

Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

RIN 3150—AG26

Emergency Core Cooling System Evaluation Models

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations to allow holders of operating licenses for nuclear power plants to reduce the assumed reactor power level used in evaluations of emergency core cooling system (ECCS) performance. Under the proposed rule, licensees would be given the option to apply a reduced margin for ECCS evaluation or to maintain the value of reactor power currently mandated in the regulation. This action would allow interested licensees to pursue small, but cost-beneficial, power uprates and would reduce unnecessary regulatory burden without compromising the margin of safety of the facility.

DATES: The comment period expires on December 15, 1999. Comments received after this date will be considered if it is practical to do so but the NRC is able to assure consideration only for comments received on or before this date.

ADDRESSES: Mail written comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, Attention: Rulemakings and Adjudications Staff, Mail Stop O-16C1.

Deliver written comments to: One White Flint North, 11555 Rockville Pike, Rockville, Maryland between 7:30 a.m. and 4:15 p.m. on Federal workdays.

Documents related to this rulemaking may be examined at the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, D.C. Documents also may be viewed and downloaded electronically via the interactive rulemaking Web site

established by NRC for this rulemaking (see the discussion under Electronic Access in the Supplementary Information section). Obtain single copies of the environmental assessment and the regulatory analysis from the NRC contact given below.

FOR FURTHER INFORMATION CONTACT: Mr. Joseph E. Donoghue, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; telephone: 301-415-1131; or by Internet electronic mail to jed1@nrc.gov.

SUPPLEMENTARY INFORMATION:

Background

A holder of an operating license (i.e., the licensee) for a light-water power reactor is required by regulations issued by the NRC to submit a safety analysis report that contains an evaluation of emergency core cooling system (ECCS) performance under loss-of-coolant accident (LOCA) conditions. 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," requires that ECCS performance under LOCA conditions be evaluated and that the estimated performance satisfy certain criteria. Licensees may conduct an analysis that "realistically describes the behavior of the reactor system during a LOCA" (often termed a "best-estimate analysis"), or they may develop a model that conforms with the requirements of Appendix K to 10 CFR Part 50. Most ECCS evaluations are based on Appendix K requirements. The opening sentence of Appendix K establishes the requirement to conduct ECCS analyses at a specified power level: "It shall be assumed that the reactor has been operating continuously at a power level at least 1.02 times the licensed power level (to allow for such uncertainties as instrumentation error)." Licensees have proposed using instrumentation that would reduce the uncertainties associated with measurement of reactor power when compared with existing methods of power measurement. This would justify a reduced margin between the licensed power level and the power level assumed for ECCS evaluations. The proposed rule would revise this provision in Appendix K, thereby allowing licensees the option of using a value lower than 102 percent of licensed

power in their ECCS analyses where justified.

Several licensees have expressed interest in using updated feedwater flow measurement technology discussed later in "Calorimetric Uncertainty and Feedwater Flow Measurement" as a basis for seeking exemptions from the Appendix K power level requirement and to implement power uprates. One licensee, Texas Utilities Electric Company (TUE), has obtained an exemption from the Appendix K requirement for Comanche Peak Units 1 and 2 and is pursuing an increase in licensed power based, in part, on more accurate feedwater flow measurement capability. The prospect of additional exemption requests from other licensees provides the impetus for the proposed rule.

The objective of this rulemaking is to reduce an unnecessarily burdensome regulatory requirement. Appendix K was issued to ensure an adequate performance margin of the ECCS in the event a design-basis LOCA were to occur. The margin is provided by conservative features and requirements of the evaluation models and by the ECCS performance criteria. The existing regulation does not require that the power measurement uncertainty be demonstrated, but rather mandates a 2-percent margin to account for uncertainties, including those expected to be involved with measuring reactor power. By allowing licensees to justify a smaller margin for power measurement uncertainty, the proposed rule does not violate the underlying purpose of Appendix K. The intent of Appendix K, to ensure sufficient margin to ECCS performance in the event of a LOCA, would still be met because of the substantial conservatism of other Appendix K requirements. The proposed rule would not significantly affect plant risk, as discussed in the section entitled, "ECCS Evaluation Conservatism."

