

June 22, 1978

SECY-78-342

## COMMISSIONER ACTION

For: The Commissioners

From: Edson G. Case, Acting Director  
Office of Nuclear Reactor Regulation

Thru: *fr* Executive Director for Operations *W J Danks*

Subject: PROPOSED REPLY TO MESSRS. NADER AND ABBOTTS

Purpose: Approval of enclosed response to a letter received from Ralph Nader and John Abbotts of the Public Interest Research Group.

Category: Routine matter requiring Commission consideration.

Discussion: The incoming letter from Messrs. Nader and Abbotts requested (1) that the Commission prohibit licensing of individual plants until each and every generic issue of significance to public health and safety relevant to the plant has been resolved and (2) that the Commission become a force within the Administration recommending withdrawal of the proposed Nuclear Siting and Licensing Act of 1978. The basis for these requests are a number of allegations regarding the NRC's handling of generic issues in the licensing process.

The enclosed draft reply provides the proposed response to these requests.

Recommendation: That the Commission review and approve the draft letter prepared by the staff.

Coordination: ELD has no legal objection.

*Edson G. Case*  
Edson G. Case, Acting Director  
Office of Nuclear Reactor  
Regulation

Enclosures:  
Draft Response to Messrs. Nader  
and Abbotts

Contact: M. B. Aycock, NRR  
49-28041

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Friday, July 7, 1978.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT June 30, 1978, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION

Commissioners

Commission Staff Offices

Exec Dir for Operations

Secretariat

Mr. Ralph Nader  
Mr. John Abbotts  
Public Interest Research Group  
2000 P Street, N.W.  
Suite 711  
Washington D.C. 20036

Dear Messrs. Nader and Abbotts:

Your letter of June 5, 1978 requests (1) that the NRC prohibit licensing individual plants until each and every generic issue of significance to public health and safety relevant to the plant has been resolved, and (2) that the Commission become a force within the Administration recommending withdrawal of the proposed Nuclear Siting and Licensing Act of 1978. The basis for these requests set forth in your letter and the attached report prepared by Mr. Abbotts are a number of allegations regarding the NRC's handling of generic technical issues in the licensing process. A case study of one particular issue, the issue of providing adequate protection against postulated ruptures in high energy piping systems located outside of the containment building, was provided as an example to support your allegations.

We have reviewed your requests and the supporting information and cannot agree that licensing of individual plants should be prohibited until all generic issues are resolved or that our previous positions on the proposed Nuclear Siting and Licensing

Messrs. Nader and Abbotts

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Bill of 1978 presented in testimony before Congress should be altered. The basis for this decision is provided in the enclosed Staff discussion of your allegations.

Sincerely,

Joseph M. Hendrie  
Chairman

Enclosure:

NRC Staff Discussion of Allegations  
By Messrs. R. Nader and J. Abbotts  
Regarding NRC's Handling of Generic  
Technical Issues in the Licensing  
Process

## ENCLOSURE

### NRC STAFF DISCUSSION OF ALLEGATIONS BY MR. RALPH NADER AND MR. JOHN ABBOTTS REGARDING NRC'S HANDLING OF GENERIC TECHNICAL ISSUES IN THE LICENSING PROCESS

The licensing approach<sup>a</sup> to generic issues is as follows. The NRC continuously evaluates the safety requirements used in its reviews against new information as it becomes available. Information related to the safety of nuclear power plants comes from a variety of sources including experience from operating reactors, results from ongoing research, NRC staff and ACRS safety reviews, vendor, architect/engineer and utility design reviews and members of the public. Each time a new concern or safety issue is identified from one or more of these sources, the need for immediate action to assure continued safe plant operation of licensed facilities is assessed. This assessment includes consideration of the generic implications of the issue.

In some cases, immediate action is taken to assure adequate safety margins are maintained e.g., the derating of boiling water reactors as a result of the channel box wear problem in 1975. In other cases, interim measures, such as modifications to operating procedures or increased equipment surveillance, may be sufficient to allow further study of the issue prior to making licensing decisions. In most cases, however, the initial assessment indicates that immediate

licensing actions or changes in licensing criteria are not necessary. This is because the Commission's standards and regulations as implemented through the licensing process ensure that large margins of safety are incorporated in the plant design. Nonetheless, further study may be deemed appropriate to make judgments as to whether existing NRC staff requirements should be modified to address the issue for new plants or if backfitting is appropriate for the long term operation of plants already under construction or in operation. In some cases, the further study may be a short term effort resulting in the relatively rapid development of a generic solution for implementation on operating plants or in the licensing process. When longer term studies are appropriate, the issue is included in NRR's program for the resolution of generic issues and assigned to a priority category based on its judged importance. As indicated above, such issues are included in the NRC program only after the staff has made an initial assessment for individual plants and has made a determination that the safety significance of the issue permits continued operation or licensing actions while the longer term generic review is underway.

