

August 2, 1982



SECY-82-326

RULEMAKING ISSUE
(Affirmation)

For: The Commissioners

From: James R. Tourtellotte, Chairman
Regulatory Reform Task Force

Subject: BACKFITTING: PROPOSED RULE AND POLICY STATEMENT

Purpose: Approval of Proposed Rulemaking, Policy Statement
and Federal Register Notice

Discussion: Attached for notation vote by the Commission is a
draft Federal Register Notice proposing a change to
the Commission's backfitting policy. The proposed
rule and policy statement reflect the views and
comments of the Task Force and Senior Advisory
Group.

The enclosed revision would impose a new standard on
the NRC staff in making backfitting decisions. Once
a plant was found to be safe, backfitting would not
be required unless circumstances developed which
indicated the plant was below an acceptable level of
risk.


James R. Tourtellotte, Chairman,
Regulatory Reform Task Force

Enclosure: -
Draft Federal Register Notice

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8209010085

XA

XA Copy Has Been Sent to PDR

Commissioners' comments should be provided directly to the Office of the Secretary by c.o.b. Friday, August 20, 1982.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Wednesday, August 11, 1982, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

This paper is tentatively scheduled for affirmation at an Open Meeting during the Week of September 6, 1982. Please refer to the appropriate Weekly Commission Schedule, when published, for a specific date and time.

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10 CFR PART 50

BACKFITTING

Agency: Nuclear Regulatory Commission

Action: Proposed Rule

Summary:

The Commission is considering amending its regulations to modify the backfitting provision and associated sections applicable to utilization and production facilities. The proposed changes would modify the Commission standard for determining whether backfitting is required. First, marginal safety improvements or incremental increases in safety would not meet the new threshold unless it was determined that the overall level of safety was not acceptable. Second, the burden for demonstrating that a backfit is necessary would shift substantially so that the NRC staff would have to demonstrate that the backfit is necessary. Backfitting as presently defined refers to eliminations, modifications, or additions to a nuclear plant's design after CP approval.

These backfitting revisions are being considered as part of a larger effort to review the NRC's internal process and procedures associated with the licensing of nuclear power reactors. The proposed modifications to the NRC's regulations would be implemented in association with policy changes to staff procedures in making backfitting decisions. A policy

statement is also included with these proposed amendments for comment.

The purposes of the proposed amendments are as follows:

- ° To address the concern that the pace and nature of regulatory actions have created a potential safety problem which deserves further attention by the agency.
- ° To make the backfitting standard more consistent with Commission proposals for use of safety goals and with increased emphasis on assessment of overall risk.
- ° To reduce the level of regulatory uncertainty and ensure better understanding and improved analysis of the costs and safety benefits likely to result from NRC imposed changes before they are placed in effect.

Date: Comments received after (60 days after publication) will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments filed on or before (60 days after publication).

Addresses: Written comments should be submitted to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555,
Attention: Docketing and Service Branch. Copies of all documents

received may be examined and copied for a fee in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C.

For Further Information Contact: James Tourtellotte, Regulatory Reform Task Force, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, telephone (202) 634-3300.

Supplementary Information: The Nuclear Regulatory Commission requires continuous conformance to its regulations during the lifetime of each licensed facility, unless a specific exemption is granted. Advances in knowledge concerning reactor design and reactor safety inevitably leads ? the NRC to identify new requirements. Implementation of such new requirements to plants undergoing operating license review has been known as "ratcheting". The modification of an operating facility to meet such new requirements has been referred to as "backfitting". Backfitting as used in these revisions, refers to both processes.

The first formal appearance of backfitting in the regulations governing commercial nuclear power plants was on April 16, 1969, when the Atomic Energy Commission (AEC) published for comment a proposed new section to Part 50, Title 10 of the Code of Federal Regulations (10 CFR 50.109). The purpose of the proposed regulation was to indicate the circumstances under which the AEC could require backfitting of facilities. On March 31, 1970, the AEC promulgated the regulation, essentially unchanged.

The present standard for making backfitting decisions as contained in the Commission's regulations states that backfitting may be required only if the Commission finds that the action will provide "substantial additional protection which is required for the public health and safety ..." This broad authorization to require safety improvements is contingent on their substantially increasing the protection of the public.

While Section 50.109 is the formal statement about backfitting in the Commission's regulations, the NRC has invoked it only rarely. A 1980 Senate staff study states that the reasons for lack of use are as follows:^{1/} First, licensee compliance has seldom required formal orders from the NRC. Licensees have been willing to act upon notice from the NRC of an impending required action in order to avoid the procedural complications of public hearing that attach to NRC orders. (The use of confirmatory orders to verify licensee commitments is an exception to this statement.) Second, many new requirements have been identified by operating plants during the periodic reviews for reloading of new fuel or during generic reviews of important safety issues. Third, new requirements have been imposed in the licensing review of a particular reactor, sometimes without significant participation by

^{1/} U. S. Congress. Subcommittee on Nuclear Regulation for the Committee on Environment and Public Works U. S. Senate. Staff Studies Nuclear Accident and Recovery at Three Mile Island. 96th Congress, 2nd Session. July 1980.

senior agency officials, and the application of such new requirements has served as a precedent for all subsequent reviews of other reactors.

