POLICY ISSUE
(Commission Meeting)

December 4, 1985 SECY-85-382

For: The Commissioners

From: William J. Dircks
Executive Director for Operations

Subject: STANDARDIZATION POLICY STATEMENT

Purpose: To respond to those portions of the staff requirements memoranda dated February 22 and April 5, 1985 which requested the staff to prepare for the Commission's consideration a draft revision to its 1978 standardization policy statement. The draft policy statement is provided as Enclosure 1. The balance of the staff's responses was provided in a memorandum to the Commission dated March 18, 1985.

Background: The initial policy statement of the Atomic Energy Commission (AEC) on nuclear power plant standardization was issued in April 1972. In March 1973, the AEC announced its readiness to implement its standardization policy utilizing three distinct concepts--the reference system concept, the duplicate plant concept and the manufacturing license concept. In August 1974, the AEC announced a fourth standardization concept--the replicate plant concept. On January 19, 1975, the AEC was abolished and its regulatory responsibilities were assigned to the newly-formed Nuclear Regulatory Commission (the Commission). In July 1977, the Commission issued a statement that reaffirmed its support of standardization and requested comments and suggestions on proposed program changes and other steps it might undertake to further encourage standardization. The Commission's most recent standardization policy statement was issued in August 1978. That policy statement described in detail the conditions that must be met for each of the standardization concepts, and extended their terms of approval.

Despite the lack of new plant orders, and the numerous cancellations and deferrals of plants already ordered in

CONTACT:
D. Scaletti, NRR
49-29787

recent years, considerable use has been made of standardization since its inception. A summary of the implementation of the standardization program to date is provided as Enclosure 2.

The Commission recently issued its severe accident policy statement which sets forth licensing requirements for new plant designs, both standard and custom. In addition, the Commission has proposed to the Congress its draft "Nuclear Power Plant Licensing and Standardization Act of 1985" which would provide for the issuance of combined construction permits and operating licenses in a one-step licensing process, early site approvals and standard design approvals. Finally, considerable additional experience has been acquired in implementing the standardization program. Therefore, we believe that it is appropriate at this time to revise the 1978 standardization policy statement to reflect these initiatives.

Discussion: The draft revision to the 1978 policy statement reflects the applicable provisions of the severe accident policy statement and the draft "Nuclear Power Plant Licensing and Standardization Act of 1985." It also reflects the experience we have acquired in implementing the standardization program since 1978 and our current views on standardization.

The draft policy statement identifies the reference system design certification as the true goal of standardization, but recognizes that the duplicate plant, replicate plant and manufacturing license concepts are necessary options that should be maintained. Industry representatives have indicated that the types of applications most likely in the near term will include reactivation of deferred plants and replication of previously-licensed plants. Policies and procedures regarding deferred plants are being developed separately from this policy statement. The staff has included in the draft policy statement two transition options relating to replication of previously-licensed plants. These options address replicationof recently-licensed plants, which have been reviewed against NUREG-0800, and replication of earlier-licensed plants, which have not been reviewed against NUREG-0800. The staff believes that these transition options should conform with the provisions of the draft policy statement. However, during the transition period, the staff recommends that the reference period for replication of such plants be extended for five years from the effective

date of the revised policy statement. In addition, the staff recommends that consideration be given to relaxation of the other provisions of this policy statement during this five-year period if suitably justified.

The most significant proposed revisions to the 1978 standardization policy statement are outlined below. A more detailed discussion of these revisions is provided in Enclosure 3.

(1) The four licensing requirements for new plant designs as set forth in the Commission's severe accident policy statement have been added.

(2) Provisions for design certification through rulemaking have been added.

(3) The ability of the staff and Commission to make changes to approved or certified designs has been made more restrictive. An explanation of the applicability of the backfitting rule (10 CFR 50.109) to each of the options has been added. The ability of holders of design approvals or certifications to make such changes has been made less restrictive.

(4) The overlap in the reference periods between the duplicate and replicate design concepts has been eliminated.

(5) Fees required of reference design applicants will be allocated among the applicants for permits and licenses which propose to use the reference design. Enactment of the draft "Nuclear Power Plant Licensing and Standardization Act of 1985" would be necessary prior to adopting this approach.

(6) Final design approvals and design certifications can be renewed once for a duration up to the original approval period. Preliminary design approvals can only be renewed on a finding of good cause.

To assist the staff in revising the standardization policy statement, the Atomic Industrial Forum (AIF) formed a study group. As a result of this effort they developed an outline of a proposed policy statement. That outline is provided as Enclosure 4. The AIF's proposed standardization policy is consistent with that proposed by the staff with the exception of four differences addressed below.

(1) The AIF proposes that the duration of the approvals for all standardization concepts be ten years. The staff believes that the ten-year approval period should be reserved for certified designs; all others should be five years.

(2) The AIF proposes that preliminary design approvals be renewable. The staff believes preliminary design approvals should be renewable by the staff for a period of up to five years only on a finding of good cause.

(3) The staff believes that final design approvals and design certifications should be based on a level of design detail equivalent to that required for a Final Safety Analysis Report. The AIF appears to suggest that a lesser degree of design detail should be required; however it recognizes the need to further discuss this issue with the staff.

(4) The AIF proposes that the cost-benefit analysis for staff- or Commission-proposed changes to approved designs be performed on the lead or first unit referencing the given standard design. The procedures described in the backfitting rule will establish the threshold for staff- or Commission-proposed changes to an approved design.

The Executive Legal Director has prepared for the Commission's consideration a paper describing several options for design certification rulemaking proceedings. That paper is provided as Enclosure 5.

Finally, the Office of Administration has prepared for the Commission's consideration a discussion of license fees related to the reference system concept. That paper is provided as Enclosure 6.

William J. Dircks
Executive Director for Operations

Enclosures:
As stated

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ENCLOSURE 1

POLICY STATEMENT ON NUCLEAR POWER PLANT STANDARDIZATION

The Commission continues to strongly support standardization and, while maintaining the option for licensing new custom plants, encourages the use of standard plant designs in all future license applications. The Commission believes that the use of standard plant designs can benefit public health and safety by concentrating the resources of designers, engineers and vendors on particular approaches; by stimulating standardized programs of construction practice and quality assurance; by improving the training of personnel; and by fostering more effective maintenance and improved operation. The use of such designs can also permit more effective and efficient licensing and inspection processes.

The Commission believes that the true goal of standardization should be the reference system design certification as outlined in this policy statement. The Commission anticipates that over the long term the majority of new plant applications will incorporate approved or certified reference system designs. However, the Commission recognizes that the duplicate plant, replicate plant and manufacturing license options have also contributed to the progress that has been made in standardization to date and, therefore, continues to endorse the use of these options. Each of the standardization concepts and their terms and conditions are discussed below.

In addition to the four standardization concepts identified above, the Commission has provided flexibility in the application of the replication concept to allow for a transition period. This provision of the policy statement is also discussed below.

1. Reference System Concept

The reference system concept involves an application for approval or certification of an entire nuclear power plant design or major portion thereof outside the context of an application for a construction permit, operating license, combined construction permit and operating license, or manufacturing license. Approvals are granted by the staff in the forms of preliminary design approvals (PDA) and final design approvals (FDA) for preliminary and final levels of design detail, respectively. Certification is granted by the Commission in the form of design certifications for final levels of design detail only.

To further encourage the use of the reference system design option, the Commission will not require application filing or issuance fees for reference design approvals, certifications or amendments or renewals thereof. The fees that would otherwise have been required of reference design applicants will be allocated among the applicants for construction permits, operating licenses, and combined construction permits and operating licenses which propose to use the reference design. If no application for a permit

or license for a facility is filed within the initial term or the renewal period of the design approval and/or certification, any outstanding fees will become immediately due and payable by the holder of the reference design approval or certification.

