



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 2 1979

The Honorable Stewart B. McKinney
United States House of Representatives
Washington, D.C. 20515

Dear Congressman McKinney:

This is in response to your letter of August 7, 1979. In your letter, you suggested that the safety of nuclear power plants would best be enhanced through the development of standard plant safety requirements. You also requested answers to a number of specific questions relating to that suggestion.

Prior to answering your specific questions, some background information may be helpful on the approach the Nuclear Regulatory Commission (NRC) has used in the establishment of safety requirements and the application of those requirements to plants that were previously approved for construction and/or operation. This information provides a context for our answers to your specific questions.

Under the Atomic Energy Act of 1954, as amended, the NRC has broad authority to promulgate rules and regulations establishing and imposing minimum safety standards on nuclear power plants (see, for example, 42 U.S.C. 2133, 2134 and 2201).

The NRC's standard safety requirements for nuclear power plants are embodied in Title 10 of the Code of Federal Regulations. The NRC requires that each plant meet these regulations unless otherwise specifically exempted. The NRC staff (staff) has the responsibility to review each application for construction or operation of a nuclear power plant to assure that it meets these regulations. To assist all parties involved in this review process, the staff issues Standard Review Plans and Regulatory Guides. These documents define ways of meeting the NRC's regulations that the staff finds acceptable. It is important to note that the Standard Review Plans and Regulatory Guides, although often referred to as staff requirements, are actually guidelines and not requirements. Thus, alternatives to the staff positions in those documents may be, and frequently are, found acceptable provided that an equivalent level of protection is provided and can be justified.

Each new or revised Standard Review Plan or Regulatory Guide is reviewed by a staff committee composed of senior management to determine if, and to what extent, it should be made applicable to nuclear power plants previously approved for construction and/or operation. The staff is guided by Section 50.109, Backfitting, of Title 10, Part 50, of the

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Code of Federal Regulations in making this determination. Section 50.109 states that the backfitting of a facility may be required if such action will provide substantial, additional protection which is required for the public health and safety or the common defense and security.

With the preceding as background, the following responses address your four specific questions.

1. Is legislation required in order for the Nuclear Regulatory Commission (NRC) to develop and standardize minimum safety requirements for nuclear power plants? Can and should the NRC take this action on its own?

Additional legislation is not required for the NRC to develop and standardize minimum safety requirements for nuclear power plants. The present NRC safety requirements for new and existing plants are contained in Title 10 of the Code of Federal Regulations. Under the rulemaking procedures set out in the Administrative Procedures Act, 5 USC 551 et seq., the Commission could amend these regulations to adopt or revise its requirements for both new and existing plants. As discussed below, our future plans in this regard will be highly influenced by the results of the special TMI-2 accident investigations now in progress.

2. Could the recommendations of the President's Commission on Three Mile Island (The Kemeny Commission) be used in the development of standardized safety requirements? Are there other sources for which safety requirements could be drawn?

Recommendations of the Kemeny Commission to modify or expand the existing body of NRC regulations could be used for this purpose. If such recommendations are made they will be considered by the NRC.

In addition there are a number of other sources that are expected to affect the existing body of NRC regulations and staff guidelines for conducting safety reviews. These include recommendations from the Congress, public, and our special inquiry group on the accident at Three Mile Island, as well as recommendations resulting from other TMI-2 related studies and investigations such as those conducted by the staff and the Advisory Committee on Reactor Safeguards.

3. Could minimum standardized safety requirements be applied to all operating plants? What difficulties would be involved in such a process?

With regard to the first part of the question, i.e., whether minimum standardized safety requirements could be applied to all operating plants, I believe the answer is clearly yes. At the same time it is important to note two aspects of this question. One aspect concerns the level of detail of those requirements which are standardized and uniformly applied, and the other aspect is, of course, the value and cost or

practicality of attempting to uniformly apply the same requirements to all operating reactors at this particular point in time.

