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10 CFR Part 50

Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors

AGENCY: Nuclear Regulatory Commission.

ACTION: Final policy statement.

SUMMARY: This statement presents the policy of the Nuclear Regulatory Commission (NRC) with respect to the scope and purpose of Technical Specifications for nuclear power plants as required by 10 CFR 50.36. It establishes a specific set of objective criteria as guidance for determining which regulatory requirements and operating restrictions should be included in Technical Specifications. It encourages licensees to implement a voluntary program to update their Technical Specifications to be consistent with improved vendor-specific Standard Technical Specifications (STS) issued by the NRC in September 1992. The improved STS were published as the following NRC Reports: NUREG-1430, "Standard Technical Specifications, Babcock and Wilcox Plants", NUREG-1431, "Standard Technical Specifications,

Westinghouse Plants", NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants", NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", NUREG-1434, "Standard Technical Specifications, General Electric Plants, BWR/6".

These improved STS were the result of extensive technical meetings and discussions among the NRC staff, industry owners groups, vendors, and the Nuclear Management and Resources Council (NUMARC). The improved STS were developed based on the criteria in the interim Policy Statement published in February 1987. The Policy Statement now reflects modifications resulting from public comments on the interim Policy Statement and from the experience gained in developing the improved STS. Implementation of the Policy Statement through implementation of the improved STS is expected to produce an improvement in the safety of nuclear power plants through the use of more operator-oriented Technical Specifications, improved Technical Specification Bases, reduced action statement induced plant transients, and more efficient use of NRC and industry resources. The Policy Statement is not a regulation and does not establish binding requirements or limit the scope of safety issues for case-specific adjudication.

EFFECTIVE DATE: July 22, 1993.

ADDRESSES: Copies of NUREGs-1430, 1431, 1432, 1433, and 1434 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for public inspection and/or copying at the NRC Public Document Room, 2120 L Street NW., Lower Level of the Gelman Building, Washington, DC. The NUREGs can also be accessed through the NRC electronic bulletin board system. Details of how to use this system were published in the Federal Register on November 25, 1992 (57 FR 55602).

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SUPPLEMENTARY INFORMATION:

I. Background

Section 182a. of the Atomic Energy Act of 1954 (Act), as amended (42 U.S.C. 2232), mandates the inclusion of Technical Specifications in licenses for the operation of production and utilization facilities. The Act requires that Technical Specifications include information of the amount, kind, and source of special nuclear material, the place of use, and the specific characteristics of the facility. That section also indicates that Technical Specifications should contain such information as the Commission may by rule deem necessary to enable it to find that the utilization of special nuclear material will be in accord with the common defense and security and will provide adequate protection of public health and safety. Finally, that section requires Technical Specifications to be made a part of any license issued to operate production or utilization facilities.

Section 50.36, "Technical Specifications," which implements section 182a. of the Atomic Energy Act, was promulgated by the Commission on December 17, 1968 (33 FR 18610). This rule delineates requirements for determining the contents of Technical Specifications. Technical Specifications set forth the specific characteristics of the facility and the conditions for its operation that are required to provide adequate protection to the health and safety of the public. Specifically, 10 CFR 50.36 requires that:

Each license authorizing operation of a production or utilization facility of a type described in § 50.21 or § 50.22 will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to § 50.34. The Commission may include such additional technical specifications as the Commission finds appropriate.

Technical Specifications cannot be changed by licensees without prior NRC approval. However, since 1969, there has been a trend towards including in Technical Specifications not only those requirements derived from the analyses and evaluation included in the safety analysis report but also essentially all other Commission requirements governing the operation of nuclear power reactors. This extensive use of Technical Specifications is due in part to a lack of well-defined criteria (in either the body of the rule or in some other regulatory document) for what should be included in Technical Specifications. This has contributed to

the volume of Technical Specifications and to the several-fold increase, since 1969, in the number of license amendment applications to effect changes to the Technical Specifications. It has diverted both staff and licensee attention from the more important requirements in these documents to the extent that it has resulted in an adverse but unquantifiable impact on safety.