In accordance with 10 CFR 50.109, once the initial design approval is issued (i.e., PDA or FDA) the Commission will not require modification to an approved or certified design unless it determines that such modifications provide a substantial increase in the overall protection of the public health and safety or the common defense and security. However, holders of design approvals or certifications may modify the approved or certified design by applying for an amendment to the design approval or certification. Any such amendments will only be required to apply to applications for construction permits, and combined construction permits and operating licenses that are submitted after the amendment is issued unless the modifications are required to provide a substantial increase in the overall protection of the public health and safety or the common defense and security.

a. Preliminary Design Approvals

A preliminary design approval is issued by the staff following the completion of its and the ACRS's reviews of the preliminary design. It deems an entire nuclear power plant design or major portion thereof acceptable for incorporation by reference in applications for construction permits and manufacturing licenses. It also provides that the approved preliminary design shall be utilized and relied upon by the staff and the ACRS in their reviews of those applications. However, an approved preliminary design is subject to litigation in individual licensing proceedings on those applications. A preliminary design approval is not a prerequisite for a final design approval or a design certification.

An application for a preliminary design approval must include to the extent practicable a level of design detail equivalent to that required for a preliminary safety analysis report. In addition, it must address the four licensing requirements for new plant designs as set forth in the Commission's severe accident policy statement.

Preliminary design approvals will be issued with terms of five years. Not less than one year or more than three years prior to the expiration of the preliminary design approval, holders of the approval may apply for the renewal thereof. The approval will be renewed for an additional period of time of not more than five years provided the design is found to comply with the Commission's current regulations and a showing of good cause (e.g., good cause may be established by a pending application that would reference the PDA during the renewal period).

The preliminary designs may be referenced in applications for construction permits and manufacturing licenses docketed during the period commencing

with the docketing date of the preliminary design approval application and terminating five years from the date of issuance of the preliminary design approval. However, no construction permit or manufacturing license will be issued for applications referencing the preliminary design prior to the issuance of the preliminary design approval. Further, any changes to the preliminary design that result from the design approval process will be required to be reflected in those applications as well. The expiration of the preliminary design approval will not affect the use of the approved preliminary design in applications for construction permits and manufacturing licenses docketed prior to its expiration.

b. Final Design Approvals

A final design approval is issued by the staff following the completion of its and the ACRS's reviews of the final design. It deems an entire nuclear power plant design or major portion thereof acceptable for incorporation by reference in applications for construction permits, operating licenses, combined construction permits and operating licenses in a one-step licensing, and manufacturing licenses. It also provides that the approved final design shall be utilized and relied upon by the staff and the ACRS in their reviews of those applications. However, an approved final design is subject to litigation in individual licensing proceedings on those applications. A final design approval is a prerequisite for a design certification.

An application for a final design approval must include to the extent practicable a level of design detail equivalent to that required for a final safety analysis report. In addition, it must address the four licensing requirements for new plant designs as set forth in the Commission's severe accident policy statement.

Final design approvals will be issued with terms of five years. Not less than one year or more than three years prior to the expiration of the final design approval, holders of the approval may apply for the renewal thereof. The approval will be renewed for an additional period of time of not more than five years provided the design is found to comply with the Commission's current regulations.

The final designs may be referenced in applications for construction permits, operating licenses, combined construction permits and operating licenses, and manufacturing licenses docketed during the period commencing with the docketing date of the final design approval application and terminating five years from the date of issuance of the final design approval. However, no construction permit, operating license, combined construction permit and operating license, or manufacturing license will be issued for applications referencing the final design prior to the issuance of the final design approval. Further, any changes to the final design that result from the design approval process will be required to be reflected in

those applications as well. The expiration of the final design approval will not affect the use of the approved final design in applications for construction permits, operating licenses, combined construction permits and operating licenses, and manufacturing licenses docketed prior to its expiration, and operating license applications that referenced the final design approval at the construction permit stage.

c. Design Certifications

A design certification is issued by the Commission following the issuance of a final design approval by the staff and the completion of a rulemaking proceeding. It deems an entire nuclear power plant design or major portion thereof acceptable for incorporation by reference in applications for construction permits, operating licenses, combined construction permits and operating licenses in a one-step licensing process, and manufacturing licenses. It also provides that the certified final design shall be utilized and relied upon by the staff, the ACRS, the hearing boards and the Commission in their review of those applications. A certified final design is not subject to litigation in individual licensing proceedings on those applications.

An application for certification of the final design may accompany the application for a final design approval; however, it must be submitted prior to the issuance of the final design approval.

Design certifications will be issued with terms of ten years. Not less than one year or more than three years prior to the expiration of the design certification, holders of the certification may apply for the renewal thereof. The certification will be renewed for an additional period of time of not less than five years or more than ten years from the date of renewal provided the design is found to comply with the the Commission's current regulations.

The certified designs may be referenced in applications for construction permits, operating licenses, combined construction permits and operating licenses, and manufacturing licenses docketed during the period commencing with the docketing date of the final design approval application and terminating ten years from the date of issuance of the design certification. However, no construction permit, operating license, combined construction permit and operating license, or manufacturing license will be issued for applications referencing the final design prior to the issuance of the final design approval. Further, any changes to the final design that result from the design approval or certification processes will be required to be reflected in those applications as well. The expiration of the design certification will not affect the use of the certified final design in applications for construction permits, operating licenses, combined construction permits and operating licenses, and manufacturing licenses docketed prior to its expiration, and operating license applications that referenced the final design certification at the construction permit stage.

2. Duplicate Plant Concept

The duplicate plant concept involves applications by one or more utilities for licenses to construct and/or operate a number of nuclear power plants of essentially the same design at different sites.

A duplicate plant design may be referenced at both the construction permit and operating license stages, and in applications for combined construction permits and operating licenses in a one-step licensing process. Use of the duplicate plant design at the construction permit stage is a prerequisite for its use at the operating license stage. Although use of the duplicate plant design at the operating license stage is not mandatory, that is, the operating license application may be submitted as a custom plant application, it is strongly recommended. The approved duplicate plant design shall be utilized and relied upon by the staff and the ACRS in their reviews of those applications. However, the duplicate plant design is subject to litigation in individual licensing proceedings on those applications.

A duplicate plant design may utilize a reference system design for an entire nuclear power plant or a major portion thereof. Any portions of the duplicate plant design for which a design certification has been issued shall be utilized and relied upon by the staff, the ACRS, the hearing boards and the Commission in their reviews of applications for construction permits and operating licenses referencing the duplicate plant design. In addition, any portions of the duplicate plant design for which a design certification has been issued are not subject to litigation in individual licensing proceedings on those applications.

An application for a duplicate plant must demonstrate compliance with the four licensing requirements for new plant designs as set forth in the Commission's severe accident policy statement.

A duplicate design approval will be prepared to document the staff's approval of the acceptability of the duplicate plant design for referencing in construction permit, operating license, and combined construction permit and operating license applications. In accordance with 10 CFR 50.109, once the initial duplicate design approval is issued (i.e., preliminary duplicate design approval (PDDA) or final duplicate design approval (FDDA)) the Commission will not require modification to the design unless it determines that such modifications provide substantial increase in the overall protection of the public health and safety or the common defense and security. The duplicate design approval will be included in the safety evaluation report for each license application referencing the duplicate plant design.

Duplicate plant designs may be referenced in applications for construction permits, operating licenses, and combined construction permits and operating licenses during the period commencing with the docketing date of the initial applications referencing the duplicate plant design and terminating on the date of issuance of the duplicate design approval.

