

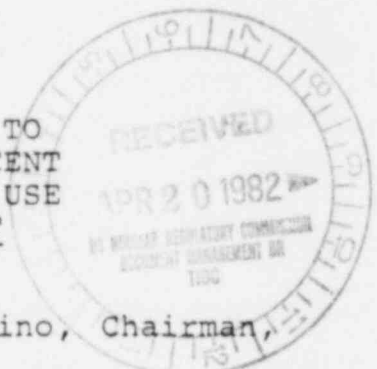
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
Philadelphia Electric Company) Docket Nos. 50-352
) 50-353
(Limerick Generating Station,)
Units 1 and 2))

LICENSEE'S SUGGESTION OF MOOTNESS TO
LICENSING BOARD BASED UPON THE RECENT
STATEMENT OF COMMISSION POLICY ON USE
OF PROBABILISTIC RISK ASSESSMENT



On April 5, 1982, Dr. Nunzio J. Palladino, Chairman, Nuclear Regulatory Commission ("NRC" or "Commission") addressed the Executive Conference, American Nuclear Society, on the topic of "Methods for Probabilistic Risk Assessment." ^{1/} The Chairman outlined the Commission's objectives in the use of Probabilistic Risk Assessment ("PRA") in conjunction with its proposed policy statement on safety goals for nuclear power plants.

Analogously to the practice in federal courts by which parties advise the court of recent developments after the submission of a matter for decision, Philadelphia Electric

^{1/} A copy of the text of the Chairman's address is attached.

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Company ("Licensee") wishes to bring to the attention of the Licensing Board, which is now considering PRA contentions submitted by certain petitioners in this proceeding, the statement of Commission policy, attached hereto, with regard to the use of Probabilistic Risk Assessment in developing NRC reactor safety requirements.

The statement made by the Chairman confirms that the policy of the Commission is that PRA analysis, while useful as a tool within the NRC in reevaluating its safety objectives from the viewpoint of its overall regulatory responsibilities, has no place in licensing proceedings, at least at present. Thus, the Chairman stated that the proposed NRC policy statement on safety goals for nuclear power plants would involve "a step-by-step action plan on how to use the goals and numerical guidance, in conjunction with PRA, within the regulatory process," ^{2/} i.e., not the "licensing process." He explained that the Commission's policy on safety goals, including PRA, would be used "on a trial basis in an effort to stabilize the regulatory process." ^{3/}

^{2/} Press Release at p. 2 (emphasis added).

^{3/} Id. (emphasis added). The Chairman indicated that PRA "has a place" in a variety of research and regulatory areas, but no particular use for PRA in the hearing process at this time was identified. The Chairman made it clear that such long range "expectations" for the use of PRA in other areas would, in any event, be strictly limited to those areas in which "the data base warrants such use." Id.

The Chairman expressly distinguished between safety goals developed by PRA and other forms of analysis and regulatory requirements under 10 C.F.R. Part 50. The Chairman stated:

We have explicitly charged the NRC Staff in the policy statement on safety goals to use the goals and guidelines in conjunction with probabilistic risk assessment. But we emphasize that they are not a substitute for our regulations and that individual licensing decisions will continue to be based principally on compliance with those regulations. 4/

As the Licensee has pointed out, neither the Limerick PRA nor WASH-1400 include all of the elements which must be considered for the licensing of a nuclear power plant. They are only mechanistic, partial models. Until such time as the Commissioners determine that a PRA model has reached the state of the art to provide a comprehensive answer to evaluating operating license applications, the Commissioners recognize PRA should not be used for that purpose. Applied to Limerick, even if the Board were to litigate the PRA model (whether comparing it to WASH-1400 or not), it would still be required to evaluate the Limerick plant as built by the existing licensing standards for all plants.

The evident danger in treating PRA analysis as a licensing tool was aptly described by the Chairman in stating:

4/ Id. at 3 (emphasis added).

