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Although we have not yet determined whether the issue of psychological distress should be considered in this case, for the reasons stated in our memorandum and Order of May 16, 1980, we wish to make it clear that the Commission will not provide any funds for intervenors to plan for and address this issue in fiscal year 1980. Accordingly, the requests for such funding from PANE, CEA and any others will be dismissed.¹²

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated in Washington, D.C.
This 16th day of May 1980.

The Commission notes that its staff recently signed a contract with the "Human Design Group," composed of medical psychologists and other experts from medical school facilities, who were recommended by officials in the National Institute of Mental Health and a group of experts involved in the study of the psychological stress issue for the Keweenaw Commission. These consultants will evaluate that issue in connection with the clean-up efforts at TMI-2. Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Glinnsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present, both Commissioner Glinnsky and Commissioner Kennedy would have voted with the majority on this Order. Accordingly, the formal vote of the Commission is 3-0.

706

Cite as 11 NRC 707 (1980)

CLI-80-21

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahrens, Chairman
Victor Glinnsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

In the Matter of

PETITION FOR EMERGENCY
AND REMEDIAL ACTION

May 27, 1980

Upon consideration of a petition by the Union of Concerned Scientists for reconsideration of CLI-78-6, 7 NRC 400 (1978), which denied petitioner's requests for emergency relief concerning fire protection for electrical cables and environmental qualification of electrical components the Commission affirms its earlier decision with certain revisions and clarifications.

REGULATIONS: ENVIRONMENTAL QUALIFICATION OF
SAFETY SYSTEMS

A fundamental principle of NRC regulation of nuclear power reactors is that safety systems must perform their intended functions in spite of the environment which may result from postulated accidents. Confirmation that these systems will remain functional under postulated accident conditions constitutes environmental qualification, the legal requirements for which are found in General Design Criteria I and 4 of Appendix A, Part 50; Criterion III of Appendix B, Part 50; and 10 CFR 50.55a(h).

SAFETY STANDARDS: COMPLIANCE

The Division of Operating Reactors' (DOR) Guidelines and NUREG-0588 from the requirements which licensees and applicants must meet in order to satisfy those aspects of 10 CFR Part 50, Appendix B, General

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Although we have not yet determined whether the issue of psychological distress should be considered in this case, for the reasons stated in our Memorandum and Order of May 16, 1980, we wish to make it clear that the Commission will not provide any funds for intervenors to plan for and address this issue in fiscal year 1980. Accordingly, the requests for such funding from PANE, CEA and any others will be dismissed.^{1,2}
It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated in Washington, D.C.
This 16th day of May 1980.

¹The Commission notes that its staff recently signed a contract with the "Human Design Group," composed of medical psychologists and other experts from medical school faculties, who were recommended by officials in the National Institute of Mental Health and a group of experts involved in the study of the psychological stress issue for the Kenney Commission. These consultants will evaluate the issue in connection with the clean-up efforts at TMI-2.

²Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present, both Commissioner Gilinsky and Commissioner Kennedy would have voted with the majority on this Order. Accordingly, the formal vote of the Commission is 3-0.

Cite as 11 NRC 707 (1980)

CLI-80-21

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearns, Chairman
Victor Gilinsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

In the Matter of

PETITION FOR EMERGENCY
AND REMEDIAL ACTION

May 27, 1980

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The Division of Operating Reactors' (DOR) Guidelines and NUREG-0588 from the requirements which licensees and applicants must meet in order to satisfy those aspects of 10 CFR Part 50, Appendix B, General

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Design Criterion 4 which relate to environmental qualification of safety-related equipment.

ATOMIC ENERGY ACT: DUTIES OF APPLICANT/LICENSEES

The NRC is dependent upon all of its licensees for accurate and timely information. Licensees must have a detailed understanding of their own plants in order to meet their obligations for public safety by ensuring a sound basis for making assessments of plant safety.

SAFETY STANDARDS: COMPLIANCE

Where the staff in its review is confronted with qualification documents which are poor or where existing documentation raises questions about the ability of the equipment to perform its intended function in accident conditions the staff will make a technical judgment regarding continued operation.

SAFETY STANDARDS: COMPLIANCE

The guidance contained in Appendix A to Branch Technical Position (BTP) 9.5-1 and the requirements set forth in the Commission's proposed rule concerning fire protection define the essential elements for an acceptable fire protection program at nuclear power plants docketed for construction permit review prior to July 1, 1976 for demonstration of compliance with General Design Criterion 3 of Appendix A to 10 CFR Part 50. Similar acceptable guidance is provided in BTP 9.5-1 for nuclear power plants docketed for construction permit review after July 1, 1976.