Another objective is to avoid unnecessary exemption requests. As discussed above, a licensee has obtained an exemption from the 2-percent margin requirement in 10 CFR Part 50, Appendix K. It is likely that additional exemption requests will be submitted. Revising the rule to remove the need for licensees to obtain exemptions is considered by the NRC to be a prudent regulatory action.

If adopted, the proposed rule would give licensees the option of applying a reduced margin between the licensed power level and the assumed power level for ECCS evaluation, or maintaining the current margin of 2-percent power. As discussed in the section entitled "ECCS Evaluation Conservatism," the NRC has concluded that the 2 percent power margin requirement in the existing rule appears to be based solely on considerations associated with power measurement extant at the time of the original ECCS rulemaking. If licensees can show that the uncertainties associated with power measurement instrumentation errors are less than 2 percent, thereby justifying a smaller margin, then the current rule unnecessarily restricts operation.

Making this change to the rule would give licensees the opportunity to use a reduced margin if they determine that there is a sufficient benefit. Licensees could apply the margin to gain benefits from operation at higher power, or the margin could be used to relax ECCS-related technical specifications (e.g., pump flows). Another potential benefit would be in modifying fuel management strategies (e.g., possibly by altering core power peaking factors). However, the proposed rule by itself does not allow increases in licensed power levels. Because licensed power level for a plant is a technical specification limit, proposals to raise the licensed power level must be reviewed and approved under the license amendment process. The license amendment request should include a justification of the reduced power measurement uncertainty and the basis for the modified ECCS analysis, including the justification for reduced power measurement uncertainty, should then be included in documentation supporting the ECCS analysis (see Section-by-Section Analysis).

In the short term, the NRC intends to grant exemptions to the assumed power level provision of Appendix K for properly supported exemption requests. In addition to satisfying the provisions of 10 CFR 50.12, properly supported exemption requests are expected to quantify the uncertainties associated with measuring reactor thermal power that are associated with the current 2-percent power margin.

In the longer term, the NRC intends to review the affected safety analysis guidance and will evaluate the impact of the proposed rule on those safety analyses. Further, the NRC is considering the need for specific guidance to help licensees appropriately account for power measurement uncertainty in safety analyses. However, the NRC expects that power uprate

amendment requests based on the proposed rule will address the suitability of non-LOCA analyses for operation at proposed higher power levels.

In addition to comments on the proposed rule, the NRC is seeking comments on the specific issues set forth below under "Issues for Public Comment."

Conservatism in Appendix K ECCS Evaluation Model

Appendix K defines conservative analysis assumptions for ECCS performance evaluations during design-basis LOCAs. Large safety margins are provided by conservatively selecting the ECCS performance criteria as well as conservatively establishing ECCS calculational requirements. The major analytical parameters and assumptions that contribute to the conservatisms in Appendix K are set forth in Sections A through D of the rule: (A) "Sources of Heat During the LOCA" (the 102-percent power provision is a key factor), (B) "Swelling and Rupture of the Cladding and Fuel Rod Thermal Parameters," (C) "Blowdown Phenomena," and (D) "Post-blowdown Phenomena: Heat Removal by ECCS." In each of these areas, several assumptions are typically used to ensure substantial conservatism in the analysis results. For instance: under "Sources of Heat During the LOCA," decay heat is modeled on the basis of an American Nuclear Society standard with an added 20-percent penalty, and the power distribution shape and peaking factors expected during the operating cycle are chosen to yield the most conservative results. In "Blowdown Phenomena," the rule requires use of the Moody model and the discharge coefficient that yields the highest peak cladding temperature. "Post-Blowdown Phenomena: Heat Removal by the ECCS," requires that the analysis assume the most damaging single failure of ECCS equipment.

One of several conservative requirements in Section A is to assume that the reactor is operating at 102 percent power when the LOCA occurs "to allow for such uncertainties as instrumentation error. . . ." (Appendix K, Section I.A., first sentence, emphasis added). The phrase, "such as," suggests that the two percent power margin was intended to address uncertainties related to heat source considerations beyond instrument measurement uncertainties. However, the basis for the required assumption of 102 percent power (2 percent power margin) does not appear to be contained in the rulemaking record for the ECCS rules, 10 CFR 50.46 and Appendix K. These

rules were adopted in 1974 (39 FR 1001, January 4, 1974), and were preceded by a formal rulemaking hearing which ultimately resulted in a Commission decision on the proposed rulemaking, CLI-73-39, 6 AEC 1085 (December 28, 1973). Neither the statement of considerations (SOC) for the final rule nor the Commission decision appear to provide specific basis for the required assumption of 102 percent power.