The staff will determine the acceptability of the use of a duplicate plant design in the initial applications proposing to reference such a design during pretendering discussions with the involved utilities. Subsequent to the docketing of the initial applications, each additional application proposing to reference the duplicate plant design will be subjected to a qualification review. The qualification review will consider the following information:

- The arrangements made with the developers of the duplicate plant design for its use;

- A discussion of the compatibility of the duplicate plant design with the characteristics of the proposed site;

- A description of any changes to the original duplicate plant design and justification for the changes;

- The status of any matters identified for the duplicate plant design in the safety evaluation report, or subsequently identified by the ACRS or during public hearings on applications referencing the duplicate plant design as requiring subsequent resolution; and

- Identification of the major contractors, with justification for the acceptability of any that are different than those used by earlier applicants using the duplicate plant design.

3. Replicate Plant Concept

The replicate plant concept involves an application by a utility for a license to construct and/or operate one or more nuclear power plants of essentially the same design as one already licensed, (i.e. CP or OL).

The design of the plant already licensed (termed the base plant design) may be replicated at both the construction permit and operating license stages, and in applications for combined construction permits and operating licenses in a one-step licensing process. Replication of an approved base plant design at the construction permit stage is a prerequisite for its replication at the operating license stage. Although replication of the base plant design at the operating license stage is not mandatory, that is, the operating license application may be submitted as a custom plant application, it is strongly recommended.

An application for a replicate plant must demonstrate compliance with the four licensing requirements for new plant designs as set forth in the Commission's severe accident policy statement.

Each application proposing to replicate a previously-licensed plant will be subjected to a qualification review to determine the acceptability of the base plant for replication and to define specific matters that must be addressed in the application for the replicate plant. In applying 10 CFR 50.109, the Commission will not require modifications to those portions of the base plant design that are replicated once it has issued the initial license for the base plant unless it determines that such modifications provide a substantial increase in the overall protection of the public health and safety or the common defense and security. A further requirement for qualification is that the application for a replicate plant must be submitted within five years of the date of issuance of the staff safety evaluation report for the base plant. The qualification review will consider the following information:

- The arrangements made with the developers of the base plant design for its replication;

- The compatibility of the base plant design with the characteristics of the site proposed for the replicate plant;

- A description of any changes to the base plant design with justification for the changes;

- The status of any matters identified for the base plant design in the safety evaluation report, or subsequently identified by the ACRS or during the public hearings on the base plant application as requiring subsequent resolution;

- Identification of the major contractors, with justification for the acceptability of any that are different than those used by the base plant applicant; and

- A discussion of how the replicate plant design will conform to any changes to the Commission's regulations which have become effective since the issuance of the license for the base plant.

4. Manufacturing License Concept

The manufacturing license concept involves an application for a license to manufacture a number of identical nuclear power plants at a location other than those at which they are to be operated.

The application for a manufacturing license must address the four licensing requirements for new plants a set forth in the Commission's severe accident policy statement. In accordance with 10 CFR 50.109, once the manufacturing license has been issued, the Commission will not require modifications to the design unless it determines that such modifications provide a substantial increase in overall protection of the public health and safety or the common defense and security.

Appendix M to 10 CFR 50 requires that a manufacturing license specify the number of units permitted to be manufactured. The number of units to be specified in a manufacturing license will be that number whose start of manufacture, as defined in the license application, can practically begin, considering the limitations inherent in the proposed manufacturing facility, during the ten-year period commencing on the date of issuance of the manufacturing license, but in no event will that number be in excess of ten.

5. Other Considerations

Sections 1 through 4 of this policy statement set forth the terms and conditions for the reference system, duplicate plant, replicate plant and manufacturing license standardization concepts, respectively. The Commission recognizes that situations may arise that are not explicitly covered by these four concepts. Three such situations are addressed below. Other such situations, which are expected to be few in number, will be considered on a case-by-case basis.

Discussions with industry representatives indicate that the most likely types of license applications that will be submitted in the near future will involve reactivation of deferred plants and replication of plants that have been previously licensed. While the Commission strongly encourages the use of the four standardization concepts described in Sections 1 through 4 of this policy statement, it recognizes the need to accommodate these latter types of applications, each of which is discussed below.

The Commission acknowledges that the reactivation of deferred plants is a viable licensing option. However, because these plants are based on custom as well as standard designs, and because of the many complex factors involved, the criteria and procedures for the regulatory treatment of these plants as a whole will be a matter of separate consideration apart from this policy statement.

The Commission believes that the replication of previously-licensed plants should be subject to the provisions of Section 3 of this policy statement. However, during the transition period, the reference period for replication of such plants will be extended for five years from the effective date of this policy statement. In addition, consideration will be given to relaxation of the other provisions of this policy statement during this five-year period if suitably justified.

Plants that have been recently licensed, that is, those plants that have been reviewed against NUREG-0800, may be replicated for a period of five years from the effective date of this policy statement provided the application otherwise meets the provisions of Section 3 of this policy statement. Plants so replicated may be located at any suitable site.

Plants licensed earlier, that is, those plants that have not been reviewed against NUREG-0800, may be replicated for a period of five years from the effective date of this policy statement provided that the application otherwise meets the provisions of Section 3 of this policy statement and the design performance and operating history of the base plant justifies its replication. Plants so replicated may be located only on the same site and operated by the same utility as the base plant.

Although some design differences may be encountered as a result of complying with the four licensing requirements set forth in the Commission's severe accident policy statement, the Commission believes that replication of existing designs may offer improvements in public health and safety, and operating costs as a result of operator familiarity and improved maintenance due to the similarity of design.

ENCLOSURE 2

IMPLEMENTATION OF THE STANDARDIZATION PROGRAM TO DATE

- Applications for 23 preliminary design approvals have been submitted for review under the reference system concept. Preliminary design approvals have been issued for 13 of these designs; one application is still under review; and the nine remaining applications have been subsequently withdrawn by the applicants. All of the preliminary design approvals that have been issued have since expired.

- Applications for construction permits for 25 units referencing five of the preliminary designs have been submitted for review. Construction permits have been issued for 18 of the units referencing three of the preliminary designs. The applications for the seven remaining units have been subsequently withdrawn by the applicants.

- Applications for two final design approvals have been submitted for review under the reference system concept. Final design approvals have been issued for both of these designs, however, compliance with the requirements for new plant designs as set forth in the Commission's "Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants" (50 FR 32138) must be demonstrated prior to the issuance of a construction permit for an application referencing these designs.

- Applications for operating licenses for four units referencing one of the final designs have been submitted for review. An operating license has been issued for one of the units; decisions on the issuance of operating licenses for two of the units are awaiting the completion of their construction; and the review of the application for the remaining unit has been deferred at the request of the licensee.

- Applications for construction permits for 15 units have been submitted for review under the duplicate plant concept. Construction permits have been issued for 12 of the units, and the applications for the remaining three units have been subsequently withdrawn by the applicant. Seven of the units with construction permits have been subsequently cancelled. Applications for operating licenses for six units have been submitted for review under the duplicate plant concept. Operating licenses have been issued for three of the units, and decisions on the issuance of operating licenses for the three remaining units are awaiting the completion of their construction.

- Applications for construction permits for six units have been submitted for review under the replication concept. Construction permits have been issued for four of of the units. The applications for the two remaining units have been subsequently withdrawn by the applicant. Two of the units with construction permits have been subsequently cancelled. Applications for operating licenses for two units have been submitted for review under the replication concept. These units have been subsequently cancelled.

- An application for a manufacturing license for eight units has been submitted for review under the manufacturing license concept, and the manufacturing license has been issued. Applications for construction permits for two units referencing the design have been submitted for review. These applications have been subsequently withdrawn by the applicant.