On March 30, 1982, the NRC published in the Federal Register (47 FR 13369) a proposed amendment to its regulations, 10 CFR part 50, "Domestic Licensing of Production and Utilization Facilities." The proposed amendment would have revised § 50.36, "Technical Specifications," to establish a new system of specifications divided into two general categories. Only those specifications contained in the first general category as Technical Specifications would have become part of the operating license and would have required prior NRC approval for any changes. Those specifications contained in the second general category would have become supplemental specifications and would not have required prior NRC approval for most changes. The NRC review of the first general category of specifications would have been the same as currently performed for Technical Specification changes, which are amendments to the operating license. For the second category, supplemental specifications, the licensee would have been allowed to make changes within specified conditions without prior NRC approval. The NRC would have reviewed these changes when they were made and would have done so in a manner similar to that currently used for reviewing design changes, tests, and experiments performed under the provisions of 10 CFR 50.58. Because of difficulties with defining the criteria for dividing the Technical Specifications into the two categories of the proposed rule and because of other higher priority licensing work, the rule change was deferred.

In the early 1980s, the nuclear industry and the NRC staff began studying the question of whether improvement to the existing system of establishing Technical Specification requirements for nuclear power plants was needed. During this time frame, two studies of this issue were performed by an NRC task group known as the Technical Specifications Improvement Project (TSIP) and a Subcommittee of the Atomic Industrial Forum's (AIF) Committee on Reactor Licensing and

Safety.¹ The overall conclusion of these studies was that many improvements in the scope and content of Technical Specifications were needed, and that a joint NRC and industry program should be initiated to implement these improvements. Both of these groups made specific recommendations which are summarized as follows:

(1) The NRC should adopt the criteria for defining the scope of Technical Specifications proposed in the AIF and TSIP reports. Those criteria should then be used by the NRC and each of the nuclear steam supply system vendor owners groups to completely rewrite and streamline the existing STS. This process would result in many requirements being transferred from control by Technical Specifications requirements to control by other mechanisms (e.g., the Final Safety Analysis Report (FSAR), Operating Procedures, Quality Assurance (QA) Plan) which would not require a license amendment or prior NRC approval when changes are needed. The new STS should include greater emphasis on human factors principles in order to add clarity and understanding to the text of the STS. The new STS should also provide improvements to the Bases Section of Technical Specifications which provides the purpose for each requirement in the specification.

(2) A parallel program of short-term improvements in both the scope and substance of the existing Technical Specifications should be initiated in addition to developing a new STS as identified in paragraph (1) above.

On February 6, 1987, the NRC published in the Federal Register for public comment (52 FR 3788) an interim Policy Statement on Technical Specification Improvements for Nuclear Power Reactors containing proposed criteria in response to item (1). These criteria were generally derived from the criteria proposed in the AIF and TSIP reports and were modified slightly based on discussions between the NRC staff and the industry. The public comment period expired on March 23, 1987.

The NRC has developed a program for short-term improvements as described in item (2). These are known as "line-item" improvements and are generic improvements developed and

¹ SECY-86-10, "Recommendations for Improving Technical Specifications," dated January 13, 1986, contains both "Recommendations for Improving Technical Specifications," NRC Technical Specifications Improvement Project, September 30, 1985, and "Technical Specifications Improvements," AIF Subcommittee on Technical Specifications Improvements, October 1, 1985.

promulgated by the NRC staff for voluntary adoption by licensees.

Subsequently, improved vendor-specific STS were developed and issued by the NRC in September 1992. The improved STS were published as the following NRC Reports:

- NUREG-1430, "Standard Technical Specifications, Babcock and Wilcox Plants"

- NUREG-1431, "Standard Technical Specifications, Westinghouse Plants"

- NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants"

- NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4"

- NUREG-1434, "Standard Technical Specifications, General Electric Plants, BWR/6"

These improved STS were the result of extensive technical meetings and discussions among the NRC staff, industry owners groups, vendors, and NUMARC.

II. Summary of Public Comments on the Interim Policy Statement and NRC Responses

In early 1987, the Commission received 29 letters with comments on the Interim Policy Statement on Technical Specification Improvements. A list of the commenters and a detailed analysis of public comments are available for public inspection in the NRC Public Document Room at 2120 L Street NW., Lower Level of the Gelman Building, Washington, DC 20555.