The SOC for the final 1974 rule discusses the 102 percent power assumption in general terms, and does not mention instrumentation uncertainty:

The Commission believes that the implementation of the new regulations will ensure an adequate margin of performance of the ECCS should a design basis LOCA ever occur. This margin is provided by conservative features of the evaluation models and by the criteria themselves. Some of the major points that contribute to the conservative nature of the evaluations and the criteria are as follows:

(1) Stored heat. The assumption of 102 percent of maximum power, highest allowed peaking factor, and highest estimated thermal resistance between the UO₂ and the cladding provides a calculated stored heat that is possible but unlikely to occur at the time of a hypothetical accident. While not necessarily a margin over the extreme condition, it represents at least an assumption that an accident happens at a time which is not typical.

39 FR at 1002 (first column).¹ Thus, while the pre-accident power level assumption is connected with the modeling of the rate of heat generation after the LOCA occurs, a clear basis for the 102 percent assumed power level requirement is not provided, nor does the SOC explain whether there are other uncertainties besides instrumentation uncertainties for which the 102 percent assumed power level is intended to compensate.

The Commission's decision in the ECCS rulemaking hearing also does not explain whether the 102 percent assumed power level was intended to address uncertainties other than instrumentation uncertainties. Section I of the Commission decision was the basis for the SOC discussion on the 102 percent assumed power level (See 6 AEC at 1093-94). Section III. A. of the Commission's decision, "Required and Acceptable Features of the Evaluation Model," does not offer a detailed technical the basis for the power level chosen, but instead uses the language ultimately adopted in the final Appendix K rule:

¹ This statement in the SOC was taken unchanged from Section I of the Commission's ECCS decision. See CLI-73-39, 6 AEC 1085, 1093-94 (December 28, 1973).

For the heat sources listed in paragraphs 1 to 4 below it shall be assumed that the reactor has been operating continuously at a power level at least 1.02 times the licensed power level (to allow for such uncertainties as instrumentation error), with the maximum peaking factor allowed by the technical specifications.

6 AEC at 1100. Thus, the Commission's decision does not shed further light on the basis for the 102 percent assumed power level, nor whether the Commission had in mind uncertainties other than those associated with the instrumentation for measurement of power level.

NRC review of the ECCS rulemaking hearing record did not disclose presentations relating to quantification of power measurement uncertainties, or the magnitude of other uncertainties that the 102 percent assumed power level may have been intended to address. The Commission decision (CLI-73-39, 6 AEC 1085, December 28, 1973) cited three documents in the rulemaking hearing record. The first, cited in the Commission decision as Exhibit 1113, was "Supplemental Testimony of the AEC Regulatory Staff on the Interim Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Cooled Power Reactors," (filed October 26, 1972). In Section 10 of the document, stored energy in the fuel was considered, specifically the expected power distributions in fuel rods. The 102-percent power analysis requirement is not discussed. The second item, cited in the Commission decision as Exhibit 1137 was "Redirect and Rebuttal Testimony of Dr. Donald H. Roy on Behalf of Babcock & Wilcox," (October 26, 1972) in which the characteristic of the decay heat release following reactor shutdown was discussed. In this document, the 102-percent assumption is associated with the predicted decay heat generation rate. The over-power condition is associated with a "design-basis maneuvering operation," but the basis for the value of power chosen for the analysis (i.e., 102 percent) is not disclosed. Finally, in the "Concluding Statement of Position of the Regulatory Staff—Public Rulemaking Hearing on: Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Cooled Nuclear Power Reactors," April 16, 1973 (the Concluding Statement), the power level assumption is included as part of the proposed rule itself. The proposed rule language clearly states that the power level assumption is to "allow for instrumentation error." The term "such as" does not appear here. It is unclear when or why the proposed language in this regard was changed to its current

form. The power level assumption is mentioned again in the Concluding Statement indirectly in association with power level changes before the LOCA and the effect on decay heat generation. But it is discussed most directly with regard to initial stored energy in the fuel. In the discussion on stored energy, the 102-percent assumption is attributed to "uncertainties inherent in the measurement of the operating power level of the core," (page 144 of the Concluding Statement). Reasons for choosing 102-percent as the value are not discussed.