ENCLOSURE 3

SUMMARY OF SIGNIFICANT PROPOSED REVISIONS TO THE COMMISSION'S 1978 STANDARDIZATION POLICY STATEMENT

1. Licensing Requirements for New Plant Designs

The Commission's licensing requirements for new plant designs, both standard and custom, are set forth in its severe accident policy statement. These requirements are summarized below:

- Demonstration of compliance with the procedural requirements and criteria of the current Commission regulations, including the Three Mile Island requirements for new plants as reflected in the construction permit rule, 10 CFR 50.34(f);

- Demonstration of technical resolution of all applicable unresolved safety issues and the medium- and high-priority generic safety issues, including a special focus on assuring the reliability of decay heat removal systems and the reliability of both AC and DC electrical supply systems;

- Completion of a probabilistic risk assessment (PRA) and consideration of the severe accident vulnerabilities that the PRA exposes along with the insights that it may add to the assurance of no undue risk to public health and safety; and

- Completion of a staff review of the design with a conclusion of safety acceptability using an approach that stresses deterministic engineering analysis and judgment complemented by PRA.

All applications for design approvals under the reference system concept, applications for construction permits, operating licenses, and combined construction permits and operating licenses under the duplicate plant and replicate plant concepts, and applications for manufacturing licenses under the manufacturing license concept must address these four licensing requirements as set forth in the Commission's severe accident policy statement.

2. Design Certification through Rulemaking

Although Appendix O to 10 CFR 50 provides the opportunity for the Commission to approve a reference system design in a rulemaking proceeding, no one has taken advantage of that opportunity to date. This approach can contribute significantly to the stability of the licensing process. To further encourage the use of this approach, the Commission has outlined in its severe accident policy statement a design certification option for approving a reference system design. Under that option, a design certification would be issued by the Commission for a reference system design following the completion of a rulemaking proceeding. Because of the more rigorous reviews to which these designs would be subjected, design certifications will be issued with terms of ten years. Further, since the design would be approved by the Commission following the completion of a rulemaking proceeding, it would not be subject to litigation in individual license applications that referenced the design.

3. Changes to Approved Designs

We believe that standardization will be best served if changes to approved or certified designs are minimized. Nevertheless, we recognize that there are situations in which such changes are needed or desirable.

Backfitting is defined in 10 CFR 50.109 as the modification of or addition to systems, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position after the date of issuance of the design approval under Appendix M, N or O of Part 50.

The draft policy paper clarifies how the backfitting rule should be applied to each of the four concepts. As stated in the rule, the Commission will require backfitting of a facility only when it determines, based upon the analysis required in 10 CFR 50.109(c), that there is substantial increase in the overall protection of the public health and safety or the common defense and securtiy to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of the increase protection.

For the reference system concept, the backfitting rule applies after the issuance of the initial design approval, i.e. PDA or FDA.

For the duplicate plant concept the backfitting rule applies after the issuance of the initial duplicate design approval, i.e., PDDA or FDDA.

For the replicate design concept, the backfitting rule applies after the date of the initial CP or OL for the base plant.

For the manufacturing license, the backfitting rule applies after the issuance of the first manufacturing license, i.e., based upon preliminary design information or final design information.

Holders of design approvals or certifications may modify the approved or certified design by applying for an amendment to the design approval or certification. Any such amendments will only be required to apply to applications for construction permits, and combined construction permits and operating licenses that are submitted after the amendment is issued unless the modifications provide a substantial increase in the overall protection of the public health and safety or the common defense and security.

4. Overlap Between Duplicate and Replicate Design Concepts

The Commission's 1978 standardization policy statement permitted duplicate plant designs to be referenced in license applications docketed between the docketing date of the initial application referencing the duplicate plant design and a date five years after the staff approval of the duplicate plant design. It also permitted license applications for replicate plant designs to be docketed within three years of the dates of issuance of the staff safety evaluation reports for the base plants. We believe this overlap is unnecessary; applicants wishing to reference duplicate plant designs subsequent to their approval could do so without penalty under the replicate plant concept provided the three-year referencability period for the replicate plant concept were extended to five years. Therefore, future duplicate plant designs will be permitted to be referenced in license applications docketed between the docketing date of the initial application referencing the duplicate plant design and the date of approval of the duplicate plant design, and future replicate plant designs will be permitted to be referenced in license applications docketed within five years of the dates of issuance of the staff safety evaluation reports for the base plants.

5. Fees

To further encourage the use of the reference system concept, we believe that fees that would otherwise be required of reference design applicants should be allocated among the applicants for permits and licenses which propose to use the reference design. Accordingly, we would not require application filing or issuance fees for reference design approvals or certifications, or amendments or renewals thereof. If no application for a permit or license for a facility is filed within the initial term or renewal period of the design approval or certification, any outstanding fees will become immediately due and payable by the holder of the design approval or certification.

Allocating fees among the applicants for permits and licenses who use a reference design is consistent with the draft "Nuclear Power Plant Licensing and Standardization Act of 1985." It should be noted, however, we have been informed by the Office of the Executive Legal Director that approval of the draft Act would be required prior to the Commission adopting this approach. Enclosure 6 to the Commission paper provides a discussion of license fees related to the reference system concept.

Fees for the other standardization concepts are those required by 10 CFR 170 for the type of license being requested.

6. Renewals of Reference Design Approvals and Certifications

We believe that the standardization policy statement should include provisions for the renewal of final design approvals and design certifications but, in order to provide incentive to holders of preliminary design approvals to proceed with the development of final designs in a timely manner, preliminary design approvals may only be renewed upon a showing of good cause. Accordingly, not less than one year or more than three years prior to the expiration of the final design approval or the design certification, holders of the approval or certification may apply for the renewal thereof. The approval and certification will be renewed for an additional period of time of not more than five years in the case of final design approvals, and not less than five or more than ten years in the case of design certifications provided the designs comply with the Commission's current regulations. If no application for a permit or license for a facility is filed within the renewal period, any outstanding fees will become due and payable by the holder of the reference design approval or certification.

ENCLOSURE 4

Atomic Industrial Forum, Inc.
7101 Wisconsin Avenue
Bethesda, MD 20814-4805
Telephone: (301) 654-9260
TWX 7108249602 ATOMIC FOR DC

November 1, 1985

Mr. William J. Dircks
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Maryland National Bank Bldg., #6715
7735 Old Georgetown Road
Bethesda, Maryland 20814

Dear Bill:

In my May 30, 1985, letter to you, I alerted you to the formation of an executive level AIF Study Group on the Practical Application of Standardized Nuclear Power Plants in the United States and of our intent to provide input to you in your efforts to update the NRC Policy Statement on Standardization.

Since then our Study Group has met four times and has made iterative reviews of the work products of two very active working groups, our Working Group on Regulatory Interactions, chaired by Mr. James Rhodes, Vice President, Virginia Power Company, and our Working Group on Design Information Requirements, chaired by Mr. Richard Priory, Vice President of Duke Power Company. The combined efforts of these groups are reflected in our enclosed "expanded outline" on the Policy Statement on Standardization, which we request you incorporate in the development of your Policy Statement revision. The concepts included in the enclosed "expanded outline" were also recently endorsed by our Policy Committee on Nuclear Regulation, chaired by Mr. Wallace Behnke, Vice-Chairman of Commonwealth Edison Company. The enclosed document reflects the collective judgement of the industry and demonstrates the high level of interest in achieving a workable standardization process.

Sincerely,

John E. Ward, Chairman
AIF Study Group on the Practical Application of Standardized Nuclear Power Plants in the United States

JEW:wbb

cc: Chairman Palladino
Commissioner Asselstine
Commissioner Bernthal
Commissioner Roberts
Commissioner Zech

10/31/85

POLICY STATEMENT ON STANDARDIZATION

(EXPANDED OUTLINE)

I. INTRODUCTION

Introductory section stating the purposes of the policy statement and the Commission's endorsement and encouragement of standardization.