In January 1978, the Office of Nuclear Reactor Regulation (NRR) issued a report, NUREG-0410, that listed 133 generic issues and described the NRC generic issues program. This report was provided to Congress in

response to the reporting requirements of Section 210 of the Energy Reorganization Act of 1974, as amended. Although Congress requested an "Unresolved Safety Issues Plan," the NRC program is considerably broader than the plan required by Section 210. It includes staff generic tasks for the resolution of environmental issues, for the development of improvements in guidance to applicants regarding existing staff requirements, for maintaining or improving the staff capabilities to perform independent audit calculations, for performing studies to confirm current staff requirements or to determine whether or not current staff requirements can be relaxed.

Of the 130 Category A, B and C generic tasks identified in NUREG-0410, only about 40 are for the purpose of determining whether or not staff safety requirements require upgrading. Of these 40, not all are applicable to each type of reactor design and some are applicable to older reactors only, i.e., newer plants have already eliminated the potential problem through design improvements. Thus the number of "generic safety issues" applicable to a particular plant that could potentially result, and certainly not all will, in modifications after construction or operation is not nearly so great as implied by Messrs. Nader and Abbotts.

The Task Action Plans for all Category A generic tasks have been approved by the Office of Nuclear Reactor Regulation's Technical Activities Steering Committee and effort has been initiated on most of the Category A tasks. NRR expects to issue Revision 2 to NUREG-0371 entitled, "Approved Task Action Plans, Category A Tasks", later this year. As part of Revision 2 to NUREG-0371 each Task Action Plan will be revised to include a discussion providing the basis for continued plant operation and licensing pending completion of the task.

An express purpose of establishing the priority categories utilized in the NRC generic issues program was to aid NRC management in assigning available resources to those generic tasks that are judged to be most important. The judgments regarding the assignment of issues to the various categories was a result of an extensive internal review process described in NUREG-0410. In accordance with these priority category assignments, Task Action Plans and schedules will be developed for the lower priority (Category B and C) tasks as resources become available. NRR expects to issue a new report, NUREG-0471, in July that will provide, among other things, a description of each of the Category B, C and D issues.



The entire generic issue process from issue identification and initial assessment of the safety of operating plants to final decisions on proposed changes to current requirements both assures that plant operation and licensing does not present an undue risk to the health and safety of the public and allows orderly, balanced and informed decision making. Although this process may for some particular issues be a long one, we believe that because of the complexity of many of the technical issues being considered such instances of extended time for resolution are to be expected and that the process overall fulfills the Commission's regulatory responsibilities.

With regard to the particular issue of protection against postulated ruptures in high energy line fluid systems located outside of containment, on October 25, 1972, an anonymous letter was sent to the ACRS that listed 13 items alleged to represent unresolved safety matters on both the Kewaunee and Prairie Island projects. One of these items dealt with the consequences of postulated ruptures in fluid systems located outside the containment. In particular, the letter expressed concern regarding the postulated rupture of a steam line and the consequences resulting from the release of steam on safety equipment necessary for safe shutdown of the reactor plant. This matter is the subject of General Design Criterion 4 of 10 CFR 50, Appendix A.

On December 13, 1972, the AEC issued a press release (P-429) indicating that it had made requests by letter to all utilities with operating nuclear plants and those under review for operating licenses to assess the effects of postulated breaks in the steam and feedwater systems outside the containment. This request was sent by A. Giambusso, Deputy Director of Reactor Projects and it included the criteria and requirements for evaluating existing designs for postulated high energy line breaks.

Subsequently, in early 1973, the staff met with licensees and applicants to make a reasonable estimate of the impact of modifications on plants to mitigate the consequences of such postulated piping ruptures. These actions dealt with corrective actions for plants in advanced stages of construction and operation. Analyses presented by licensees of operating facilities provided information concerning areas containing high energy lines, equipment such as instrumentation in close proximity of such lines, structural loading anticipated from pipe whip, and environmental conditions resulting from the postulated high energy line break. The licensees further proposed corrective measures to prevent or mitigate the consequences of the event. The proposed modifications varied in degree from installing barriers and pipe restraints to relocation of equipment or piping. As an interim measure, the staff required an

augmented inservice inspection program in areas of high energy lines for those facilities which required extended time to complete the proposed modifications.