[I]t is extremely important to bear in mind that PRA is an emerging methodology, that substantial uncertainties are inherent in the technique. Some of these may be eliminated as the state-of-the-art advances, but I think it will always be important to treat the products of PRA with great care and caution. . . . PRA will never substitute for regulatory judgment 5/

This important distinction was further emphasized by the Chairman when he concluded that the PRA methodology had reached some level of sophistication, but "[n]ow we must decide how far we will go and how soon to apply these methods to commercial nuclear power plants. That decision should be made this year." 6/

It is therefore clear that the Commission did not intend licensing boards generally to consider PRA models in deciding reactor cases. The Commission has quite plainly reserved this decision to itself and has made it abundantly clear that licensing boards should not explore safety goal methodologies in individual proceedings without express authorization by the Commission.

Accordingly, Licensee respectfully submits that the PRA contentions in this proceeding should be denied. If the

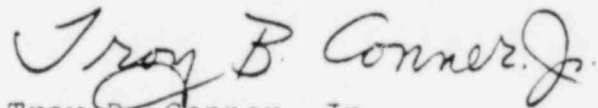
5/ Id.

6/ Id. at 4 (emphasis added).

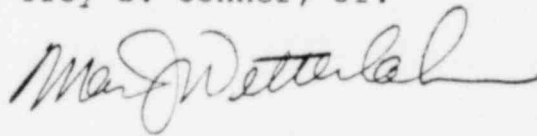
Licensing Board herein should otherwise determine, it is respectfully requested that the issue be immediately certified to the Commission for a prompt resolution of the matter.

Respectfully submitted,

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April 19, 1982

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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| Units 1 and 2) |) | |

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Suggestion of Mootness to Licensing Board Based Upon the Recent Statement of Commission Policy on Use of Probabilistic Risk Assessment," in the captioned matter have been served upon the following by deposit in the United States mail this 19th day of April, 1982.

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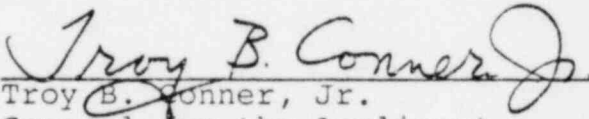
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No. S-5-82
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FOR IMMEDIATE RELEASE

Remarks by
Nunzio J. Palladino, Chairman
U.S. Nuclear Regulatory Commission
at the
American Nuclear Society
Executive Conference
METHODS FOR PROBABILISTIC RISK ASSESSMENT

Arlington, Virginia
April 5, 1982

It is a pleasure to be with you and to have the opportunity to address you this evening.

This subject under discussion in your conference -- all day today and through the next two days -- is an endlessly interesting and even a paradoxical topic. The paradox lies in the fact that risk assessment is simultaneously one of the most universal preoccupations of mankind and yet is one of the most specialized precision tools for making specific decisions.

Certainly all of the deliberations that go into diplomatic and economic decision-making all over the world are basically risk assessments. The same can be said for individual career choices, proposals of matrimony or wagers on four-legged animals. I have no exact data on the matter, but I believe a very high percentage of all the human judgments made everywhere every day are risk assessments. For all we know, it may be the need to make such judgments, and make them correctly, that underlies the evolution of the human brain. We seem to be a species always willing to take some chances, but only under certain conditions. It is those conditions that are the real object of the analyses undertaken in probabilistic risk assessment, to which I will refer as PRA during the rest of my talk.

In reality, of course, there is nothing more serious than the judgments we must make in assuring public health and safety. The Commission has

recently published for public comment a proposed policy statement on safety goals for nuclear power plants. The document represents a first definitive attempt to provide safety goals, and guidance in identifying them, to the nuclear industry and all other concerned parties. I hope that you will give the statement close study and let us have the benefit of your comments.

What we seek in developing and promulgating the statement on safety goals is to enable both the industry and the NRC to determine what level of additional risk which might be imposed on the public as a result of accidents is acceptable. I should note that we are talking here only about the results of accidents. Let me stress that the implied premise behind the safety goal is not that injuries or deaths from nuclear accidents are acceptable, but that some additional risk from the possibility of nuclear accidents is inescapable. From that premise we are trying to derive a clear concept of how much additional risk is acceptable and to define in usable terms how the level of risk can be determined. It's a tall order. We will need your help and cooperation both on what the safety goal risk level ought to be and on how to implement the use of the safety goal.