MEMORANDUM AND ORDER

The Union of Concerned Scientists (UCS) initiated this matter on November 4, 1977 by filing with the Commission a "Petition for Emergency and Remedial Relief." The petition sought action in two areas: fire protection for electrical cables, and environmental qualification of electrical components. After an extended period of review by the NRC staff, and having received numerous submissions from the staff and UCS in addition to public comments, the Commission issued a Memorandum and Order on April 13, 1978.¹ Although the emergency relief sought by UCS² was not

¹7 NRC 400.

²The petition asked the Commission to immediately shut down all operating plants, and to halt construction of new plants.

granted, the Commission ordered its staff to take several actions related to petitioner's request.

UCS filed a petition for reconsideration on May 2, 1978. By order dated June 27, 1978 the Commission determined as a matter of discretion to consider this petition, and requested the NRC staff to provide its views on all issues raised by the UCS independent of the Commission's April 13 decision. In addition to its overall evaluation of the petition, the staff was asked to respond to specific questions which reflected the Commission's view of the discrete issues raised by the petition. Certain items of immediate safety interest were reported to the Commission on July 6, the remainder of the staff analysis was provided to the Commission on August 31 with additional clarification provided on September 19, 1978.³ Additional Commission questions directed to the staff on October 6, December 5 and December 12, 1978 were responded to in a staff memorandum dated October 26, 1978 and in staff papers SECY-79-112 (February 12, 1979) and SECY-79-112A (March 15, 1979). On March 7, 1979, UCS filed a Motion for Expedited Decision Making, and requested a meeting with the Commission. This motion restated the UCS arguments previously presented. On March 21, UCS submitted a letter concerning fire protection at nuclear plants, repeating previous UCS contentions, and making reference to the November 1977 UCS Petition. In response to Commission questions, the staff submitted further information on August 24, 1979. On November 5, 1979, UCS submitted a letter again requesting Commission action.

We reaffirm the decision made on April 13, 1978 regarding the possible shutdown of operating reactors. We believe that current Commission requirements in the fire protection and environmental qualification areas and those actions we order today provide reasonable assurance that the public health and safety is being adequately protected during the time necessary for corrective action. However, in reviewing the Petition for Reconsideration, we came across several areas of concern. In this decision on reconsideration, we will discuss these areas of concern as well as relevant new developments and those contentions made by UCS which merit warrant comment. All other issues and contentions were adequately dealt

³Nineteen public comments on the petition for reconsideration were received in response to the June 27 order. The comments represented views from private citizens, public interest groups, and the nuclear industry, and ranged from strong support for the April 13 decision to strong support for the UCS position. The staff reviewed these comments, and reached the conclusion that no new safety information was provided which might call into doubt the conclusions reached in our April 13 decision. As a result of the actions taken in today's order, the Commission concurs with the staff conclusions.

with in our original decision and the staff responses to the Petition for Reconsideration.

As we stated in our April 13th decision, UCS has highlighted an "area of regulatory review which heretofore had not been adequately addressed." This continues to be our view: UCS has made an important contribution to our regulatory efforts in the area of fire protection and environmental qualification for electrical equipment. The staff also is to be commended. It has responded well to the concerns raised in this proceeding by instituting a systematic re-evaluation of environmental qualification under specific guidelines and committing itself to a fire protection testing program. While these efforts are probably not due solely to this proceeding, they do reflect a sensitivity to the problems raised here.

Environmental Qualification Issues

As we stated in our original order, fundamental to NRC regulation of nuclear power reactors is the principle that safety systems must perform their intended functions in spite of the environment which may result from postulated accidents. Confirmation that these systems will remain functional under postulated accident conditions constitutes environmental qualification. The current legal requirements for qualification are found in General Design Criteria 1 and 4 of Appendix A, Part 50; Criterion III of Appendix B, Part 50 and 10 CFR 50.55a(h).⁴ These are general requirements restating the principle that licensees should have qualified equipment.

The NRC has used a variety of methods to see that these general legal requirements are met for electrical safety equipment. For the oldest plants, qualification was based on the fact that the electrical components were of high industrial quality. For the newer plants after 1971, qualification was judged on the basis of IEEE-323-1971. However, no Regulatory Guide was ever issued adopting the 1971 IEEE-323 standard although some of the plants referenced IEEE-323-1971 in their licensing submissions to the Commission.⁵ For the newest plants whose Safety Evaluation Reports were issued after July 1, 1974, the Commission has issued Reg. Guide 1.89 which in most respects adopted the most recent IEEE Standard 323-1974.