When Appendix K was first issued, as is the case today, the thermal power generated by a nuclear power plant was determined by steam plant calorimetry, which is the process of performing a heat balance around the nuclear steam supply system (called a calorimetric). The heat balance depends upon measurement of several plant parameters, including flow rates and fluid temperatures. The differential pressure across a venturi installed in the feedwater flow path is a key element in the calorimetric measurement. Licensees have proposed using instrumentation other than a venturi-based system to obtain feedwater flow rate for calorimetrics. The lower uncertainty associated with the new instrumentation is information that was apparently not available during the original Appendix K rulemaking.

In view of the regulatory history for Appendix K, the Commission now believes that the 2-percent margin embodied in the requirement for a 102-percent assumed power level in Appendix K was based solely on uncertainties associated with the measurement of reactor power level.

Proposed Reduction in 102 Percent Assumed Power Level

The Commission believes that other requirements of Appendix K modeling include substantial conservatisms of much greater magnitude than the 2 percent margin embodied in the requirement for a 102 percent assumed power level. This point was discussed in "Conservatisms in Appendix K ECCS Evaluation Model," above.

The Commission is also aware of new information gained since the 1974 rulemaking which shows that the Appendix K model contains substantial conservatisms. Evidence from experiments designed to simulate LOCA phenomena suggest that these conservatisms added hundreds of degrees Fahrenheit to the prediction of peak fuel cladding temperature than would actually occur during a LOCA. The significant conservatism was

necessary when the rule was written because of a lack of experimental evidence at that time with respect to the relative effects of analysis input parameters, including pre-accident power level. Since that time, there has been substantial additional research on LOCA. NUREG-1230, "Compendium of ECCS Research for Realistic LOCA Analysis," December 1988, contains the technical basis for improved understanding of LOCA progression and ECCS evaluation gained after the ECCS rule was issued. The NUREG includes a discussion of the basis for uncertainties in detailed fuel bundle power calculations as part of the consideration of overall calculational uncertainty inherent in best-estimate evaluations. Chapters 7 and 8 of the NUREG include consideration of the changes in licensed power level that could result from application of best-estimate evaluation methods. The discussion includes an estimated sensitivity of predicted peak clad temperature associated with changes in pre-accident power level. From that estimate, the NRC expects peak cladding temperature changes of approximately 15°F to result from 1-percent changes in plant power level that could result from the proposed rule.

In view of: (i) Substantial conservatisms embodied in the Appendix K requirements for ECCS evaluations, (ii) new information developed since the 1974 rulemaking which shows additional conservatism in the Appendix K modeling requirements beyond that understood by the Commission when it adopted the 1974 rule, and (iii) the relative insensitivity of the calculated clad temperatures to assumed power level, the Commission concludes that it is acceptable to allow a reduction in the currently-required 102 percent power level assumption if justified by the actual power level measurement instrumentation uncertainty. Accordingly, the Commission proposes to amend the Appendix K requirement for an assumed 102 percent power level. The proposed rule would allow a licensee to use an assumed power level of less than 102 percent (but not less than 100 percent), provided that the licensee has determined that the uncertainties in the measurement of core power level justifies the reduced margin.

Calorimetric Uncertainty and Feedwater Flow Measurement

The NRC staff has approved an exemption to the 102-percent power level requirement for Comanche Peak Units 1 and 2. The basis for the action is application of upgraded feedwater flow measurement technology at the

plant. As indicated, the prospect of additional licensees requesting similar action has prompted the proposed rule. Other methods, systems, or analyses could be used as the basis for demonstrating reduced power measurement uncertainty.

In most nuclear power plants, operators obtain a continuous indication of core thermal power from nuclear instruments, that provide a measurement of neutron flux. The nuclear instruments must be periodically calibrated to counteract the effects of changes in flux pattern, fuel burnup, and instrument drift. Steam plant calorimetry, which is the process of performing a heat balance around the nuclear steam supply system (called a calorimetric), is used to determine core thermal power and is the basis for the calibration. The differential pressure across a venturi installed in the feedwater flow path is a key element in the calorimetric measurement. Some plants use this calorimetric value directly to indicate thermal power; the nuclear instruments are used as anticipatory indicators for transients and for reactivity adjustments made with the control rods.