A review and evaluation of high energy line breaks outside of containment was incorporated in the licensing review for all facilities receiving operating licenses after 1972. The staff review of high energy line breaks outside of containment for all other facilities presently operating has been completed and a Safety Evaluation Report addressing high energy line breaks has been issued for these plants except for the Ginna plant. Although the Safety Evaluation Report for Ginna has not yet been issued, the staff review is essentially complete and a number of modifications have already been made at the plant.

On July 12, 1973, the staff issued another letter sent by J. F. O'Leary, Director of Licensing to applicants, reactor vendors, and architect/engineers on the subject of postulated piping failures outside containment. The purpose of the letter was to set forth clearer guidance to the industry for newer plants to consider rearrangement of piping layouts to cope with the potential consequences of high energy line failures outside the containment. Thus the O'Leary letter set forth an acceptable implementation of General Design Criterion 4 as applied to new plants with respect to the design of structures, systems, and components important to safety and located outside of containment.

In November 1975, the NRR staff published its Standard Review Plan. Sections 3.6.1 and 3.6.2 contain the review areas that deal with the plant design for protection against the effects of postulated failures in fluid system piping located outside the containment. These review plans are in use today for construction permit and operating license reviews and provide the documented basis for resolution of the related ACRS generic item (Item IIA-3 in the Committee's letter of February 24, 1977 providing its Status Report No. 5 on generic items).

Based on the discussion above, the staff has concluded that the technical issue of protection against high energy line ruptures outside of containment has been resolved and the resolution implemented (with the exception of finalizing the Ginna review and evaluation as noted above). To imply, as Messrs. Nader and Abbotts do, that resolution of this issue must be supported by evidence that no further changes to our safety requirements related to this issue will occur and no further studies related to piping integrity will be undertaken is simply not consistent with our responsibilities. Although the technical issue is resolved, the NRC staff must continuously monitor the effectiveness and the impact of its requirements and improve them where improvement is needed. In this regard, there are several staff activities ongoing at this time related to the high energy line break issue that could result in further refinement of current staff requirements. The first is the

current effort to update and clarify NRR's Standard Review Plan. We anticipate that minor modifications to Sections 3.6.1 and 3.6.2 will be made during this process.

Secondly, NRC's Office of Nuclear Regulatory Research has been requested to conduct a safety research program to develop data related to pipe break mechanisms, jet impingement loads, pipe whip effects and definition of the most probable mode of pipe rupture. The results of this research program will be used to determine if refinement of current criteria for postulating piping ruptures and evaluating their effects should be made. If refinements are made they are expected to be toward relaxation of current requirements by removing unnecessary conservatism.

Finally, the staff has initiated Task A-18. Task A-18 includes three subtasks. Subtask 1 involves combining the present staff pipe rupture design criteria for use inside and outside containment to provide a more consistent regulatory position. Subtask 2 involves refining and clarifying current criteria for use in the break exclusion region. (This Subtask includes in its entirety Task B-16). Subtask 3, as well as parts of the longer term research program discussed above, is directed at assuring that the design of safety systems provides the proper balance between the structural restraint necessary to absorb accident loads and the flexibility desirable for normal operation.

In summary, the staff has concluded that the question of protection against high energy line ruptures outside of containment has been resolved and that current requirements result in designs that adequately protect the health and safety of the public. In addition follow on activities related to the high energy line issue may result in some further refinements of the criteria. However, we believe that such activities are appropriate and responsive to the need to continually monitor and improve current requirements.

Based on the foregoing discussions of the NRC's handling of generic issues and the handling of the high energy line issue in particular, we recommend that Mr. Nader's and Mr. Abbott's requests not be granted.

June 5, 1978

Dr. Joseph M. Hendrie, Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Chairman:

This draws your attention to defects in the Administration's nuclear licensing bill and in the manner in which your agency and its predecessor have handled unresolved safety issues.

The enclosed report\*, "The Steam Line Break Accident: A Case Study of Regulatory Lag," prepared by the Public Interest Research Group, reviews the history of a "generic" safety issue - one applicable to several nuclear plants or certain types of plants. The history of this particular safety problem, the potential effects of the rupture of piping carrying steam or other fluids which can damage equipment or structures, provides a disturbing picture of the way the Commission and its predecessor have done business.