Currently, the Commission has underway a program to reevaluate the qualification of safety-related electrical equipment in all operating reactors. As part of this program, more definitive criteria for environmental qualification of safety-related electrical equipment have been developed by the staff. The Division of Operating Reactors' "Guidelines for Evaluating Environmental Qualification of Class IE Electrical Equipment in Operating

⁴This standard applies only to plants which received their CP's after January 1, 1971.

⁵Twelve of the 70 plants licensed to operate make specific reference to IEEE-323-1971.

Reactors" (DOR Guidelines) were completed in November 1979. The Guidelines are intended as a screening device to catch those pieces of equipment which might have qualification problems. In addition, for reactors under licensing review, the staff has issued NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment." The staff intends to evaluate the qualification of all electrical safety equipment in operating plants pursuant to the Guidelines. If problems arise, the intent is to resolve the problem using NUREG-0588 as a guide for the staff's judgment.

Against this background, the Commission has been requested by UCS to reexamine the 1971 IEEE-323 standard and order that all operating plants be upgraded to meet the 1974 IEEE-323 standard. The staff, UCS and the licensees have commented upon this issue in their numerous submissions to us. Based upon our examination of those submissions, it is clear to us that the 1971 standard by itself cannot serve as the standard against which qualification is to be judged. A full description of this 1971 standard and its comparison to the 1974 standard is contained in the August 24, 1979 staff submittal. Briefly, the standard does not specify the accident conditions which the electrical equipment must meet. There are no specific requirements to maintain document files and no specific requirements concerning margin, aging and other needed equipment specifications. It is, in fact, a document which briefly and broadly describes how to qualify any equipment, electrical or otherwise.

The DOR Guidelines and NUREG-0588 substantially improve upon the 1971 standard and should provide greater assurance that equipment is adequately qualified. In its August 24, 1979 submission, the staff stated that it intended by the Guidelines to provide a level of confidence essentially equivalent to that which would be achieved from the application of IEEE-323-1974. The Commission endorses the staff's actions to use the DOR Guidelines to review operating plants and NUREG-0588 to review plants under licensing review as well as those pieces of equipment in operating plants which do not meet the DOR Guidelines. Furthermore, pursuant to Section 161(b) of the Atomic Energy Act and based upon the record in this proceeding, the Commission is ordering today that these two documents form the requirements which licensees and applicants must meet in order to satisfy those aspects of 10 CFR 50, Appendix A, General Design Criteria (GDC)-4⁶ which relate to environmental qualification of safety-related electrical equipment. Licensees of operating reactors are to comply with these requirements so that the applicable equipment in all operating plants

⁶These standards obviously do not supplant the IEEE ancillary standards which deal with the qualification of specific pieces of equipment.

will meet the DOR Guidelines or NUREG-0588. Non-compliance can be the basis for appropriate enforcement action after the implementation deadlines ordered below. In order to leave no room for doubt on this issue, the staff is to prepare additional technical specifications for all operating plants which comply with the documentation requirement paragraph of the Guidelines (paragraph 8.0). After approval by the Commission, these new technical specifications will be added to each license.

The Guidelines leave open the question of what standard will be applied to replacement parts in operating plants. Unless there are sound reasons to the contrary, the 1974 standard in NUREG-0588 will apply.

The Guidelines and NUREG-0588 apply progressively less strict standards to the older plants. The justification for this position was not articulated at the time the older plants were grandfathered from the provisions of Reg. Guide 1.89. There was some discussion of this issue in the staff's August 24 submittal. We believe that this problem is best resolved by a rulemaking on environmental qualification of safety-grade electrical equipment. If the staff proposed rule does not require plants to be upgraded to a single uniform standard along the lines of the 1974 requirements in NUREG-0588, then its justification for that position will be articulated in depth and will be subject to comment in the proceeding.

As ordered above, the Guidelines and NUREG-0588 will state the requirements of GDC-4 until the rulemaking has been completed. For this interim period, the licensee and the public should be able to examine the basis for the staff's judgment concerning qualification. Accordingly, a written record of the staff's qualification judgment should be kept.

We stated in our April 13, 1978 order that the NRC is dependent upon all of its licensees for accurate and timely information. We expressed concern that some of the licensees' initial responses:

"indicate a lack on their part of detailed knowledge of the quality of installed plant equipment. Licensees must have this detailed understanding of their own plants in order to meet their obligations for public safety by ensuring a sound basis for making assessments of plants safety."