While the proposed policy statement is out for comment, the Commission has directed the NRC staff to prepare a step-by-step action plan on how to use the goals and numerical guidance, in conjunction with PRA, within the regulatory process. We expect to evaluate both the public comments on the proposed policy and the staff's implementation plan by early summer, so that we can refine both the policy and the action plan. Thus, we will proceed with the use of this approach on a trial basis in an effort to stabilize the regulatory process. We will be applying the approach to an evaluation of both proposed and existing NRC reactor safety requirements, so you can readily see how important it is that all those with an interest in nuclear power generation study the document and respond to the Commission on it.

I make mention of the policy statement on safety goals because PRA was such a prominent consideration in its formulation. Not only has PRA helped us to develop our safety goals, it also has provided a means for specifying their implications for licensees and for confirming or validating the attainment of the goals.

We have other expectations as well for the use of PRA in regulatory decision-making. We on the Commission have directed that special attention be given by the staff to using these techniques in a variety of applications, provided that the data base warrants such use. We believe it has a place in licensing reviews, in addressing generic safety issues, in formulating new regulatory requirements, in evaluating new designs, in setting priorities for reactor research, and in allocating inspection resources.

It is clear that the PRA methodology can be employed in two essentially different ways: as a means of an absolute level of risk and as a measure of a relative level of risk. It is important in each case to understand which kind of application is intended and to understand the limitations of both. In using PRA to identify both absolute and relative measures of risk one has to be careful to take uncertainties into account. Despite uncertainties, however the analyses involved are worthwhile, even vital, for making important policy decisions wisely.

Another important attribute of probabilistic risk assessment is the disciplined thought process that it involves. This process is valuable despite uncertainties in the probability numbers used in making quantitative assessments of risk. For example, PRA can be used to identify the dominant accident scenarios, places where safety attention should be focused. It also can be used to evaluate plant operation and maintenance procedures and to identify areas needing close attention.

Of course the sword can cut two ways. Just as PRA can identify previously unrecognized safety problems, it also can identify previously over-estimated safety issues -- places where unneeded requirements have been imposed. The value of PRA as a quality assurance check lies to a great extent in its essential difference and departure from the conventional safety review approach. It can give us a perspective on safety issues from an entirely different angle, sometimes revealing unseen dimensions.

Nevertheless, it is extremely important to bear in mind that PRA is an emerging methodology, that substantial uncertainties are inherent in the technique. Some of these may be eliminated as the state-of-the-art advances, but I think it will always be important to treat the products of PRA with great care and caution. After all, it is a technique or set of techniques. As any musician can tell you, technique is crucial, but it is no substitute for interpretation. It simply makes a broader and more refined interpretation possible. PRA will never substitute for regulatory judgment, any more than computers can ever substitute for the judge and jury in a court or voters in a polling place.

So we recognize that we are dealing with a developing area. We have explicitly charged the NRC staff in the policy statement on safety goals to use the goals and guidelines in conjunction with probabilistic risk assessment. But we emphasized that they are not a substitute for our regulations, and that individual licensing decisions will continue to be based principally on compliance with those regulations.

In all applications of the goals and guidelines, the PRA calculations are to be documented, along with associated assumptions and uncertainties, and are to be considered as one factor among others in the regulatory decision-making process. The nature and extent of the considerations given to numerical guidelines will depend on the issue in question, the

quality of the data base, and the scope and limits of the analyses involved in the PRA calculations. The results of the process are, as I have indicated, to be treated strictly as aids to professional judgment.

This conference marks the culmination of a broad-based process by which the Government and industry have worked together through the technical societies to develop an authoritative reference for procedures. From what I see and hear, this effort has been a success. Now we must decide how far we will go and how soon to apply these methods to commercial nuclear power plants. That decision should be made this year. With the cooperation and contributions of all concerned, I am confident that the decision will be one that will enhance the safety of nuclear power generation in the United States for many years to come.