Language from the proposed legislation would be included indicating that the use of standardized designs can benefit the public health and safety by concentrating the resources of designers, engineers and vendors on particular approaches, by stimulating standardized programs of construction practice and quality assurance, by improving the training of personnel, by fostering more effective maintenance and improved operations, and because the use of such designs will permit a more effective licensing and inspection process.

The Introduction would explain how standardization will benefit the regulatory process by allowing a more expeditious and efficient review of the applications and a better understanding of the designs by the staff. The Commission would be asked to commit to a more disciplined review of standardized plants, and not to allow the staff to re-review applications without due cause and authorization. The need for a well-defined review process would be emphasized, and mention would be made that the staff is cooperating with EPRI and others in the preparation of review guidelines to be used on standard design applications.

This section would indicate that this policy statement will apply to current LWR designs as well as variations of these designs; that it updates, expands, and replaces previous policy statements on the subject; that it is independent of any proposed legislation; and that it will lead to the necessary amendments of appropriate NRC regulations.

This section would indicate that the standardization and licensing reform legislation, presently under consideration in Congress, is not in conflict but in direct support of this policy statement. The Commission believes that both a Congressional mandate and this policy statement, and resulting regulatory changes, are necessary to accomplish all of its goals regarding standardization and licensing reform.

II. BACKGROUND

This section would provide a brief history of standardization, with reference to the 1972 and 1978 policy statements, 10 CFR Part 50 Appendices M, N and O, PDAs and FDAs issued, and other applications processed under the umbrella of standardization, e.g., replicate, reference and duplicate plants.

III. RECENT NRC ACTIONS

This section would summarize recent actions taken by the Commission paving the way for new applications, e.g., completion of TMI-related requirements, emphasis on the resolution of generic issues, backfit rule, policy statement on severe accidents (SAPS*), ongoing work on source terms, and safety goal.

The purpose of this section is to provide the bases for the positions stated below and the Commission's endorsement of new applications. On the basis of the available information and the experience gained from the operating plants, the Commission has concluded in the SAPS that existing plants pose no undue risk to public health and safety. Language would be included indicating that standard designs will not be subject to unnecessary changes by the Commission, and emphasizing the Commission's commitment to provide regulatory stability.

Reference would also be made to the legislation proposed by the Commission that would allow one-step licensing.

IV. COMMISSION POLICY

Reference System Concept

This section would update the corresponding section in the 1978 Policy Statement, and would eliminate the difference between the FDA-1 and FDA-2. It would also indicate that, based on the SAPS, all current FDAs, and those to be granted in the future, may be referenced in applications for a Construction Permit (CP) or Operating License (OL), or combined CP/OL.

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* SAPS - Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants, July 30, 1985.

Preliminary Design Approvals

This section would update the corresponding section in the 1978 Policy Statement taking into account the guidance contained in the SAPS (summarized in Section V of this policy statement).

Accordingly, after a PDA is docketed, the preliminary design may be referenced in new CP applications, with the corresponding OL application referencing the approved final design. The SAPS contains criteria and procedural requirements expected to be satisfied by new designs before they are granted final approval or certification. However, PDA applications will be expected to address these criteria and procedural requirements to the extent that it is reasonably possible. For example, although the Commission has indicated in the SAPS that it expects PRAs to be part of the PDA application process, it will not be a prerequisite for issuance of the PDA. If a comprehensive and detailed PRA is not performed, a meaningful, limited, quantitative risk analysis would be expected instead, either as part of the PDA process or of the CP applications referencing the design.

PDAs will be issued following completion of the staff's (including ACRS) review and would be subject to challenge in individual licensing hearings.

The discussion in the 1978 Policy Statement regarding the requirements for extending the life of PDAs active at that time would be eliminated as there are no PDAs active at this time. Instead, this section would indicate that in the future PDAs will be issued for a term of 10 years.

Final Design Approvals

This section would update the corresponding section in the 1978 Policy Statement taking into account the guidance contained in the SAPS (summarized in Section V of this policy statement), and eliminating the difference between the FDA-1 and FDA-2.

As in the past, a PDA will continue not to be a prerequisite for an FDA, with applicants having the option to submit FDA-level information initially and proceed directly with an FDA review. The FDA may be referenced in OL applications which had made reference to the corresponding PDA at the CP stage, and may be referenced also in new CP applications (and combined CP/OL applications).

The SAPS contains criteria and procedural requirements expected to be satisfied by new designs before they are granted an FDA. If the scope of the FDA reference design application is limited to an extent that would preclude the completion of a meaningful, comprehensive PRA, the requirement for a complete PRA may be waived. However, the applicant should still perform and submit supplementary risk analyses, to the extent practical, to demonstrate the adequacy of the proposed design. If a comprehensive PRA is not submitted for an FDA, an OL or combined CP/OL, applicant referencing the approved design would be required to submit a plant-specific PRA.

FDAs will be issued following completion of the staff's (including ACRS) review and would be subject to challenge in individual licensing hearings.

This section would also indicate that in the future FDAs will be issued for a term of 10 years.

Duplicate Plant Concept

This section would update the corresponding section in the 1978 Policy Statement taking into account the guidance contained in the SAPS (summarized in Section V of this policy statement), and eliminating the difference between the FDDA-1 and FDDA-2.

As indicated in the 1978 Policy Statement, the staff will issue a PDDA if the reference design is only preliminary, or an FDDA, if it is final. PDDAs and FDDAs will be issued following completion of the staff's (including ACRS) review and would be subject to challenge in individual licensing hearings. PDDAs may be referenced only in CP applications; FDDAs may be referenced in OL applications which had made reference to the corresponding PDDA at the CP stage, and in new CP applications (or combined CP/OL applications).

To be consistent with the previous sections of this policy statement and the SAPS, this section would indicate that PDDA applications will be expected to address the criteria and procedural requirements described in the SAPS to the extent that it is reasonably possible. Accordingly, PRAs will not be a prerequisite for issuance of the PDDA. However, if a comprehensive and detailed PRA is not performed, a meaningful, limited, quantitative risk analysis would be expected instead, either as part of the PDDA process or of the CP applications referencing it. The criteria and procedural requirements contained in the SAPS will need to be satisfied before issuance of an FDDA.

This section would also indicate that in the future PDDAs and FDDAs will be allowed to be referenced in applications for periods of 10 years from the date of issuance.

Manufacturing License Concept

This section would update the corresponding section in the 1978 Policy Statement taking into account the guidance contained in the SAPS (summarized in Section V of this policy statement).

To be consistent with previous sections, the 1978 Policy Statement would also be changed to require the design to be updated 10 years, instead of 5 years, after its approval.

Replicate Plant Concept

This section would update the corresponding section in the 1978 Policy Statement taking into account the guidance contained in the SAPS (summarized in Section V of this policy statement).

As indicated in the 1978 Policy Statement, when an applicant proposes to replicate a previously approved plant the staff would need to determine whether the base plant may be replicated, and the design would be subject to challenge in individual licensing hearings. Applications for replication would be accepted for periods of 10 years following issuance of the SER for the base plant.

To be consistent with the previous sections of this policy statement and the SAPS, this section would indicate that the criteria and procedural requirements contained in the SAPS would need to be satisfied before a design is accepted for replication.

If the scope of the design to be replicated is limited to an extent that would preclude the completion of a meaningful, comprehensive PRA, the requirement for a complete PRA may be waived. However, plant-specific PRAs would be required from applicants referencing the design.

Standard Design Certifications

This section would formally establish the concept of Standard Design Certifications.

As indicated in the SAPS, the Commission is in favor of offering Standard Design Certifications in addition to the PDA and FDA options. The PDAs and FDAs are issued following completion of the staff's (including ACRS) review and would be subject to challenge in individual licensing hearings. CPs and OLs based on standard design approvals would be subject to any design changes arising from their particular licensing proceedings in accordance with the Commission's backfit rule. The Standard Design Certifications would be issued by the Commission following rulemaking proceedings and could not be challenged in individual hearings.