The history of the qualification issue since our April 13, 1978 order indicates that some licensees have ignored the responsibility we emphasized in our original order. As set forth in our April 13 order, our Office of Inspection and Enforcement had in late 1977 and early 1978 sent several Bulletins to licensees alerting them to qualification problems of specified electrical equipment. On May 1, 1978 our Office of Inspection and Enforcement sent a circular to all licensees bringing to their attention our April 13 order and reminding them that:

"You should examine installed safety-related electrical equipment, and ensure appropriate documentation of its qualification to function under postulated accident conditions."

Despite this explicit direction, I&E found that the licensee reviews and resolutions of qualification problem areas were not receiving the attention they warranted. Therefore, on February 8, 1979, I&E sent Bulletin 79-01 which required essentially the same things as the prior Circular, except that the licensees were required to respond in writing. In view of our original order and the subsequent circular and bulletin, some of the responses to Bulletin 79-01 indicate a disregard for environmental qualification problem. Despite the specific directions in Bulletin 79-01, some licensees did not meet the time deadlines imposed and did not provide the information required. The responses showed that some licensees, more than a year after our April 13 order, had unqualified equipment in their plants. Others did not have the documentation required to show qualification. Still others, if they possessed the documentation, did not include it in the response to the NRC, contrary to the Bulletin requirements. The staff must not tolerate the type of licensee response received in response to the qualification bulletins and circulars. It has the power to order licensees to comply with bulletins and circulars and that power should be exercised in cases like this.

The staff has sent out a new bulletin, Bulletin 79-01B, requesting not only the same information as Bulletin 79-01, but some additional information as well. It has initially reviewed some of the responses to this Bulletin. In addition, it has underway an inspection program at various plants to check environmental qualification. The results show that after two years from our initial decision in this matter, environmental qualification remains a serious problem. Almost none of the equipment so far examined meets all aspects of the DOR guidelines which include the areas which any qualification judgment must address.* * Deviations from the guidelines

*Commissioner Bradford notes that the situation is worse than this decision acknowledges. As the staff indicated in an April 13, 1980 briefing, "I guess when one makes the statement that we haven't found any equipment that meets all the guidelines, it's clear that we've found at least some equipment that just about meets all the guidelines (in a functional transcript). The particular equipment referred to has since been replaced or the licensee has provided adequate justification for continued operation."

*Commissioners Kennedy and Hendrie note that the staff has indicated (memo from W. Deeks to Commissioner Hendrie dated May 23, 1980) that, in each case where equipment as far examined by the staff has been identified as not being in compliance with provisions of the DOR Guidelines, either the equipment has been replaced or justification has been provided for continued plant operation while outstanding concerns are being resolved. The staff has further indicated that they have not identified any safety-related electrical equipment to date, other than that which has been required to be replaced or where adequate justification has been provided or continued operation, which will not perform its intended safety function during the time period in which it is required to function.

include such things as an inadequate test sequence where not all of the service conditions were addressed, incomplete documentation of tests performed, no consideration given to aging and the fact that the component installed in the plant is not identical to the component tested because of differences in model, size and materials. These deficiencies do not necessarily mean that the equipment is unqualified. However, they are cause for concern and require further case-by-case evaluations since the deviations involve areas which any environmental qualification judgment must address.

In connection with its review of 79-01B, the staff has found instances where equipment has not been installed according to its environmental qualification design. Thus, even though the environmental qualification documentation may be in order, the actual equipment in place might not be environmentally qualified. Licensees must check their own equipment in place to make sure this problem does not arise in their plants. Staff will devise a system for checking this area.

Based on problems like these and the history of previous responses to Commission inquiries on this subject, it is obvious to us that the nuclear industry is not devoting the resources necessary to solve the environmental qualification problem.

The staff has obtained from some licensees information vital to qualification judgments which, because of its proprietary nature, is not being shared with other licensees so that costly, unnecessary retesting is required and environmental qualification judgments are delayed. Such delays may affect safety as related decisions about equipment replacement are delayed. Accordingly, we are directing the staff to review environmental qualification information in its possession to determine how much of the information may be released to licensees to aid them in making safety judgments. This review should be completed within 45 days and the results forwarded to the Commission. We are also directing the staff to promptly pursue the possibility of the establishment, by the nuclear industry, of a Nuclear Qualified Equipment Clearinghouse. This Clearinghouse would have as its objective the sharing by all parties of environmental qualification information.

The Commission considers the staff's review of the 79-01B Bulletin responses to be of high priority, and the staff is requested to keep the Commission and the public apprised of any further findings of incomplete environmental qualification of safety-related electrical equipment, along with corrective actions taken or planned. The staff is requested to provide bimonthly reports of progress on this review. The staff is directed to complete its review of environmental qualification, including the publication of Safety Evaluation Reports by February 1, 1981. By no later than

June 30, 1982 all safety-related electrical equipment in all operating plants shall be qualified to the DOR Guidelines or NUREG-0588. These deadlines, however, do not excuse a licensee from the obligation to modify or replace inadequate equipment promptly.