The system in use at Comanche Peak Units 1 and 2 is the Leading Edge Flowmeter (LEFM), manufactured by Caldon, Inc. The LEFM system is an ultrasonic flow meter that measures the transit times of pulses traveling along parallel acoustic paths through the flowing fluid. LEFM technology has been employed in non-nuclear applications, such as petroleum, chemical, and hydroelectric plants for several years. This operating experience will provide reliability data, supplementing data from nuclear applications. Additional information on the Comanche Peak Appendix K exemption and on the Caldon, Inc. LEFM system appears in safety evaluations issued by the NRC staff on March 8, 1999, and May 6, 1999.

ABB Combustion Engineering has expressed interest in the proposed rule because its flow-measuring system, known as Crossflow (which is also an ultrasonic flow-measuring device), is expected to be part of a licensee exemption request in the near future.

Issues for Public Comment

The NRC is seeking comments from the public on the following issues related to this proposed rule:

1. The current rule states that the required 2-percent analysis margin is to account for "such uncertainties as instrumentation error. . . ." (emphasis added). This suggests that the 2-percent margin was intended to account for

other sources of uncertainty in addition to instrumentation error. However, explicit documentation of the basis for the value of the margin does not appear to be contained in the rulemaking record for the original 1974 ECCS rulemaking. The Commission is interested in whether there are other sources of uncertainty, relevant to sources of heat following a LOCA, that should be considered when licensees seek to reduce the margin in the Appendix K requirement for assumed power. If other contributors are suggested, a clear technical justification should accompany the suggestion.

2. Are there rulemaking alternatives to this proposed rule that were not considered in the regulatory analysis for this proposed rule?

3. What criteria should be used for determining whether a proposed reduction in the 2 percent power margin has been justified, based upon a determination of instrumentation error? For example, should a demonstrated instrumentation error of 1 percent in power level be presumptive of an acceptable reduction in assumed power margin of 1 percent?

4. How should the proposed rule address cases in which licensees determine that power measurement instrument error is greater than 2 percent?

Section-by-Section Analysis

Appendix K to Part 50—ECCS Evaluation Models (I)(A)—Sources of heat during the LOCA

This section would be amended by removing words from the first sentence in the section to specifically associate the power level requirement with instrumentation error, and by adding a sentence immediately following the first sentence in the section. The new sentence indicates that licensees may assume a power level lower than 102 percent, but not less than 100 percent, provided that the proposed lower alternative value can be shown to account for core thermal power measurement instrumentation uncertainty.

Appendix K, Part II (1)(a) requires that the values of analysis parameters or their basis be sufficiently documented to allow NRC review. The requirement applies to all analysis input parameters, including those related to other plant instrumentation, such as temperature and pressure. Changes to other inputs are documented in the same manner as the power measurement uncertainty would be documented under the proposed rule. NRC review and approval is not necessarily needed to

change a parameter in an approved ECCS evaluation model. Estimated changes in ECCS performance due to revised analysis inputs are reported under § 50.46 (a)(3), at least annually. As discussed in the Statement of Considerations for Appendix K (53 FR 36001, September 16, 1988), the annual reports keep NRC apprised of changes. This should ensure that the NRC staff can judge a licensee's assessment of the significance of changes and maintain cognizance of modifications made to NRC-approved evaluation models. The licensee must include revised parameters and other changes in the ECCS evaluation as required by § 50.46 (a)(3) when a single change or an accumulation of changes is expected to affect peak cladding temperature by 50°F or more. The basis for the revised analysis parameter (i.e., the assumed power level) should be included in documentation of the evaluation model, as required by Appendix K, Part II (1)(a).