To be consistent with the proposed legislation, a standardized plant design or "any major subsystem which represents a discrete element" of the facility would qualify for a Standard Design Certification following the staff's final design review and approval. The Commission would also indicate its intent to provide the opportunity for a hearing as part of the rulemaking proceeding for a Standard Design Certification. As a result of this hearing, the design may be changed subject to the Commission's backfit rule.

Standard Design Certifications would be issued for a period of 10 years, and may be referenced in CP or OL applications (or combined CP/OL applications).

(The concept of design certification via a rulemaking proceeding described above is consistent with the SAPS. The proposed legislation uses the term "approval" instead of certification, and would empower the Commission to issue such approvals by means other than rulemaking.)

Level of Detail in Standard Design Certification Applications

Critical to the success of the Commission's standardization policy is the level of information that must be provided in standard design applications. This section would encourage the industry to collaborate with the staff to develop guidelines similar to those currently available for CP and OL applications.

The Commission would emphasize the need for "essentially complete" design information in applications but would stress that the applications should describe what is needed, i.e., methods, procedures, and performance criteria, rather than specific pieces of equipment. The guidelines should be consistent with recent Commission emphasis on regulations that are less prescriptive and more performance oriented, and would incorporate some of the characteristics of the SDA concept discussed in the 1978 Policy Statement. (The proposed legislation indicates that

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standardized designs should be "sufficiently detailed and complete to support licensing.") These guidelines will also need to describe the inspections and tests that would be necessary to ascertain that construction was completed in accordance with the design specifications.

Applicants will provide sufficiently detailed criteria to enable the NRC to complete the safety review of the facility. The document provided by the applicant, a Plant Safety Report (PSR) or Standard Design Report (SDR) depending on the type of license requested, would describe major portions of the facility.

Design Criteria and Documentation

To fulfill the NRC need for design detail, the report should define the major design components and include the results of preliminary engineering to identify:

- Design basis criteria
- Analysis and design methods
- Functional design and physical arrangement of auxiliary, BOP, and NSSS systems
- Plant physical arrangements sufficient to accommodate systems and components
- Functional/performance specifications for components and materials sufficiently detailed to become a part of associated procurement specifications
- Acceptance/Test Requirements
- PRA Methodology

Required design documentation for systems, structures and components must include sufficient information to enable the NRC to make the safety determination and should include as appropriate:

- Design basis criteria
- Plant general arrangements of structures and components
- Process and instrumentation diagrams
- Control logic diagrams
- System functional descriptions
- Component and procurement specifications including acceptance test requirements
- Construction and installation specifications
- QA program
- Emergency plans

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- Supporting design documentation such as site data and calculations sufficient to support the above level of design detail
- Security
- ALARA/Radiation Protection
- Accident Analysis
- Draft Technical Specifications
- PRA

It should be noted that all designs prepared prior to equipment purchase are subject to refinement and completion once detailed vendor information is available. From a conceptual and performance standpoint these details should not prevent the NRC from completing their health and safety determination. However, to deal with this situation without subsequent licensing proceedings, a program of confirmatory audits, performed by the NRC, could be utilitized to review the refinements to detailed design information which are necessary in the process of procurement and installation of plant components.

Probabilistic Risk Assessment

To complement the design criteria, a probabilistic risk assessment (PRA) should be prepared as part of COL applications to identify significant contributions to risk in the design. Except in a few cases, the evaluation of component failures or equipment outages have been based on generic data, therefore, it is not necessary to commit to equipment purchase before performing the PRA. The completion of a PRA with adequate consideration for major risk contributors will increase the assurance that the design presents no undue risk to the public health and safety.

Acceptance/Test Requirements

Licensees and their suppliers should define acceptance/test criteria to assure that designs are properly translated and correctly installed in the plant. These requirements should be defined early in the licensing process and implemented in a series of readiness reviews based on completion of construction and acceptance/test criteria developed during the design stage.

Changes to Standard Designs

This section would indicate that standard design approvals and certifications will not be changed unless the Commission determines, based on significant new information, that a

modification is required to protect the public health and safety, and in accordance with the backfit rule. In implementing the backfit rule, Appendices M, N and O to 10 CFR Part 50 will be revised to indicate that the cost-benefit analyses will be performed on the first or lead unit for the given standard design. If the backfit can be justified on the lead unit, it will be implemented on all subsequent units referencing that design. If the backfit cannot be justified on the lead unit, it will not be applied to any unit referencing that design.

The backfit rule becomes effective after "the date of issuance of the design approval under Appendix M, N or O" to 10 CFR Part 50. For designs going through different levels of approval, e.g., a PDA followed by an FDA, the backfit rule will be considered in effect after the issuance of the first approval, in the same manner that a custom plant triggers the backfit rule after the issuance of the Construction Permit. For designs applying directly for a final approval, e.g., an FDA without a PDA, the Commission will institute a process by which the applicant for a standard design approval or certification would submit to the NRC prior to the submittal of the application a complete list of regulations and staff guidance documents (i.e., SRPs, Reg Guides, BTPs, etc.) applicable to the design.(1) This list will be acknowledged in writing by the staff and will serve as the basis for the review of the design. Changes to these requirements and guidance will need to be reviewed and approved by a high level of management (possibly in a process similar to that followed by the CRGR) and documented in writing. The purpose of this process is to provide discipline and stability to the review of standard applications even before the backfit rule becomes effective, and to serve as an incentive to the industry to develop the more detailed applications needed for a final approval.

Once a Standard Design Certification has been issued, it will not be subject to challenge in individual licensing hearings. Any challenge to the Standard Design Certification, whether sought by reason of special circumstances or otherwise, will only be considered in a rulemaking amendment procedure.

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(1) Current regulations - 10 CFR 50.34(g) - require that applications for a construction permit, manufacturing license, and PDA or FDA be evaluated against the SRPs in effect six months prior the docketing date.

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This section would also indicate that the Commission recognizes the need to allow standard design holders and utilities to make changes in order to incorporate such considerations as new technical developments, improvements in the reliability or safety of the designs, or to make accommodations for maintenance, radiation protection or procedural practices at a given utility. For example, a utility with other operating nuclear power plants may want to change the design of the control room in a standard design plant in order to maintain common features with the control rooms in its other plants. Similarly a standard design holder may want to incorporate new technical advances that may improve the performance of the design and thus increase its market appeal.

Changes requested by the holders of standard design approvals or certifications, if approved, will apply only to applications referencing the affected standard design and submitted after the change has been approved. Amendments to Standard Design Certifications would result in rulemaking proceedings and the opportunity for hearings.

Changes requested by CP and OL holders, and holders of a combined CP/OL, that referenced a standard design approval or certification will be approved by the Commission if it determines that they are in compliance with the appropriate regulations. Such changes would be limited to the license(s) for which they were requested. Changes to operating licenses and deviations or variances from Standard Design Certifications (exceptions from a rule) may result in the opportunity for a hearing.

Other changes may not require Commission approval in accordance with 10 CFR Part 50.59.

Renewals of Standard Design

As indicated in previous sections, approvals for duplication and replication, and all standard design approvals and certifications would be valid for 10-year periods. The 1978 Policy Statement established life terms of 5 years for the PDAs and FDAs, and for the duplication and replication options. These periods were selected considering the number of plant license applications anticipated at the time, the experience of changes in safety requirements that were then occurring with time, and the relative newness of the concept. However, it is now apparent that, because of the prevailing depressed market for nuclear plants, the period of effectiveness used to date for the different standardization options limit the ability of

participants in the overall design of a plant to develop their portions of the plant designs well before the approval for other sections of the design terminate (e.g., an architect-engineer developing the balance of plant design to mate with an approved nuclear steam supply system design), and thus obtain a reasonable return on investment by use of the design in one or more plants. Considering these factors, the current low order rate for nuclear plants, which effectively reduces the number of units likely to use a specific standard design, and the significantly increased stability in licensing requirements expected in the future, the Commission considers it appropriate to extend to 10 years the life terms of all standardization options.