The process of backfit decision-making, when it has been applied, has at times been largely ad-hoc without consistent criteria being applied to backfit decisions. The pace of backfit requirements, although it has slowed very recently, increased considerably after the Three Mile Island accident and has created concern that such accumulating regulatory actions present a potential safety problem. (See NUREG-0839, "Report on a Survey by Senior NRC Management to Obtain Viewpoints on the Safety Impact of Regulatory Activities from Representative Utilities Operating and Constructing Nuclear Power Plants," July 1981, USNRC.)

The present concern for bringing "backfitting" under better control is, therefore, not new. Licensees have complained of the economic and potential safety consequences of inappropriate backfitting for some time. The NRC staff has also recognized the problem within the context of staff review and prepared a staff paper on the generation of new reactor requirements which included this subject in January of 1979 (see SECY-79-8). This paper, prepared by the Director, NRR, provides in part a careful and well-thought out analysis of the problems of determining the need for new requirements that remains applicable today. The occurrence of the accident at Three Mile Island in March 1979 effectively sidetracked substantial consideration of the backfitting aspects of this proposal.

However, having put in place additional requirements in response to the TMI-2 accident in the interim, it is now appropriate to reconsider the concerns raised about the requirements process. Such consideration is also consistent with the Commission's recent attention to development of a safety goal (see NUREG-0880 and 47 FR 7023, February 17, 1982). The attempt to provide benefit/cost numerical guidelines to aid decision-making is a key aspect of improving the stability of the requirements process and of improving the understandability of decision-making. Although, as recognized in discussions of the safety goal, numerical guidelines are only one consideration in decisions and for the foreseeable future, regulatory decisions will require use of qualitative factors, as well as, engineering judgment.

One other recent related action involves the establishment of formal procedures for the control of generic requirements on reactor licensees. A Committee to Review Generic Requirements has been established, procedures for controlling generic requirements are being developed and preliminary criteria used in determining the need for new requirements have been identified. (See SECY 82-39 and 82-39A, dated January 29, 1982 and April 29, 1982, respectively.)

The substance of these proposed backfit revisions involves changes to Sections 2.204, 50.54, 50.91, and 50.109 of the Commission's regulations. The major thrust of these changes is to provide a heavier burden on the NRC staff when determining whether backfitting is necessary. Marginal safety improvements or incremental increases in

safety would not meet the new threshold. Once a plant is found to be safe, backfitting shall not be required unless circumstances develop which indicate the plant is below an acceptable level of risk. [Ⓢ]The

← major change is in the language of 50.109, the backfitting provision. The other changes clarify that a backfitting finding, as required by 50.109, would be made by the NRC when warranted whether or not imposed by formally invoking 50.109. The standard for determining whether a backfit is to be required is also changed, as is the definition of backfit. Changes to NRC generated procedures after issuance of an operating license are now also considered a backfit. Additionally, the requirement for licensee submittal of information concerning a backfit now involves a benefit/cost analysis if development of new information is involved. An identical potential analysis of benefit/cost of the submittal of some kinds of statements required by 50.54(f) is also added.

Since orders for modifications of licenses or issuance of amendments may result in changes or modifications to facilities, Sections 2.204 and 50.91 are modified to require the findings stated in 50.109 when a backfit is involved in either process. Additionally, an exception to the making of such a finding is included in § 2.204 if the public health and safety require an immediately effective order for modification. The Task Force has included this provision to ensure that the requirement for a backfitting finding is not the cause of delay in issuing an order in a circumstance where immediate action would be necessary to maintain an acceptable level of safety.

The Commission has issued for public comment a proposed policy statement on safety goals for nuclear power plants. One of the purposes of developing a policy statement on safety goals is to provide a better means of testing the adequacy of and need for proposed new regulatory requirements. As the safety goal is used, the Commission believes it will aid in providing guidelines for making backfitting decisions.

The proposed backfitting modifications emphasize an assessment of overall plant risk in making determinations. Such determinations may be based on probabilistic risk assessment (PRA), when appropriate, or may require traditional good engineering judgment or a combination of both. In any event, a risk based backfitting standard may benefit from the use of PRA, but does not necessarily require its use, in whole or in part.