During its review, the staff will be faced with many situations where qualification documents are poor or where the existing documentation raises questions about the ability of the equipment to perform its intended function in accident conditions. In such cases, the staff will make a technical judgment regarding continued operation.

In its petition, UCS requested that the Commission provide an opportunity for hearing once the staff had determined that the equipment was qualified to the standard it had requested. We believe there is no reason for the Commission now to order that such an opportunity be provided. If an interested person reviews the staff's written judgment on qualification and desires a hearing on the issue, that person may petition the Commission pursuant to 10 CFR 2.202 and 10 CFR 2.206.

One other problem area related to the environmental qualification issue has arisen in our review of the Petition for Reconsideration. This area concerns the delay associated with deciding upon an NRC environmental qualification testing program. In a separate memorandum sent today, we have asked the staff to address this area promptly.

We wish to clarify one point in our April 13, 1978 decision where we stated that:

...because the Sandia tests on environmental qualifications were inconclusive, the Commission is directing that this testing be repeated on qualified connectors with the results reported to the Commission and made available to the public. These connectors, qualified in accordance with IEEE-323 (1974), should include a representative sample of those commercially available and in use in nuclear power reactor safety systems.*

The intent here was to obtain information not provided by the unsuccessful Sandia Tests. However, in a staff memorandum of May 4, 1978, it was noted that no electrical connectors currently in use in operating reactors have been required to meet the 1974 version of IEEE-323. Connectors qualified to the 1974 version are being required for plants under construction, but apparently no such connectors are now commercially available. As a result, the staff outlined in its May 4 memorandum a two-phase program to: (1) test commercially available connectors qualified to IEEE-323 (1971), and (2) test connectors qualified to the 1974 version when they become available. The Commission endorses the staff's approach,

which will produce results in the near term directly applicable to currently operating plants, and at a later time, will generate information applicable to components in future plants.

The first phase of this test program is already underway and electrical connectors, in accordance with existing TVA specifications, have been successfully tested. These connectors were manufactured specifically for the test. The manufacturer and the utility which assembled the connectors under I&E supervision were aware that these specific connectors were to be tested. These tests, while useful, do not fulfill the April 13, 1978 requirement that connectors be tested which are "in use in nuclear power reactor safety systems." The Commission requires that connectors be tested which are not specifically manufactured for test purposes. This might be accomplished by testing spares at existing plants.

In this order we have not attempted to apply the lessons of Three Mile Island to environmental qualification. This issue is addressed in the NRC Action Plan under review by the Commission.

Fire Protection Issues

An item raised by UCS in its petition for reconsideration (Attachment D, 30) not discussed in our previous Memorandum and Order was that other tests conducted at the Sandia Laboratories showed "...that at least some of the so-called fire retardant coatings burn." The fire retardant coatings in use in nuclear plants have been shown in the Sandia tests to be effective only in reducing the fire propagation rate in cable assemblies, and there is no considerable variation among those coatings tested in the degree of protection provided. Nevertheless, the results of these tests do show that, for the tested configuration, re-ignited fires do not propagate between trays of coated cables.

Such coatings, by themselves, do not provide complete protection against fires. As we stated in our previous decision:

"The Commission endorses the staff's position that no one level of defense-in-depth can be made invulnerable. Strengthening one of the levels can compensate in some measure for reduced safety margins in the others."¹⁷

It is our conclusion that the staff has treated these results correctly in reviewing nuclear plant fire protection capabilities, by not considering these coatings alone to be satisfactory protection against fires.

¹⁷NRC 421.

On September 15, 1978, a fire protection test was performed for NRC at the Underwriters Laboratory (UL).¹⁸ This test, as one of a series of cable system fire tests, was a generic test of vertical cable trays with fire protection features generally applicable to those used or proposed for use in nuclear plants. The specific combinations of protective features and configurations were not representative of any particular plants. The purpose of the test was to investigate the effectiveness of ceramic fiber blankets as fire barriers on vertical cable runs, and to test fire detection and extinguishing systems. The ignition source was a spill of flammable liquid which had access to each tray barrier at the floor.

The test was observed by NRC staff and consultants. Although fire detectors did alarm promptly, the sprinkler system, which was installed in a manner not representative of any plant system,¹⁹ was not actuated. Two cables, contained in adjacent cable trays representing redundant safety divisions, were damaged. The apparent reasons for this damage were: (a) the sprinklers did not actuate, and (b) the fire was not excluded from the cable trays by the blanket barriers.