In addition, this section would indicate that holders of the approvals and certifications described above may request renewals of such approvals and certifications prior to their expiration. The Commission, consistent with the intent of the proposed legislation, will renew the approvals or certifications "for an additional period of time not less than five nor more than ten years from the date of renewal."

V. COMPLIANCE WITH GUIDANCE IN POLICY STATEMENT ON SEVERE REACTOR ACCIDENTS REGARDING FUTURE DESIGNS AND EXISTING PLANTS

On July 30, 1985 the Commission issued a Policy Statement on Severe Reactor Accidents Regarding Future Designs and Existing Plants (SAPS) containing the following criteria and procedural requirements that the Commission considers necessary for the licensing of new plants:

a) Demonstration of compliance with the procedural requirements and criteria of the current Commission regulations, including the Three Mile Island requirements for new plants as reflected in the CP Rule (10 CFR 50.34(f));

b) Demonstration of technical resolution of all applicable Unresolved Safety Issues and the medium- and high-priority Generic Safety Issues, including a special focus on assuring the reliability of decay heat removal systems and the reliability of both AC and DC electrical supply systems;

c) Completion of a Probabilistic Risk Assessment (PRA) and consideration of the severe accident vulnerabilities the PRA exposes along with the insights that it may add to the assurance of no undue risk to public health and safety; and

d) Completion of a staff review of the design with a conclusion of safety acceptability using an approach that stresses deterministic engineering analysis and judgment complemented by PRA.

The SAPS indicates that it is the Commission's belief that a new design for a nuclear power plant can be shown to be acceptable for severe accident concerns if it meets these criteria and procedural requirements.

In addressing criteria (b) and (c), the applicant for approval or certification of a reference design shall consider a range of alternatives and combination of alternatives to address the unresolved and generic safety issues and to search for cost-effective reductions in the risk from severe accidents.

It is intended that a new design would satisfy each of the fundamental criteria listed above before final approval or certification. It is recognized, however, that a new design can go through different stages or levels of approval before this final approval or certification, i.e., a PDA followed by an FDA. The unique circumstances of each design review will, therefore, require flexibility in the application of the criteria listed in the SAPS. In particular, the timing of the PRA requirement may differ considerably from one review to another. In addition, the licensee is required to ensure that the intent of the safety requirements is accomplished during procurement, construction and operation.

A comprehensive and detailed PRA may not be achievable in the absence of essentially complete and final detailed design information. Therefore, to require a complete PRA at the PDA stage would not be realistic. The Commission's recent experience, however, indicates that a substantial amount of design detail that would permit meaningful, limited, quantitative risk analysis does exist at the PDA stage. Because the Commission believes that risk analysis of this type would be a useful design tool, the Commission expects that it would be completed as part of the PDA application process. A complete risk analysis would not be a prerequisite for issuance of a PDA. However, if this risk analysis is not performed in the PDA process, it will have to be provided as part of any CP application referencing the design.

If the scope of the FDA reference design application is limited to an extent that would preclude the completion of a meaningful, comprehensive PRA, the requirement for a complete PRA may be waived. However, the applicant should still perform and submit supplementary risk analyses, to the extent practical, to demonstrate the adequacy of the proposed design. If a comprehensive

PRA is not submitted for an FDA, an OL or combined CP/OL applicant referencing the approved design would be required to submit a plant-specific PRA. For standard design approvals of restricted scope, additional limitations beyond the PRA aspects may exist.

Note: This section is, except for some introductory and linkage words, an exact paraphrase of sections of the SAPS.

ENCLOSURE 5

RULEMAKING OPTIONS FOR STANDARD DESIGN CERTIFICATIONS

With its approval of the Severe Accident Policy Statement, the Commission has cleared the way for proceeding with the certification of standard designs by rulemaking. As the Commission is aware, the Policy Statement does not require that a design vendor pursue certification beyond the staff's Final Design Approval. The staff at present is uncertain whether vendors will request certification by rulemaking, thereby removing from future licensing litigation issues regarding the adequacy of the design itself. 1/ The staff believes, however, that vendors are more likely to consider such a step if the rulemaking procedures to be used have been clearly set out in advance. To this end the staff describes below several alternative methods the Commission could choose to apply in a design certification rulemaking.

A. Notice and Written Comments

The simplest procedure meeting the requirements of the Administrative Procedure Act is that used for most NRC rules: a notice of proposed rulemaking requesting written comments, review of the comments, and promulgation of a final rule. If this method, clearly the most expeditious, were adopted, the notice of proposed rulemaking would contain the following: (1) availability of the application, staff SER, and Final Design Approval, and ACRS letters, together with other technical material supporting the application, (2) terms of the proposed rule, i.e., duration of certification, effect on licensing proceedings, (3) specific issues on which comment is requested (if any), (4) role of the ACRS in the review process, and (5) the decisional criteria to be applied by the Commission.

Comments would be evaluated by the staff and the ACRS, with assistance from the applicant as necessary. If substantial technical issues were raised which could not be resolved on the basis of the existing application and SER, the applicant would be required to develop such information to support the application. This new information would have to be reviewed by the NRC staff and might have to be made available for a second round of public comment if it modifies the application in significant respects. A second round of notice-and-comment could obviously delay the issuance of a final rule substantially.

The initial resource investment for this method would be modest, both for the NRC and the applicant. This consideration might make this approach attractive to an applicant not wishing to commit substantial resources when the market for the design is uncertain. As noted above, however, both the applicant and the NRC might have to commit additional resources

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1/ As the Commission is aware, GE has stated that it will not devote resources to rulemaking at this time, but might consider doing so if a domestic order is received for a GESSAR-II plant.

to respond to public comments and to support a second round of public comment in some circumstances.

B. Notice and Comment with Opportunity to Request Legislative Hearing

In this approach a notice of proposed rulemaking would be published requesting written comments as in (A), but would offer the opportunity of a legislative hearing upon request of an interested person or persons. As a condition to granting such a request, however, the requesting persons would be required to state what issues they wished to be considered at the hearing, and commit to providing expert testimony on those issues.

If a hearing request were granted, notice of the hearing would be published in the Federal Register, setting out the details of the procedures to be followed and issues to be considered. (Although not an adjudicatory hearing, this process would be very similar to an operating license notice of opportunity for hearing, notice of hearing, etc.) The Commission has the discretion to employ a number of formats, from the simple hearing and recording of testimony to interchanges among those present and a limited right of cross-examination. Since such rulemaking procedures go well beyond the minimum notice and comment requirements for rulemaking, the agency has broad discretion to establish hearing procedures best suited to the matters at issue.

Following such a hearing, the complete record of the rulemaking would be reviewed, including both the hearing record and any other written comments. The notice of final rulemaking would have to include responses to written comments and the agency's resolution of issues considered at the hearing.

The resources needed to implement this option would obviously depend on whether one or more hearings were held. In the absence of a hearing, the resource commitment would be the same as for notice-and-comment. If a hearing were held, it is likely more issues would be raised in greater technical depth, and both applicant and NRC resources would be needed to resolve these issues and perform a thorough review of the hearing record itself. 2/ Given this potential for a larger resource commitment, this option might not be favored by an industry applicant in the absence of a clear domestic market for the standard design.

C. Notice and Comment with Hearings Absent Request

2/ In this regard, it would be important to impose some limitations on the scope and length proceeding at the outset. Absent any present limits on the hearing, it could easily grow to ECCS-size, i.e., 125 days of hearing and 22,000+ pages of transcript.