Twenty-five of the 29 commenters were generally supportive of the Commission Policy Statement and the overall Technical Specifications Improvement Program; 3 commenters were generally not supportive; and 1 commenter was neutral. Of the 29 commenters, 23 can be categorized as representing industry views, 3 are government agencies, and 3 are interested members of the public. The industry group stated strong support for the Policy Statement and its criteria. The comments included extensive support for the overall Commission objectives of improving Technical Specifications so they are clearer and less ambiguous. The three commenters opposed to the Policy Statement were primarily concerned that moving any requirements to other documents might make them "less enforceable" than Technical Specifications or might weaken the inspection process.

Based on the criteria in this Policy Statement that define requirements that should be controlled by Technical Specifications, the Commission concludes that some requirements

previously contained in Technical Specifications should be relocated to other documents that do not have the direct enforceability of Technical Specifications and do not require NRC staff approval before changes are made. Many of the requirements will be relocated to the FSAR and will be controlled through 10 CFR 50.59. Other requirements will be relocated to more appropriate documents (e.g., Security Plan, QA Plan) and controlled by the applicable regulatory requirements. The adequacy of controls for relocated requirements which do not fit in the above categories will be reviewed and approved by the NRC staff on a case-by-case basis to determine, among other things, whether an enforceable control method will need to be established. NRC approval would still be required for any changes to requirements covered by 10 CFR 50.59 that involved an unreviewed safety question and for changes which exceed the threshold criteria in the regulations for other controlled documents. The Commission believes that this control and enforcement posture is commensurate with the safety importance of the relocated requirements.

Many of the commenters addressed specific issues discussed in the Policy Statement. The following paragraphs discuss issues addressed by a significant portion of the commenters or that are of particular interest.

A slight majority of the industry commenters stated that they agreed with the Policy Statement that improvements should be voluntary. In addition, four of the commenters stated that if licensees elect to implement the Policy Statement, they should not be required to convert to STS. The Commission has concluded that where STS requirements are generally applicable, the STS should be adopted unless adequate justification for acceptance of a plant-specific Technical Specification is provided. Cases may arise where there is a question concerning the NRC staff proposed addition of requirements in the improved STS that are not in a licensee's current Technical Specifications. In such cases, the Commission intends to control the process by evaluating the imposition of additional requirements in accordance with the Commission regulations on backfitting (10 CFR 50.109).

The interim Policy Statement identified three criteria to be used to define which of the current Technical Specification requirements should be retained or included in Technical Specifications and which requirements could be relocated to licensee-controlled documents. Half of the industry

commenters stated that licensees should be allowed to selectively apply the criteria without fully adopting the improvement process (e.g., not improving Bases and not applying accepted human factors principles to Technical Specifications). In this regard, it is the Commission policy that licensees may adopt portions of the improved STS without fully implementing all STS improvements. The Commission will, however, place the highest priority on the review and approval of Technical Specifications related submittals for complete conversions to the improved STS. For licensees who adopt portions of the improved STS, these portions shall include all related requirements and will normally be developed as line-item improvements by the NRC staff. In all cases, the Commission expects improved Bases to accompany requests for improved Technical Specifications. The Commission realizes, however, that it may not always be practical for licensees to apply all of the human factors principles used in the improved STS. The Commission believes that the above approach will result in safety improvements as well as consistency in Technical Specifications requirements and will allow the most efficient use of NRC and industry resources.

When the interim Policy Statement was issued, the Commission believed that it was only the overall package of improvements which, if adopted, would produce an improvement in safety. However, experience in the development of the improved STS and in the review of license amendment requests has led the Commission to conclude that safety benefits can be realized from adopting portions of the improved STS without fully implementing all STS improvements. The NRC staff has developed several line-item improvements since the publication of the interim Policy Statement. These improvements have been reviewed by the Committee to Review Generic Requirements and have been made available for voluntary implementation through generic letters. While the Commission continues to believe that the greatest improvement to safety can be realized by implementing all of the improvements in the improved STS, it also believes there is considerable merit in allowing licensees to improve portions of their Technical Specifications that could result in a safety benefit.

Fifteen industry respondents strongly supported the use of the criteria to determine which future requirements (e.g., from generic issues) would be included in Technical Specifications.

This has been the Commission intent and the Policy Statement has been modified accordingly.