In most cases, the NRC expects that the analysis supporting the power measurement uncertainty, as well as the description of the relevant instrumentation and associated plant-specific parameters involved in the uncertainty analysis, would be submitted for NRC review and approval before being used. These requests are expected because most licensees have adopted Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications." The generic letter provided guidance for licensees to transfer cycle-specific parameters from their technical specifications to a Core Operating Limits Report (COLR). Licensees following the generic letter guidance added an administrative requirement to their technical specifications that specifically identifies NRC-reviewed and approved methods used to determine core operating limits (e.g., topical reports). Because a number of core operating limits are based on LOCA analysis results, ECCS evaluation methods are included in the technical specification list. Therefore, most licensees opting to use the relaxation in the proposed rule would need to revise technical specifications to include a reference to an NRC-approved topical report that includes the uncertainty analysis justifying reduced power measurement uncertainty.

An additional technical specification consideration for licensees pursuing changes based on the proposed rule could involve nuclear instruments (NI) requirements. Existing plant technical specifications include surveillance requirements to calibrate the power range NIs based on the calorimetric measuring reactor thermal power. The

NIs provide the indication of reactor power used as an input for safety systems. Licensees obtaining the relaxation offered in the proposed rule are expected to change some operating parameter of the plant, whether it be power level, required ECCS flow, etc. By incorporating the justification of reduced uncertainty in power measurement in the basis for their ECCS analysis, licensees would be placing a condition on an input to the calorimetric. The NI calibration required by the plant licensee would then be based on a calorimetric assuming the reduced power measurement uncertainty. If, for some reason, during the course of plant operation the reduced uncertainty did not apply (e.g., the new feedwater flow meter became inoperable), the calorimetric would no longer be a valid source of calibration for the NIs. Licensees would need to take action to maintain compliance with their technical specification, for example, by using an alternate input to the calorimetric. The power measurement uncertainties associated with the alternate input would then apply and the plant would need to adjust its operating condition (possibly lower its operating power level) to satisfy the proposed rule and to maintain the validity of applicable safety analyses.

Referenced Documents

Copies of GL-88-16 and CLI-73-39 are available for inspection and copying for a fee at the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, D.C.

Electronic Access

You may also submit comments via the NRC's interactive rulemaking Web site, "Rulemaking Forum," through the NRC home page (<http://ruleforum.llnl.gov>). This site enables people to transmit comments as files (in any format, but WordPerfect version 6.1 is preferred), if your Web browser supports that function. Information on the use of the Rulemaking Forum is available on the Web site. For additional assistance on the use of the interactive rulemaking site, contact Ms. Carol Gallagher, telephone: 301-415-5905; or by Internet electronic mail to cag@nrc.gov.

Plain Language

The Presidential memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing," directed that the government's writing be in plain language. This memorandum was published June 10, 1998 (63 FR 31883). In complying with this directive,

editorial changes have been made in this proposed amendment to improve readability of the existing language of the provisions being revised. These types of changes are not discussed further in this document. The NRC requests comment on the proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the address listed under the ADDRESSES caption of the preamble.

Voluntary Consensus Standards

The National Technology Transfer Act of 1995, Pub. L. 104-113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this proposed rule, the NRC is proposing to provide holders of operating licenses for nuclear power plants with the option of reducing the assumed reactor power level used in ECCS evaluations. This proposed action constitutes a modification to an existing government-unique standard, 10 CFR part 50, appendix K issued by the NRC on January 4, 1974. The NRC is not aware of any voluntary consensus standard that could be adopted instead of the proposed government-unique standard. The NRC will consider using a voluntary consensus standard if an appropriate standard is identified. If a voluntary consensus standard is identified for consideration, the submittal must explain how the voluntary consensus standard is comparable and why it should be used instead of the proposed government-unique standard.

Finding of No Significant Environmental Impact: Availability

The NRC has determined under the National Environmental Policy Act of 1969, as amended, and the NRC's regulations in Subpart A of 10 CFR Part 51, that this regulation, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required.

The proposed action is likely to result in relatively small changes to ECCS analyses or to the licensed power of nuclear reactor facilities. The NRC staff expects that no significant environmental impact would result from the proposed rule, because licensee actions based on the proposed rule would not significantly increase the probability or consequences of accidents; no changes would be made in

the types of any effluents that may be released off site; and there would be no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action. The proposed action does not involve non-radiological plant effluents and has no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

The determination of the environmental assessment is that there would be no significant offsite impact on the public from this action. However, the general public should note that the NRC welcomes public participation. Also, the NRC has committed itself to complying in all its actions with Executive Order (E.O.) 12898, "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations," dated February 11, 1994. The NRC has determined that there are no disproportionately high and adverse impacts on minority and low-income populations. In the letter and spirit of E.O. 12898, the NRC is requesting public comments on any environmental justice considerations or questions that the public thinks may be related to this proposed rule, but that somehow were not addressed. The NRC uses the following working definition of environmental justice: Environmental justice means the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, culture, income, or educational level with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Comments on any aspect of the environmental assessment, including environmental justice, may be submitted to the NRC as indicated under the ADDRESSES heading.