In preparing these revisions, consideration was given to including detailed decision-making criteria for making analyses of the need for backfitting. However, given the uncertainty of the final form of any approved safety goals and their role in backfitting and the desire to allow for evolution of additional criteria through the operation of the Committee to Review Generic Requirements, objectives for criteria are suggested in the form of a policy statement. The proposed statement discusses the background within which a set of criteria for use in analyzing the need for backfits should be developed and also mandates an interim backfitting policy for staff use.

PAPERWORK REDUCTION ACT

This proposed rule will be submitted to the Office of Management and Budget for clearance of its information collection requirements as required by the Paperwork Reduction Act of 1980, Public Law 96-511.

REGULATORY FLEXIBILITY ACT CERTIFICATION

In accordance with the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission hereby certifies that this rule, if promulgated, will not have a significant economic impact on a substantial number of small entities.

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and section 553 of title 5 of the United States Code, the following amendment to Title 10, Chapter I, Code of Federal Regulations, Part 50, is published as a document subject to codification. 10 CFR Part 2 1. The authority citation for Part 2 continues to read as follows:

10 CFR Part 50

1. The authority citation for Part 50 continues to read as follows:

AUTHORITY: Secs. 103, 104, 161, 183, 189, 68 Stat. 936, 937, 948, 953, 954, 955, 956, as amended (42 U.S.C. 2133, 2134, 2201, 2232, 2233,

2239); secs. 201, 202, 206, 88 stat. 1243, 1244, 1246 (42 U.S.C. 5841, 5842, 5846), unless otherwise noted.

Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80-50.82 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Sections 50.100-50.102 issued under sec. 186, 68 Stat. 955 (42 U.S.C. 22356).

For the purposes of sec. 223, 68 Stat. 958, as amended (42 U.S.C. 2273), §§50.10(a), (b), and (c), 50.44, 50.46, 50.48, 50.54, and 50.80(a) are issued under sec. 161b, 68 Stat. 948, as amended (42 U.S.C. 2201(b)); §§50.10(b) and (c) and 50.54 are issued under sec. 161i. 68 Stat. 949, as amended (42 U.S.C. 2201(i)); and §§50.55(e), 50.59(b), 50.70, 50.71, 50.72, and 50.78 are issued under sec. 161o, 68 Stat. 950, as amended (42 U.S.C. 2201 (o)).

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2.204 Order for Modification of License:

The Commission may modify a license by issuing an amendment on notice to the licensee that he may demand a hearing with respect to all or any part of the amendment within twenty (20) days from the date of the notice or such longer period as the notice may provide. Except in emergencies, if the modification involves a backfit within the meaning of 50.109, the findings required by that section shall be made prior to issuance of the amendment. The amendment will become effective on the expiration of the period during which the licensee may demand a hearing,

or, in the event that he demands a hearing, on the date specified in an order made following the hearing. When the Commission finds that the public health, safety, or interest so requires, the order may be made immediately effective.

50.54 Conditions of Licenses:

(f) The licensee will at any time before expiration of the license, upon request of the Commission submit written statements, signed under oath or affirmation, to enable the Commission to determine whether or not the license should be modified, suspended or revoked. Except in emergencies, the Commission shall evaluate the costs and benefits of such requests before making them effective when they involve potential modifications within the meaning of backfitting, as defined by § 50.109, and when they require the development or manufacture of new analyses or information to respond.

50.91 Issuance of Amendment:

In determining whether an amendment to a license or construction permit will be issued to the applicant the Commission will be guided by the considerations which govern the issuance of initial licenses or construction permits to the extent applicable and appropriate. Except in emergencies, the Commission shall not require backfitting, as defined in 50.109, as part of an amendment issuance without making the findings

required by that section. If the application involves the material alteration of a licensed facility, a construction permit will be issued prior to the issuance of the amendment to the license. If the amendment involves a significant hazards consideration, the Commission will give notice of its proposed action pursuant to Section 2.105 of this chapter before acting thereon. The notice will be issued as soon as practicable after the application has been docketed.

* * * * *

50.109 Backfitting:

- (a) Once a facility has received a construction permit, the Commission shall not require the backfitting of that facility unless it can be demonstrated that without backfitting the overall risk of plant operation to the public health and safety, or the common defense and security will be substantially greater than that estimated to exist at the time of initial approval and the backfit is necessary to bring the plant within acceptable levels of risk. As used in this section, "backfitting" of a production or utilization facility means the addition, elimination or modification of structures, systems, or components of the facility after the construction permit has been issued, or the addition, elimination, or
modification of ^{structures, systems, components or} procedures after the operating license has been issued.

(b) Remains unchanged.

(c) The Commission may at any time require a holder of a construction permit or a license to submit such information concerning the addition or proposed addition, the elimination or proposed elimination, or the modification or proposed modification of structures, systems, components or procedures of a facility as it deems appropriate. Except in emergencies, the Commission shall evaluate the costs and benefits of required information submittals before making them effective when they involve the development or manufacture of new analyses or information to respond.