Ten commenters stated that the proposed criteria were acceptable as is, and several recommended prompt rulemaking to codify the criteria. Five other commenters indicated that the criteria were inadequate or that additional discussion of the criteria scope and intent was needed. After studying comments and use of the criteria, the Commission determined that further discussion of the criteria was needed and this is included in Section IV. The Department of Nuclear Safety, State of Illinois, recommended adding a fourth criterion and delaying implementation of the Policy Statement until rule changes necessary for implementation are promulgated. The criterion suggested would expand on Criterion 3 to cover all anticipated operational sequences. The Commission believes that safety significant operational sequences are adequately addressed by Criteria 2 and 3. The Commission has added a fourth criterion (different from that proposed by the State of Illinois) to capture requirements which operating experience or probabilistic safety assessment (PSA) show to be significant to public health and safety.

In considering the specific comments on the criteria and based on experience in applying the criteria, the Commission concluded that the criteria should be codified through rulemaking. Currently, there is a common understanding between the NRC staff and the industry that the criteria provide a template to develop improved Technical Specifications. The criteria are being used by licensees to prepare Technical Specification submittals to the NRC. If the NRC staff does not believe a licensee has properly applied the criteria, the staff will not issue a license amendment until the licensee has properly applied the criteria. For these reasons, the Commission believes it is appropriate to codify the criteria in a rule which will be consistent with this Policy Statement. The Commission will ensure that the voluntary nature of the Technical Specifications Improvement Program is preserved in the rulemaking process. Comments on this Policy Statement are welcomed and will be considered and addressed during preparation of the proposed rule.

In addition to the comments on the three original criteria, seven of the commenters were opposed to using PSA to define the contents of the Technical Specifications. They expressed concern that PSA has only limited applicability and that its use is not well defined.

Moreover, these commenters noted that plant licensing is based primarily on Design Basis Accident analysis which lends itself to a deterministic process rather than a PSA-based process for identifying Technical Specification requirements. The Commission believes that plant- and design-specific PSAs have yielded valuable insight to unique plant vulnerabilities not fully recognized in the safety analysis report Design Basis Accident or Transient analyses.

Some commenters stated that if PSA is used to impose Technical Specifications for some high-risk items, it should also be used to remove some low-risk items. The Commission notes that this approach to Technical Specifications has been considered at length during the development of the Policy Statement. Since the first three criteria in the Policy Statement are derived from the plant safety analysis report which is deterministic in nature, (but which itself incorporates qualitative risk insights) the Commission believes that a broad application of PSA to remove individual requirements from Technical Specifications is generally counter to the philosophy of the first three criteria. However, risk insights were used to determine the values of some completion times and surveillance frequencies for items retained in the improved STS.

The extension of the sole use of PSA to remove individual requirements from Technical Specifications would need to be founded in a broader policy of risk-based regulation which the Commission is currently pursuing at a level more inclusive than Technical Specifications improvements. Specifically, if a requirement meets any one of the four criteria, it should be retained or included in Technical Specifications. The Commission believes that it would be inappropriate at this time to allow requirements which meet one or more of the first three criteria to be deleted from Technical Specifications based solely on PSA (Criterion 4). However, if the results of PSA indicate that Technical Specifications can be relaxed or removed, a deterministic review will be performed. If the results of the deterministic review also support relaxing or removing the Technical Specifications, the NRC staff will not preclude relaxing or removing such Technical Specifications.

The Commission Policy in this regard is consistent with its Policy Statement on "Safety Goals for the Operation of Nuclear Power Plants," 51 FR 30028, published on August 21, 1986. The Policy Statement on Safety Goals states

in part, "... * * * probabilistic results should also be reasonably balanced and supported through use of deterministic arguments. In this way, judgments can be made * * * about the degree of confidence to be given to these [probabilistic] estimates and assumptions. This is a key part of the process of determining the degree of regulatory conservatism that may be warranted for particular decisions. This defense-in-depth approach is expected to continue to ensure the protection of public health and safety." At its conclusion, the Policy Statement on Safety Goals adds, "Nor are the safety goals and these implementation guidelines in and of themselves meant to serve as a sole basis for licensing decisions. However, if pursuant to these guidelines, information is developed that is applicable to a particular licensing decision, it may be considered as one factor in the licensing decision."

The Commission will continue to use PSA, consistent with its policy on Safety Goals, as a tool in evaluating specific line-item improvements to Technical Specifications, new requirements, and industry proposals for risk-based Technical Specification changes.