The NRC does apply to all operating plants a set of safety requirements that generally correspond to the term "minimum standard safety requirements" referred to in your question. These safety requirements arise from two distinct sources. The first category consists of those requirements that are embodied in the NRC's regulations. For example, each plant is reviewed prior to construction and again prior to operation to verify that it meets the NRC's regulations in effect at that time. Further, the terms and conditions of licenses for all nuclear power plants are subject to future amendments of the Atomic Energy Act of 1954 (68 Stat. 919) and to future rules, regulations, and orders issued by the NRC in accordance with the terms of the Act.

The second category of requirements applied to operating plants includes those safety improvements identified for backfitting on operating plants. These safety improvements are generally defined in new or modified Standard Review Plans and Regulatory Guides that the staff uses in its review of applications for construction permits or operating licenses for nuclear power plants. Such safety improvements are usually developed as a result of new analyses, testing, operating experience, technological advancement, or resolution of generic safety problems. Not all safety improvements are backfitted on operating plants. The standards of Section 50.109 of 10 CFR Part 50 are used in making a determination of whether, and to what extent, individual safety improvements should be backfitted on operating plants. Section 50.109 states that the backfitting of a facility may be required if such action will provide substantial, additional protection which is required for the public health and safety or the common defense and security.

As noted previously, the use of these more detailed staff documents has not been rigidly and uniformly implemented because (a) staff approved documents are not mandatory requirements and, therefore, alternative approaches are acceptable when justified and (b) the staff has not believed it has been necessary, or even practical, to impose such criteria uniformly on all operating plants.

In responding more fully to the second part of your question, as noted above, the principal difficulties associated with implementing standardized requirements would arise in the backfitting of new or revised safety criteria on operating plants. Specifically, the difficulty is in determining the incremental increase in protection afforded by implementing individual safety criteria and in determining the incremental increase in protection that constitutes substantial, additional protection as required by Section 50.109 of 10 CFR Part 50. Because of this difficulty, the decisions to backfit are, to varying degrees, qualitative and, as a consequence, past practice has been to rely on the collective judgment of senior staff management.

As I am sure you can appreciate, backfitting of operating plants can have a more severe impact than backfitting plants under construction. In some cases, backfitting can result in long, unscheduled plant outages. This can lead to substantial replacement power costs and power shortages which are additional to the economic impacts directly associated with the cost of designing, procuring, and installing the hardware modifications. While we have no reluctance to require backfitting when necessary or appropriate, we have believed this authority must be exercised with considerable care and deliberation since backfitting usually results in increased costs to the consumer, for which there should be some commensurate increase in safety.

The past practice of the staff has been to rely on a thorough management review of each new or revised Standard Review Plan or Regulatory Guide with particular emphasis given to a value/impact assessment. If the staff believed modifications to conform to the guidance were required for safety regardless of cost, they were approved for all reactors: operating, under construction, or planned. In other cases, guidance was approved only for future license applications, or in some cases, the guidance was approved for implementation based upon a case-by-case determination of the safety improvement and the impact associated with the safety improvement.

The Commission believes, however, that the TMI-2 accident warrants a reexamination of our existing regulations and the related policy and practices of backfitting. In sum, we expect that changes will be made in both areas as a direct result of the accident at TMI-2.

4. Do you believe it would be desirable to standardize upgraded safety requirements?

The upgrading of current safety requirements is already underway as a result of the accident at TMI-2, and we believe that it is desirable that those revised requirements considered by the staff as appropriate for operating plants be applied in a uniform manner. A number of additional safety requirements have already been identified by the staff as necessary for all operating reactors, and further requirements will undoubtedly be necessary as ongoing studies of the TMI-2 accident are concluded.

The Commission plans to carefully review the recommendations of the study groups, both inside and outside of the NRC, in developing the necessary requirements to be applied to all operating plants as a direct result of the TMI-2 accident. Our clear intent is to assure that the safety requirements developed subsequent to the TMI-2 accident are upgraded, improved, and applied, to the maximum extent required, in a standard manner to operating plants.

Sincerely,

ORIGINAL SIGNED BY R. G. SMITH

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Lee V. Gossick
Executive Director for Operations