Dated at _____ this _____ day of _____, 1982.

For the Nuclear Regulatory Commission.

Samuel J. Chilk
Secretary of the Commission

DRAFT POLICY STATEMENT ON BACKFITTING

In revising its regulations to provide a more predictable and consistent backfitting policy, the Commission is considering modifying its standard for determining when backfitting should be applied. The Commission would also clarify that any proposed requirement meeting the definition of backfitting, even if promulgated through issuance of orders, amendments, or informal or formal requests for information or analyses, would require the making of a backfitting finding by the Commission, whether invoked under section 50.109 of the Commission's regulations or not.

While these changes will provide a more consistent application of the required backfitting finding and increase the probability that such a finding will be made when warranted (prior to implementation by a licensee), they do not address the more difficult issue of providing detailed, objective--and to the extent possible--quantitative criteria to be applied in making backfitting determinations. It is the Commission's position that the explicit statement and consistent use of such criteria will also be necessary if the past backfit process is to come under more balanced control.

In attempting to provide a more disciplined approach to the application of additional requirements to existing plants, a number of considerations are recognized as important in deciding upon a changed policy. The backfitting issue is closely tied to the internal NRC process of generating new requirements--if not a direct and necessary

outcome of that process. The Commission has already taken steps to provide a more rational generic requirements generation process through the creation of a senior staff Committee to Review Generic Requirements. In addition, in determining if additional modification is required, some consideration of plant or class of plant characteristics should be made. Past regulatory practice has attempted to use different standards in deciding whether new or additional requirements are necessary, in recognition of plant-specific or class of plant-specific characteristics which can affect an overall finding of acceptable level of safety, such as plant vintage or specific design. Finally, some consideration should be given to the differences between decisions for operating plants and decisions for plants under operating license (OL) review.

In the absence of a policy or applied methodology with which overall risk can be assessed quantitatively and used as a backfitting criterion, some set of judgmental criteria will have to serve, at least as an interim measure until a safety goal and its supporting analytical tools can be tested, approved and implemented. In addition, a choice must be made in defining what constitutes the design at initial approval--the reference point against which change or modification would be considered.

Regardless of the final form of the backfitting standard, as it will appear in 50.109, the backfitting decision-making criteria should have as an objective consideration of the following areas:

° Criteria should include specification of the specific kinds of information that will be assessed in determining whether or not a backfit should be made. An example of such specification, not to be considered exhaustive, might include a technical description of the purported safety problem, the plants to which the problem and proposed backfit should apply, the degree of risk thought to be reduced by the change, and the assessed safety value, of the costs and other impacts of the proposed backfit.

° The criteria should include a discussion of what choices will be made in determining whether proposed changes constitute a backfit. The Commission expects that the design criteria contained in the Standard Review Plan (SRP) may serve as the defined "initially approved" design and that proposed changes from the SRP version used at CP approval would constitute a backfit. For plants now under review and for future plants this definition would be straight forward. For plants approved before use of the SRP, reviewed under early versions of the SRP, with or without documented deviations from the SRP, the criteria may not have been applied or documented in a way to allow determination of whether or not a change is involved. Plants within this category will require a separate evaluation method to determine whether a backfit is involved or will have to be dealt with on a case-by-case basis.

° The criteria should include a description of what choices will be made in making the determination of what constitutes "necessity", "acceptable level of safety", "substantial reduction of risk", or any

other qualitative standard that would be expected to be applied in helping to determine whether a proposed change meets the necessary threshold for implementation.

Based upon a Commission choice of the backfitting standard to be contained in the regulations, public comment on these proposals, and additional staff formulation of detailed decision-making criteria, the Commission intends on implementing a revised backfitting policy, including the publication of a stated set of decision-making criteria, in the near future. The Commission staff, in particular the CRGR, will provide the Commission its recommendations for the form of such criteria and plans for implementation after promulgation of final revisions to the Commission's backfitting regulations. The Commission expects the use of these criteria to be compatible with the objectives and approved practices of the Committee on Generic Requirements and to be applied as necessary to the existing license review process. Additional consideration may also be given to the role of hearing board licensing decisions within the backfitting context, in as much as a Board decision may also contain requirements within the meaning of backfitting.

Prior to determining what modifications to its regulations should be adopted, as an interim measure the Commission is directing the Committee on Generic Requirements (CRGR) to ensure that backfitting findings are made where warranted in accordance with the Commission's existing regulations. Such findings should be made when proposed changes fit the backfit definition, whether or not §50.109 is formally

invoked. Where a proposed backfit applies to a specific plant, rather than on a generic basis, the staff should use the existing CRGR criteria as developed for generic requirements, in determining whether the backfit should be required.