The potential consequences of a steam line break accident were brought to public attention in October 1972 by an anonymous letter to the Atomic Energy Commission's Advisory Committee on Reactor Safeguards, not by the Commission staff. The two plants identified in the letter were Northern States Power Company's Prairie Island station and Wisconsin Public Service Corporation's Kewaunee reactor. Faced with a choice of alternative modifications to address breaks in piping carrying steam and

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\*SECY NOTE: A copy is available in the SECY Files.

other "high energy" fluids, the Atomic Energy Commission (AEC) allowed for Prairie Island the alternative that was cheapest and least likely to cause delay; and for Kewaunee an alternative that was not expected to cause delay. Nonetheless, the after-the-fact resolution of this safety issue caused delay and additional expense at each plant. Moreover, the Nuclear Regulatory Commission (NRC) reported that modifications to protect against high energy line breaks at other nuclear plants were still in progress as late as February 1976.

This generic issue has supposedly been "resolved" at least twice - at the nuclear plants identified in the anonymous letter, and by an October 1977 letter from the NRC staff to the Advisory Committee on Reactor Safeguards (ACRS). Yet earlier AEC and NRC documents noted that the issue would be resolved through production of a Regulatory Guide, which has not been completed. The NRC, moreover, still carries two generic items related to high energy line breaks, and their final resolution is not expected before September 1979 - nearly seven years after the problem first came to light through the anonymous letter.

When the ACRS received the anonymous letter in October 1972, the Atomic Energy Commission's Chairman was James R. Schlesinger (now Secretary of Energy); his Director of Licensing was John F. O'Leary (now Department of Energy Deputy Secretary); and you were Mr. O'Leary's Deputy Director for Technical Review. Nearly six years later, there has yet to be a final resolution of the issue.

If further study demonstrates that the NRC's standards for piping ruptures are acceptably safe, then little will have been lost in protecting public health and safety. If, however, new



information shows that safety improvements or modifications are necessary, then the NRC will be faced with a disturbing dilemma: the agency will either be forced to compromise safety by exempting plants which have been designed, constructed, or operated in the intervening years; or it will be forced to require redesign, reconstruction, or retrofitting of those plants. A licensing process which can create such a situation is fair neither to the public, the industry, nor the Nuclear Regulatory Commission, which will be caught in the middle.

On generic issues generally, the enclosed report notes the Commission's program is incomplete and in a state of disrepair. The Commission presently recognizes 133 unresolved generic issues, 113 of which are in Categories A and B, identified as the "highest priority." Although the NRC began its program for generic issues in October 1976, the agency has yet to complete Task Action Plans for all Category A items. The Commission's present schedule calls for the resolution of six Category A items in fiscal year 1978 (FY 78) and 17 items in FY 79. If the Commission sustains its FY 79 rate, it will not complete resolution of its Category A and B items until 1985, even if no new generic safety problems are uncovered. In addition, the priorities which the ACRS has established for individual generic issues conflict with the priorities which the Commission staff has established.

This information should be viewed in the larger context of the nuclear licensing process. There is a long list of unresolved generic issues which the NRC recognizes, and other safety problems can escape the Commission's attention. At the

same time, the after-the-fact resolution of generic issues causes delay and extra expense that could have been avoided if issues were resolved before, not after, plant licensing. The need to detect safety problems and resolve generic issues calls for a more thorough licensing review, not for an expedited review.

The Carter Administration's Nuclear Siting and Licensing Act of 1978, however, is largely aimed at expedition. By failing to address the serious issue of unresolved safety problems, the Act has missed an opportunity to both reform the licensing process and to eliminate a source of delay. In fact, Section 103 of the Act, which requires that hearings "be limited to issues as to which there was no prior opportunity for hearing in a prior proceeding before the Commission or State," could be interpreted to preclude the consideration of generic issues.

Provisions that freeze the consideration of safety issues are not sensible. What is needed is a measure to force the NRC to place the same priority on resolving generic issues as on granting individual licenses. With this in mind, we make the following recommendations to the Commission:

- 1) The NRC should prohibit licensing an individual plant until each and every generic issue of significance to public health and safety relevant to the plant has been resolved. If the NRC does not believe it has the authority to establish such a policy administratively, it should seek legislation that would give it

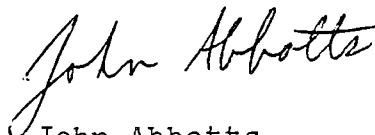
the authority. Implementation of this policy on generic issues is important in its own right, and should be pursued separately from the Administration bill

2) The Administration's nuclear licensing bill suffers from too many other defects and is not worth attempts to correct it by amendments. We urge the Commission to become a force within the Administration recommending withdrawal of the bill, because of the legislation's failure to add safety improvements to the licensing process, among its other deficiencies.

Sincerely,

A handwritten signature in dark ink, appearing to be 'RN' with 'Nader' written below it in a cursive style.

Ralph Nader

A handwritten signature in dark ink, appearing to be 'John Abbotts' in a cursive style.

John Abbotts.  
Public Interest Research Group