About a third of the respondents stated that NRC should place a high priority on making available specific line-item improvements to current Technical Specifications. The Commission agrees with these comments but will continue to give the highest priority to complete conversions to the improved STS.

III. Discussion

The Commission recognizes the advantages of improved Technical Specifications. Clarification of the scope and purpose of Technical Specifications has provided useful guidance to both the NRC and industry and has served as an important incentive for industry participation in a voluntary program to improve Technical Specifications. It has resulted in improved STS that are intended to focus licensee and plant operator attention on those plant conditions most important to safety. This should also result in more efficient use of agency and industry resources.

The Policy Statement identifies four criteria for defining the scope of Technical Specifications. These criteria are intended to be consistent with the scope of Technical Specifications as stated in the Statement of Consideration accompanying the current rule, 10 CFR 50.36.

The Statement of Consideration for the final rule issuing 10 CFR 50.36 (33 FR 18610, December 17, 1968) discusses

the scope of Technical Specifications as including the following:

In the revised system, emphasis is placed on two general classes of technical matters: (1) those related to prevention of accidents, and (2) those related to mitigation of the consequences of accidents. By systematic analysis and evaluation of a particular facility, each applicant is required to identify at the construction permit stage, those items that are directly related to maintaining the integrity of the physical barriers designed to contain radioactivity. Such items are expected to be the subjects of Technical Specifications in the operating license.

The first of these two general classes of technical matters to be included in Technical Specifications is captured by criteria (1), (4), and to some extent criterion (2) in that they address systems and process variables that alert the operator to a situation when accident initiation is more likely. The second general class of technical matters is explicitly addressed and captured by criteria (2), (3), and (4). By applying the four criteria contained in the Policy Statement a licensee should capture all of those specific characteristics of its facility and the conditions for its operation that are required to meet the principal operative standard in Section 182a. of the Atomic Energy Act, that is, that adequate protection is provided to the health and safety of the public.

The Commission recognizes that the four criteria carry a theme of focusing on the technical requirements for features of controlling importance to safety. Since many of the requirements are of immediate concern to the health and safety of the public, this Policy Statement adopts, for the purpose of relocating requirements from Technical Specifications to licensee-controlled documents, the subjective statement of the purpose of Technical Specifications expressed by the Atomic Safety and Licensing Appeal Board in Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979). There, the Appeal Board interpreted Technical Specifications as being reserved for those conditions or limitations upon reactor operation necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

The Commission wishes to emphasize that this Policy Statement is intended to be consistent with the language of section 182a. of the Atomic Energy Act, 10 CFR 50.36, and previous interpretations of the regulations. The Policy Statement merely clarifies the scope and purpose of Technical Specifications by identifying criteria which can be used to establish, more

clearly, the framework for Technical Specifications (i.e., identify those requirements derived from the analyses and evaluation included in the safety analysis report and which are of immediate concern to the health and safety of the public). The Commission intends to codify these criteria in a rule which will be consistent with the Policy Statement. The Policy Statement also describes a mechanism whereby requirements that do not meet these criteria can be identified and controlled through mechanisms other than Technical Specifications.

Over the past several years, the Commission has seen an improvement in industry development of effective maintenance programs. In addition, there has been an overall improvement in the industry in the conduct of 10 CFR 50.59 safety evaluations since the NUMARC publication of NSAC-125, "Guidelines for 10 CFR 50.59 Safety Evaluations," in June 1989. Furthermore, the ongoing NRC study on shutdown and low-power operation should provide some important insights for additional Technical Specification improvements in the areas of shutdown and low power operations. The Commission believes that these improvements, combined with improved Technical Specifications developed based on this Policy Statement, can lead to significant improvements in the operational safety of nuclear power facilities.

IV. The Commission Policy

The purpose of Technical Specifications is to impose those conditions or limitations upon reactor operation necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety by identifying those features that are of controlling importance to safety and establishing on them certain conditions of operation which cannot be changed without prior Commission approval.

Licensees are encouraged to implement a program to upgrade their Technical Specifications consistent with this purpose. The Commission will place the highest priority on requests based on the criteria below (as clarified by the supporting discussion) for individual license amendments that evaluate all of the Limiting Conditions for Operation (LCOs) for an individual plant to determine which LCOs should be included in the Technical Specifications. In addition, the Commission will also entertain requests to adopt portions of the improved STS, even if the licensee does not adopt all STS improvements. These portions shall

include all related requirements and will normally be developed as line-item improvements by the NRC staff. The Commission encourages all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.