The Commission concurs with the staff's conclusion that although only minimal damage occurred,²⁰ the test did not demonstrate that acceptable protection is afforded by the particular configuration tested. Of concern is the staff's conclusion that there are plants which have configurations which are even more prone to damage. However, the staff states it has taken measures for these plants. Licensees have been informed of the results of this test through a circular from the Office of Inspection and Enforcement (IE Circular 78-18, November 6, 1978). Appropriate licensing boards have also been notified.

These two tests must be viewed in conjunction with one other development since our April 13th decision. When we made our original decision, the staff had stated in their December 15, 1977 submission that there were certain locations in some operating plants in which an unmitigated fire could affect redundant systems. On July 8, 1978, after our decision, the staff on the basis of further reviews concluded that each plant contains a few fire areas where a postulated unmitigated fire may affect both divisions of redundant safety systems. The staff has required

¹⁸Details of this test have previously been reported in staff memoranda of September 29, October 26, and November 2, all of which were provided to the petitioner and were placed in the Public Document Room.

¹⁹The sprinkler heads were arranged in groups of three. The test requirements called for actuation of all three heads prior to manual (not automatic) initiation of the flow water from another sprinkler. In plant installations of sprinkler systems, actuation of any one head would automatically allow for flow of water through that sprinkler head.

²⁰Only two cables of a total of over 500 involved in the test were functionally destroyed.

additional fire protection in these areas, including alternate shutdown systems.

In light of these facts, the staff's fire protection testing program is particularly important. We are concerned that the staff has still not completed plants and initiated tests which replicate typical fire protection measures being proposed for operating plants. The most recent status of the fire protection research program was reported to the Commission in the staff's submission of August 24, 1979 and memo of September 26, 1979. The primary emphasis of the program is currently being placed on integrated confirmatory tests of selected portions of fire protection systems which replicate those proposed in four different reactor plants. The purpose of these tests will be to confirm the adequacy of current designs and NRC staff licensing criteria.

The Commission views this testing program as a priority item and requests that the configurations which are of greatest concern should be first tested. The Commission requests that a definite schedule be established as soon as possible which provides that testing commence without delay. Any slippages in the schedule must be approved by the Commission. Bimonthly reports should be made on the progress of this program.

The staff has completed Safety Analysis Reports concerning fire protection for all operating reactors. The modifications recommended by the staff are not being implemented smoothly. Of utmost concern is the fact that some licensees, four and one-half years after the Browns Ferry fire, are resisting the modifications found necessary by the staff.

Because of these facts, the Commission approved on April 23, 1980¹⁴ a proposed rule concerning fire protection. This proposed rule and its Appendix R have been developed to establish the minimum acceptable fire protection requirements necessary to resolve these contested areas of concern for nuclear power plants operating prior to January 1, 1979.¹⁵ Other fire protection criteria that have been used by the staff during its plant-specific fire protection program reviews are contained in Appendix A to BTP 9.5-1. The combination of the guidance contained in Appendix A to BTP 9.5-1 and the requirements set forth in this proposed rule define the essential elements for an acceptable fire protection program at nuclear power plants docketed for Construction Permit prior to July 1, 1976, for demonstration of compliance with General Design Criterion J of Appendix A to 10 CFR Part 50. Similar acceptable guidance is provided in BTP 9.5-1

¹⁴This rule is scheduled for publication in the Federal Register on May 29, 1980.

¹⁵Commissioners Kennedy and Hendrie agreed with the fire protection safety provisions of the proposed Appendix K to 10 CFR Part 50, but disagreed with the implementation schedule proposed by the Commission. A statement of Commissioners Kennedy and Hendrie's separate views in this regard is attached.

for nuclear power plants docketed for Construction Permit after July 1, 1976.

All modifications (except for alternate and dedicated shutdown capability) would be required to be implemented by November 1, 1980 unless, for good cause shown the Commission approves an extension. Since the issues involved are well-known and have been under discussion for several years, the Commission anticipates approving few, if any, extensions. No plant would be allowed to continue operating after November 1, 1980 or beyond an extension date approved by the Commission, unless all modifications (except for alternate or dedicated shutdown capability) have been implemented. The Commission recognizes that, in a few instances, approval has previously been given to particular licensees to extend the implementation dates for some modifications beyond November 1, 1980. The Commission will review these extensions on a case-by-case basis to determine whether continued approval or some revision of the extension is appropriate.