This method goes somewhat further than (B) in that the notice of proposed rulemaking would announce the agency's intent to hold informal hearings on the proposed certification. The notice would set out the matters at issue as specifically as possible, the hearing procedures to be used, and request that all persons wishing to participate in the hearings notify the agency within a stated period of time. Written comments would also be invited from those not intending to participate in the hearings. Hearing procedures would be flexible, as stated in (B).

This approach would require a substantial resource investment by the applicant and the NRC. As with the previous alternative, it might not be favored by a potential applicant where a definite market for the design did not yet exist.

D. On-the-Record-Proceeding

The agency has the option of conducting rulemaking by formal hearings, according to the requirements of Sections 556 and 557 of the Administrative Procedure Act. The procedure follows that for licenses, i.e., appointment of a hearing board, use of 10 CFR Part 2 Rules of Practice, formal taking of evidence, including cross-examination, and board findings and recommendations to the Commission. The Commission retains final authority to accept or reject the board's recommendations in promulgating a final rule. In this procedure the record consists only of evidence admitted at the hearing; written comments are not solicited or accepted from the general public.

This option would require the largest resource commitment from the applicant and the NRC. While the informal hearings associated with the previous two options would tend to focus on technical issues, thus limiting the role and associated expense of legal counsel, the formal hearing requires full use of legal representation (in addition to the need for a adjudicatory board chaired by an attorney) to assure that the Rules of Practice are observed. We do not expect that this option would be favored by an applicant for a standard design certification under any circumstances.

Role of the ACRS

In each of the above options, ACRS views would be sought and considered. ACRS review of the design should be performed prior to the rulemaking itself, and the results of that review made available at the time the proposed rule is announced. The ACRS should be given an opportunity to review the complete record (including comments on its own review) and a final ACRS letter on the design should be forwarded to the Commission for its consideration during the final rule process.

The ACRS could, either by direction of the Commission or in its own discretion, hold one or more informal public hearings on the design at which varying technical points of view could be heard. Such hearings would be more limited in scope than those suggested in Options (B) and (C) above, and

participation would most likely be limited to technical experts. To the extent non-industry groups wished to present expert testimony focussed on technical issues, the ACRS could receive and evaluate such testimony, whether written or oral. The ACRS would not be equipped to carry out general public hearings of the legislative type.

Advantages and Disadvantages

Simple notice-and-comment rulemaking involves the least potential for delay (if time is an important factor) and the least initial investment of agency and applicant resources. However, there may be a public perception that notice and comment without opportunity for any type of public hearing is not commensurate with the significance of the outcome of the proceeding, viz., foreclosure of design-related issues for a period of up to ten years. The offering of an informal hearing could reduce the likelihood of legal challenge by providing a broader forum for airing of public concerns.

At the opposite extreme, formal rulemaking carries with it the greatest investment of resources and a large potential for an extended proceeding. The extensiveness of the record developed would give the agency a strong position as regards a substantive challenge to the rule in court (i.e., an assertion that the rule was not based on substantial evidence), but the requirement that Sections 556 and 557 of the APA be followed provides an arena for a variety of procedural challenges (e.g., impermissibly restricting the scope of cross-examination). If experience is any guide regarding the progress of formal proceedings, a certification conducted by this method would probably take at least a year, with a potential for several years.

Counting from the issuance of the notice of proposed rulemaking, the staff believes the notice-and-comment process could present a final rule to the Commission within six to eight months. This period could lengthen to a year or more if one or more hearings were held. The resource commitment for the agency and the applicant would depend on the scope of issues raised, the technical complexity of those issues, and the amount of work needed for resolution. To the extent possible, the applicant would be relied upon to perform technical work, subject to review and acceptance by the staff assisted by the ACRS.

ENCLOSURE 6

LICENSE FEES

Currently Part 170 requires full cost recovery (up to a ceiling of $1,477,100) for review of standard reference designs for a nuclear power plant or major portion thereof when the review is conducted outside the context of a CP, OL or manufacturing license application. The fee is billed to the applicant at six-month intervals as the review progresses until the review is complete either by issuance of an approval, withdrawal or denial.

Prior to June 20, 1984 (date current rule was adopted), Commission regulations required PDA review fees to a ceiling of $462,100 for each NSSS and BOP and FDA review fees to $533,400 for the NSSS and $551,200 for the BOP. The fees were to be paid in five installments based on payment of 20 percent of the approval fee as each of the first five units of the approved design were referenced in utility applications.

Thirteen PDAs have been granted and none were subject to fees under Part 170. Two FDAs have been issued to date. Both were issued during the period of the 1978 fee schedule. Combustion Engineering has paid $436,720 of $533,400 in review fees for CESSAR-80 (NSSS) since it was referenced only four times. General Electric has paid only the application fee ($50,000) since the approved design has not been referenced in a utility application.

The fee proposal contained in the draft revised standardization policy statement would not require an application fee or periodic payment of review costs for approval certification, amendment or renewal applications. Fees designed to recover costs would be allocated among the applicants for CPs, OLs and combined CPs and OLs proposing to use the reference design. If no application for a permit or license for a facility is filed within the initial term or renewal period of the design approval or certification, any outstanding fees become immediately due and payable by the holder of the approval certification.

The modification of fee requirements does not deal with the following issues:

1. The current NRC fee policy, based on court decisions, is that specific charges (fees) are assessed for specific services rendered to identifiable recipients. Thus fees are assessed only to the applicant for the service.

Contact:
W. O. Miller, LFMS/ADM
49-27225

2. If the legal obstacle of charging costs to persons other than the applicant is resolved, the question remains as to how the costs are to be allocated. The court has warned that fee development and assessment must not be arbitrary and capricious.

3. The proposed requirement that the fee shall become immediately due and payable by the applicant for the design approval if no reference application is filed by a utility raises several questions; e.g., is it practical to bill for services performed after a 10-year lapse in time; what if the initial applicant for design approval is no longer in business; who is responsible for the costs if the design application is denied or withdrawn, etc.

The application filed by Westinghouse Electric for RESSAR-SP/90 is currently undergoing staff review and the applicant is subject to fees for full recovery of NRC costs to $1,477,100. Also, the review of the severe accident analysis report filed by General Electric for GESSAR II is nearing completion, and this amendment to the FDA-1 is subject to full cost recovery under Part 170. General Electric has filed a written request to be exempted from the provisions of the revised rule for the GESSAR II severe accident analysis report. If granted, General Electric would not be required to pay any part of the FDA-1 fee unless it is referenced by utilities.

If the Commission readopts a deferred payment schedule, fairness and equity would seem to dictate that deferred payment also apply to the applications currently on file.

1. The $1,477,100 PDA for RESAR-SP/90 (which would include the cost for the review of the severe accident analysis) would be deferred until the approved design is referenced in a utility application(s) or the initial approval or its renewal expires.

2. The fee for the GESSAR-II severe accident analysis would be deferred until the approved design is referenced in a utility application or the initial approval or its renewal expires.

The enclosure shows fees required under 1978 and 1984 schedules.

Attachment:
Fees For Review of PDA, FDA

FEES FOR REVIEW OF PDA, FDA

	1978 Rule	1984 Rule
Application Fee (NSSS, BOP)	$50,000	$50,000 (preliminary, final)
PDA (NSSS)	$412,100 (excludes appl. fee)*	$1,427,100 (excludes appl. fee)*
PDA (BOP)	$412,100 (excludes appl. fee)*	
FDA (NSSS)	$483,400 (excludes appl. fee)*	$1,427,100 (excludes appl. fee)*
FDA (BOP)	$501,200 (excludes appl. fee)*	
Amendment to PDA, FDA	Full cost	Full cost
Payment	5 installments for first 5 units referenced	Payment due at 6-month intervals as work progresses

*Charge based on full costs to ceiling.