LCOs which do not meet any of the criteria below may be proposed for removal from the Technical Specifications and relocation to licensee-controlled documents, such as the FSAR. The criteria may be applied to either standard or custom Technical Specifications. The Commission will also consider the criteria in evaluating future generic requirements for inclusion in Technical Specifications.

In accordance with this Policy Statement, improved STS have been developed and will be maintained for each NSSS owners group. The Commission encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications. During individual Technical Specification conversions, the nonvoluntary addition of new requirements from the improved STS to individual plant Technical Specifications will be evaluated in accordance with the Commission regulations on backfitting (10 CFR 50.109) unless the staff suggested additional changes are needed to make the licensee requested changes acceptable from the standpoint of adequate protection or compliance with NRC regulations, in which case § 50.109 does not apply and the request may be denied without the additional items. However, in all other cases, it is the Commission intent that the wording and Bases of the improved STS be used in the Technical Specification related submittal to the extent practicable.

The following criteria delineate those constraints on design and operation of nuclear power plants that are derived from the plant safety analysis report or PSA information and that belong in Technical Specifications in accordance with 10 CFR 50.36 and the purpose of Technical Specifications stated above.

Criterion 1

Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Discussion of Criterion 1

A basic concept in the adequate protection of the public health and safety is the prevention of accidents. Instrumentation is installed to detect significant abnormal degradation of the

reactor coolant pressure boundary so as to allow operator actions to either correct the condition or to shut down the plant safely, thus reducing the likelihood of a loss-of-coolant accident.

This criterion is intended to ensure that Technical Specifications control those instruments specifically installed to detect excessive reactor coolant system leakage. This criterion should not, however, be interpreted to include instrumentation to detect precursors to reactor coolant pressure boundary leakage or instrumentation to identify the source of actual leakage (e.g., loose parts monitor, seismic instrumentation, valve position indicators).

Criterion 2

A process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Discussion of Criterion 2

Another basic concept in the adequate protection of the public health and safety is that the plant shall be operated within the bounds of the initial conditions assumed in the existing Design Basis Accident and Transient analyses and that the plant will be operated to preclude unanalyzed transients and accidents. These analyses consist of postulated events, analyzed in the FSAR, for which a structure, system, or component must meet specified functional goals.

These analyses are contained in Chapters 6 and 15 of the FSAR (or equivalent chapters) and are identified as Condition II, III, or IV events (ANSI N 18.2) (or equivalent) that either assume the failure of or present a challenge to the integrity of a fission product barrier.

As used in Criterion 2, process variables are only those parameters for which specific values or ranges of values have been chosen as reference bounds in the Design Basis Accident or Transient analyses and which are monitored and controlled during power operation such that process values remain within the analysis bounds. Process variables captured by Criterion 2 are not, however, limited to only those directly monitored and controlled from the control room. These could also include other features or characteristics that are specifically assumed in Design Basis Accident and Transient analyses even if they cannot be directly observed in the control room (e.g., moderator temperature coefficient and hot channel factors).

The purpose of this criterion is to capture those process variables that have initial values assumed in the Design Basis Accident and Transient analyses, and which are monitored and controlled during power operation. As long as these variables are maintained within the established values, risk to the public safety is presumed to be acceptably low. This criterion also includes active design features (e.g., high pressure/low pressure system valves and interlocks) and operating restrictions (pressure/temperature limits) needed to preclude unanalyzed accidents and transients.

Criterion 3

A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Discussion of Criterion 3

A third concept in the adequate protection of the public health and safety is that in the event that a postulated Design Basis Accident or Transient should occur, structures, systems, and components are available to function or to actuate in order to mitigate the consequence of the Design Basis Accident or Transient. Safety sequence analyses or their equivalent have been performed in recent years and provide a method of presenting the plant response to an accident. These can be used to define the primary success paths.