For alternate or dedicated shutdown capability, the proposed rule specifies implementation dates which depend on which kind of capability is to be implemented and whether the plant is under review in the Systematic Evaluation Program (SEP). (Plants under review in the SEP include Palisades, Dresden 1 and 2, Oyster Creek, Millstone 1, Ginna, Haddam Neck, San Onofre 1, La Crosse, Big Rock Point, and Yankee Rowe.) For non-SEP plants, the proposed implementation dates are April 1, 1981 for alternate shutdown capability and December 1, 1981 for dedicated shutdown capability. Licensees who have committed to earlier implementation dates will be expected to meet those commitments. For SEP plants, the proposed implementation dates are December 1, 1981 for alternate shutdown capability and October 1, 1982 for dedicated shutdown capability. Licensees will be required to submit plans and schedules to meet these implementation deadlines by August 1, 1980 (non-SEP plants) and November 1, 1980 (SEP plants). The Commission may revise the implementation deadlines for SEP plants to earlier dates following completion by the NRC staff of its review of the status of fire protection at those plants. The staff review is expected to be completed in August 1980.

Other Issues

In its petition for reconsideration UCS states:

"UCS has completed a review of the underlying documents for some of the plants affected by the connector problem, and generally for the fire protection issue, entitled, 'Chronology and Analysis of Staff Actions.' We believe that it contains information which was not specifically brought to your attention prior to the issuance of the Memorandum and Order."

In its June 21, 1978 memorandum to the staff, the Commission asked if there were substantive matters in the UCS "Chronology" not specifically brought to the Commission's attention by the staff prior to the issuance of the April 13, 1978 Memorandum and Order.

The staff in its response to the Commission on August 31, identified several minor documents not specifically forwarded to the Commission.¹⁶ The staff stated that none of these documents contained information material to resolution of the matters in the petition. We agree.

The petition for reconsideration contains the following argument regarding our mention of WASH-1400 in the April 13 decision.¹⁷

"The Commission has, insofar as we can tell, relied on the probability analysis of WASH-1400 to conclude that another Browns Ferry-type fire is so improbable that the force of the regulations can be 'waxed' or temporarily de-emphasized or phased-in. That is the only apparent significance for the long quotation from the Browns Ferry Review Group given at page 37 of the Memorandum and Order. This Commission announced on August 27, 1974 (39 FR 30964) that WASH-1400 would not be used as a basis for licensing decisions pending the most careful study of its potential use for decisionmaking. The Commission has held to the position that WASH-1400 needs to go through thorough, systematic review before it can be useful in the regulatory context. Yet, one can only read the word of your decision here as establishing 'through the back door' the startling new precedent that apparent violations of the regulations can be justified on the basis of RSS probability analysis." (Petition at 13)

We concluded in the April 13 decision that the regulations, as expressed in the General Design Criteria and the single-failure criterion of Appendix A to 10 CFR Part 50, had been met with no dependence on risk assessment analysis of WASH-1400. 7 NRC 427, 428. WASH-1400 was referred to in the previous opinion only as background to the discussion of the Browns Ferry fire and subsequent events. While the Browns Ferry Special Review Group did refer to the WASH-1400 calculation based on Browns Ferry,¹⁸ it also cited steps taken by the NRC staff and the licensee after the fire to prevent such events in the future. In spite of the WASH-1400 analysis conclusions that fires were not a dominant contribution to overall risk, the

¹⁶In its response to the Commission request, the staff noted items that were not specifically sent to the Commission:

1. For Haddam Neck: a meeting report dated January 19, 1978. This meeting was, however, summarized in a report to the Commission dated January 26, 1978.
2. For Browns Ferry: a draft supplemental test report to NRC from Sandia, dated August 5, 1977.
3. For Pilgrim I: documents relating to the construction permit and operating license reviews. These items are part of the public docket for that plant.

¹⁷ NRC 422-424.

¹⁸Quoted at 7 NRC 423.

Review Group recommended further actions, all of which were incorporated into the Commission's Fire Protection Action Plan.¹⁹

Throughout this proceeding petitioner has repeatedly cited to and relied upon the decision of the Appeal Board in ALAB-138, *In the Matter of Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), 6 AEC 520 (1973). In particular, petitioners call upon the following language from that opinion:

"As a general rule, the Commission's regulations preclude challenge to applicable regulations in an individual licensing proceeding. 10 CFR 2.756. This rule has frequently been applied in such proceedings to preclude challenges by intervenors to Commission regulations. Generally, then, an intervenor cannot validly argue on safety grounds that a reactor which meets applicable standards should not be licensed. By the same token, neither the applicant nor the staff should be permitted to challenge applicable regulations, either directly or indirectly. Thus, those parties should not generally be permitted to seek or justify the licensing of a reactor which does not comply with applicable standards. Nor can they avoid compliance by arguing that, although an applicable regulation is not met, the public health and safety will still be protected. For, once a regulation is adopted, the standards it embodies represent the Commission's definition of what is required to protect the public health and safety."

