keeping a reactor on line when it should be taken down for preventive or corrective maintenance and by using shortcuts or compressed work schedules to minimize down time, the licensee could decrease the margin of safety.

A primary problem with the proposed production incentive is the short-term interval for measuring performance. Performance measurements for short-term intervals would encourage the licensee to focus on a short-term target, potentially diverting attention from long-term goals of reliability and operational safety. In contrast, performance measurements for long-term intervals would prompt the utility to follow sound maintenance and operational practices to improve operating performance. For example, an incentive program could include evaluation of a three or four-year capacity factor, with account taken for other factors such as refueling outages, inclement weather and other periodic events. Short-term measurements tend to make

safety and economic goals conflict with each other, while long-term measurements tend to make the two goals complementary.

If a production incentive provision is enacted, the NRC would of course continue to maintain its safety oversight to ensure that reactor licensees' operations are adequate to protect public health and safety. However, the Commission would not like to see the introduction of any production incentive with the potential to distract licensees from safe operation.

On the matter of incentives for reactor power uprates, we would also note that in recent years, the Commission has approved numerous license amendments that permit licensees to make relatively small power increases or uprates. Typically, these increases have been approximately 2 percent to 7 percent. These uprates, in the aggregate, resulted in adding approximately 2000 MWe or the equivalent of two new 1000 MWe power plants.

The NRC is now reviewing six license amendment requests for larger power uprates. These requests are for Boiling Water Reactors (BWRs) and are for uprates of 15 percent to 20 percent. Based on a recent survey, the NRC staff estimates that as many as 46 plants may request uprates over the next 5 years. These uprates, if allowed, could add substantial additional capacity to the grid. The incentive provisions in the pending bills could result in even more additions or an acceleration of requests for uprates.

Approvals for uprates are granted only after a thorough evaluation by the NRC staff to ensure safe operation of the plants at the higher power level. Plant changes and modifications are necessary to support a large power uprate, and thus require significant financial investment

by the licensee. While the NRC does not know the number of uprate requests that will be received, the staff is evaluating ways to streamline the review and approval process. We would note that power uprates of 5 percent or more are considered by the NRC staff to be substantial and to require significant technical review and analysis. Should the power uprate incentive provisions of the pending bills be enacted, the NRC will need to evaluate the agency resource and budget implications and possibly make adjustments to ensure that it can maintain its thorough and timely reviews.

The NRC appreciates the opportunity to present its views, and will elaborate further on any of them at your request. Mr. Chairman and Members of the Committee, I welcome your comments and questions.