A safety sequence analysis is a systematic examination of the actions required to mitigate the consequences of events considered in the plant's Design Basis Accident and Transient analyses, as presented in Chapters 6 and 15 of the plant's FSAR (or equivalent chapters). Such a safety sequence analysis considers all applicable events, whether explicitly or implicitly presented. The primary success path of a safety sequence analysis consists of the combination and sequences of equipment needed to operate (including consideration of the single failure criteria), so that the plant response to Design Basis Accidents and Transients limits the consequences of these events to within the appropriate acceptance criteria.

It is the intent of this criterion to capture into Technical Specifications only those structures, systems, and components that are part of the primary success path of a safety sequence analysis. Also captured by this criterion are those support and actuation systems

that are necessary for items in the primary success path to successfully function. The primary success path for a particular mode of operation does not include backup and diverse equipment (e.g., rod withdrawal block which is a backup to the average power range monitor high flux trip in the startup mode, safety valves which are backup to low temperature overpressure relief valves during cold shutdown).

Criterion 4

A structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

Discussion of Criterion 4

It is the Commission policy that licensees retain in their Technical Specifications LCOs, action statements and Surveillance Requirements for the following systems (as applicable), which operating experience and PSA have generally shown to be significant to public health and safety and any other structures, systems, or components that meet this criterion:

- Reactor Core Isolation Cooling/ Isolation Condenser,
- Residual Heat Removal,
- Standby Liquid Control, and
- Recirculation Pump Trip.

The Commission recognizes that other structures, systems, or components may meet this criterion. Plant- and design-specific PSAs have yielded valuable insight to unique plant vulnerabilities not fully recognized in the safety analysis report Design Basis Accident or Transient analyses. It is the intent of this criterion that those requirements that PSA or operating experience exposes as significant to public health and safety, consistent with the Commission's Safety Goal and Severe Accident Policies, be retained or included in Technical Specifications.

The Commission expects that licensees, in preparing their Technical Specification related submittals, will utilize any plant-specific PSA or risk survey and any available literature on risk insights and PSAs. This material should be employed to strengthen the technical bases for those requirements that remain in Technical Specifications, when applicable, and to verify that none of the requirements to be relocated contain constraints of prime importance in limiting the likelihood or severity of the accident sequences that are commonly found to dominate risk. Similarly, the NRC staff will also employ risk insights and PSAs in evaluating Technical Specifications related submittals. Further, as a part of

the Commission's ongoing program of improving Technical Specifications, it will continue to consider methods to make better use of risk and reliability information for defining future generic Technical Specification requirements.

Requirements which would be relocated from Technical Specifications to a licensee-controlled document (e.g., the FSAR, the Security Plan, the QA Plan, or Fire Protection Plan) may be changed or deleted in conjunction with the filing of individual Technical Specifications related requests to implement this Policy Statement. The package containing the amendment request must contain a clear statement of the basis for the change or deletion, a safety evaluation, and a statement that the changes have been reviewed by a multidisciplinary group of responsible, technical supervisory personnel, including onsite operations personnel.

Appropriate Surveillance Requirements and Actions should be retained for each LCO which remains or is included in the Technical Specifications. Each LCO, Action, and Surveillance Requirement should have supporting Bases. The Bases should at a minimum address the following questions and cite references to appropriate licensing documentation (e.g., FSAR, Topical Report) to support the Bases.

1. What is the justification for the Technical Specification, i.e., which Policy Statement criterion requires it to be in the Technical Specifications?

2. What are the Bases for each LCO, i.e., why was it determined to be the lowest functional capability or performance level for the system or component in question necessary for safe operation of the facility and, what are the reasons for the Applicability of the LCO?

3. What are the Bases for each Action, i.e., why should this remedial action be taken if the associated LCO cannot be met; how does this Action relate to other Actions associated with the LCO; and what justifies continued operation of the system or component at the reduced state from the state specified in the LCO for the allowed time period?

4. What are the Bases for each Safety Limit?

5. What are the Bases for each Surveillance Requirement and Surveillance Frequency; i.e., what specific functional requirement is the surveillance designed to verify? Why is this surveillance necessary at the specified frequency to assure that the system or component function is maintained, that facility operation will be within the Safety Limits, and that the LCO will be met?

Note: In answering these questions the Bases for each number (e.g., Allowable Value, Response Time, Completion Time, Surveillance Frequency), state, condition, and definition (e.g., operability) should be clearly specified. As an example, a number might be based on engineering judgment, past experience, or PSA insights; but this should be clearly stated.