"In short, in order for a facility to be licensed to operate, the applicant must establish that the facility complies with all applicable regulations. If the facility does not comply, or if there has been no showing that it does not comply, it may not be licensed."

* * * *

"It bears repetition that, under the principles we have set out above, it cannot be argued that, even though the reactor does not comply with the criteria, it should receive an unrestricted full-power, full-term license on the ground that there is reasonable assurance that it can operate without adversely affecting the public health and safety. Such an argument might be factually supportable, but would constitute an indirect attack on the applicable Commission regulations. Again, the point to be made is a simple one: reactors may not be licensed unless they comply with all applicable standards."²⁰

We believe that the actions taken today will ensure that the Commission's regulations concerning fire protection and environmental qualification are met. If the staff finds to the contrary, it must, as we stated earlier, make a judgment about the continued operation of the plant.

Our earlier decision made clear that the denial of emergency relief for fire protection was based primarily on the fact that the Sandia tests relied upon by petitioners provided "no new information...beyond confirmation

¹⁹7 NRC 425-427.

²⁰6 AEC 528-529.

of the current staff assumption for review of fire protection measures, i.e., that exposure fires may propagate beyond the minimum separation distances of Regulatory Guide 1.75...²⁰ Our specific response to petitioner's "shutdown" request states in regard to fire protection:

"...the Commission denies the requested relief... because (1) in view of the additional improvement of fire safety made in operating power plants since the Browns Ferry fire, coupled with the current Fire Protection Action Plan, those plants can continue to operate without undue risk to the public health and safety."²¹

Our April 13 decision in no way permits reliance on probabilistic calculations to enter regulatory policy "through the back door."²² Denial of emergency relief in this case is based upon our review of the fire protection program and the Sandia tests, and it is this review, and not probability analysis which assures us that public health and safety is not at undue risk.

Having considered all the facts and arguments before us in this matter, it remains our conclusion that the April 13, 1978 Memorandum and Order and staff actions resulting from it, together with the actions taken today, satisfactorily deal with all substantive issues raised by UCS. Subject to the clarification and revisions set out above, we affirm our prior decision.

It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 23rd day of May 1980.

²⁰ 10 NRC 424
²¹ 10 NRC 428

²² The Commission policy on the use of probabilistic risk assessment continues to be as articulated in our January 1979 policy statement. See memorandum and attachments, Chilk to Gosnick, January 18, 1979. With respect to the component parts of the Study, the Commission expects the staff to make use of them as appropriate, i.e., where the data base is adequate and analytical techniques permit. Taking due account of the reservations expressed in the Review Group Report and in its presentation to the Commission, the Commission supports the extended use of probabilistic risk assessment in regulatory decisionmaking.

SEPARATE COMMENTS OF COMMISSIONERS HENDRIE AND
KENNEDY ON THE PROPOSED NEW REGULATION FOR FIRE
PROTECTION PROGRAM FOR NUCLEAR POWER PLANTS
OPERATING PRIOR TO JANUARY 1, 1979

We agree with the fire safety provisions of the proposed Appendix R to 10 CFR Part 50. However, we do not agree with the implementation schedule that the Commission proposes. In its original presentation of this rule to the Commission, the staff proposed a schedule which we believe is more reasonable.

In the absence of Three Mile Island and the actions we have required, the short schedule of the Commission proposes might be appropriate in view of the extended period during which a number of these fire safety provisions have been under discussion. In the present situation, the Commission has properly imposed a large number of Three Mile Island-related safety requirements on operating nuclear power plants. We are concerned that the short implementation schedule proposed here for fire safety provisions, together with the large workload associated with the Three Mile Island requirements, may make it impossible for licensees to complete all of these measures in a carefully considered and thorough fashion. Since all operating plants have implemented a number of improvements in their fire safety postures, the remaining improvements to be required under the proposed rule do not seem to us so urgent as to require either shutting down of plants because of inability to complete these requirements on the short schedule proposed or to make those improvements in a hasty fashion.

We note also that the proposed implementation schedule would require licensees to submit their plans for complying with this rule by August 1, 1980. Considering that the staff has said it will not be able to complete its plant-by-plant reviews to determine specific requirements until July 1980, some licensees will simply not have any reasonable time to make an adequate plan.