When licensees submit amendment requests based on this Policy Statement, they should identify the location of and controls for the technical and administrative requirements of the relocated requirements. The NRC staff will carefully review these submittals to ensure the accountability and the acceptability of controls for each relocated requirement. Many of the requirements will be relocated to the FSAR and will be enforceable through 10 CFR 50.59. Other requirements will be relocated to more appropriate documents (e.g., Security Plan, QA Plan) and controlled by the applicable regulatory requirements. The adequacy of controls for relocated requirements which do not fit in the above categories will be reviewed and approved by the NRC staff on a case-by-case basis to determine, among other things, whether an enforceable control method will need to be established.

Since some of the requirements currently contained in the Technical Specifications will be relocated to licensee-controlled documents to which changes will be controlled by 10 CFR 50.59, the NRC has been giving increased attention to the 10 CFR 50.59 change process. In the interim Policy Statement the Commission encouraged industry to obtain the support of NUMARC in sponsoring activities to encourage the highest quality for utility review of changes made pursuant to 10 CFR 50.59. In June 1989, NUMARC published NSAC-25, "Guidelines for 10 CFR 50.59 Safety Evaluations." During the development of these guidelines, the NRC staff and NUMARC met on several occasions to discuss the content of NSAC-25. Since its publication, nearly all of the industry has been using NSAC-25 as guidance in performing 10 CFR 50.59 safety evaluations. While the NRC and the industry do not fully agree on all issues associated with NSAC-25, based on inspections and reviews since its issuance, the NRC staff has seen an overall improvement in the conduct of 10 CFR 50.59 safety evaluations. Moreover, the guidelines described in NSAC-25 go beyond what is required by 10 CFR 50.59 in certain respects. Thus, the Commission does not believe that the guidelines are appropriate for endorsement as regulatory guidance.

In addition, in December 1992, the Office of Nuclear Reactor Regulation issued Inspection Procedure 37001, "10 CFR 50.59 Safety Evaluation Program," to provide NRC inspectors with updated guidance for evaluating utility performance in implementing the requirements of 10 CFR 50.59. The Commission believes use of this inspection guidance will provide continued assurance that the NRC is appropriately monitoring 10 CFR 50.59 safety evaluation programs for licensees who convert to the improved STS.

The Commission emphasizes the importance of a well-planned transition for licensees who plan to convert to the improved STS. Such a transition should include careful consideration of procedure revisions and operator training to ensure safe operation during and following the conversion.

The NRC will, consistent with its mission, allocate resources as necessary to implement this Policy Statement.

V. Enforcement Policy

Any changes to a licensee's Technical Specifications to apply this Policy Statement's criteria will be made by the license amendment process prior to implementation. Compliance with Technical Specifications is required by the Commission, and adherence to commitments contained in licensee-controlled documents is expected by the Commission. Violations and deviations will, as in the past, be handled in accordance with the NRC Enforcement Policy in 10 CFR part 2, appendix C (1992).

If a licensee elects to apply these criteria, the requirements of the removed specifications will be relocated to the FSAR or other licensee-controlled documents. Licensees are to operate their facilities in conformance with the descriptions of their facilities and procedures in their FSAR. Changes to the facility or to procedures described in the FSAR are to be made in accordance with 10 CFR 50.59. The Commission will take appropriate enforcement action to ensure that licensees comply with 10 CFR 50.59. Changes made in accordance with the provisions of other licensee-controlled documents (e.g., QA plan, Security Plan) are subject to the specific requirements for those documents. Nothing in this Policy Statement shall limit the authority of the NRC to conduct inspections as deemed necessary and to take appropriate enforcement action when regulatory requirements or commitments are not met.

This draft final Policy Statement amends information collection requirements that are subject to the

Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). This Policy Statement has been submitted to the Office of Management and Budget for review and approval of the paperwork requirements.

The public reporting burden for this voluntary collection of information is estimated to average 4000 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch (MNBB-7714), U.S. Nuclear Regulatory Commission, Washington DC 20555, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-0019, (3150-0011), Office of Management and Budget, Washington, DC 20503.

Dated at Washington, DC, this 16th day of July, 1993.

**For the Nuclear Regulatory Commission,
Samuel J. Chilk,
Secretary of the Commission.**