The draft environmental assessment is available for inspection at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, D.C. Single copies of the environmental assessment are available from Mr. Joseph Donoghue, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, telephone: 301-415-1131, or by Internet electronic mail to JED1@nrc.gov.

Paperwork Reduction Act Statement

This proposed rule increases the burden on licensees opting to use a reduced power level assumption for ECCS analysis (i.e., below 102%) to include the change in their annual

report required under 10 CFR 50.46 (a)(3)(ii). The public burden for this information collection is estimated to average one-half hour per response. Because the burden for this information collection is insignificant, Office of Management and Budget (OMB) clearance is not required. Existing requirements were approved by the Office of Management and Budget, approval number 3150-0011.

Public Protection Notification

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

Regulatory Analysis

The Commission has prepared a regulatory analysis on this regulation. Interested persons may examine a copy of the regulatory analysis at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, D.C. Single copies of the analysis are available from Mr. Joseph Donoghue, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, telephone: 301-415-1131, or by Internet electronic mail to JED1@NRC.GOV.

Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. This proposed rule would affect only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the definition of "small entities" found in the Regulatory Flexibility Act or within the size standards established by the NRC in 10 CFR 2.810.

Backfit Analysis

The NRC has determined that the backfit rule in 10 CFR 50.109 does not apply to this proposed rule and that a backfit analysis is not required for this proposed rule because the change does not involve any provisions that would impose backfits as defined in 10 CFR 50.109(a)(1). The proposed rule would establish an alternative approach for ECCS performance evaluations that may be voluntarily adopted by licensees. Licensees may continue to comply with existing requirements in Appendix K. The proposed rule does not impose a new requirement on current licensees and therefore, does not constitute a

backfit as defined in 10 CFR 50.109(a)(1).

List of Subjects in 10 CFR Part 50

Antitrust, Classified information, Criminal penalties, Fire protection, Intergovernmental relations, Nuclear power plants and peactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

Accordingly, we propose to amend 10 CFR part 50 as follows:

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

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

Authority: Sections 102, 103, 104, 105, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 938, 948, 953, 954, 955, 956, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2132, 2133, 2134, 2135, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5851). Section 50.10 also issued under secs. 101, 185, 68 Stat. 955, as amended (42 U.S.C. 2131, 2235), sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.13, 50.54(dd), and 50.103 also issued under sec. 108, 68 Stat. 939, as amended (42 U.S.C. 2138). Sections 50.23, 50.35, 50.55, and 50.56 also issued under sec. 185, 68 Stat. 955 (42 U.S.C. 2235). Sections 50.33a, 50.55a, and Appendix Q also issued under sec. 102, Pub. L. 91-190, 83 Stat. 853 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204, 88 Stat. 1245 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97-415, 96 Stat. 2073 (42 U.S.C. 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80-50.81 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Appendix F also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. Appendix K to Part 50 is amended by revising the introductory paragraph of I. A., "Sources of heat during the LOCA," to read as follows.

Appendix K to Part 50—ECCS Evaluation Models

I. Required and Acceptable Features of the Evaluation Models

A. Sources of heat during the LOCA. For the heat sources listed in paragraphs I. A. 1 to 4 of this appendix it must be assumed that the reactor has been operating continuously at a power level at least 1.02 times the licensed power level (to allow for instrumentation error), with the maximum peaking factor allowed by the technical specifications. An assumed power level lower than the level specified in this paragraph (but not less than the licensed power level) may be used provided the proposed alternative value has been

demonstrated to account for uncertainties due to power level instrumentation error. A range of power distribution shapes and peaking factors representing power distributions that may occur over the core lifetime must be studied. The selected combination of power distribution shape and peaking factor should be the one that results in the most severe calculated consequences for the spectrum of postulated breaks and single failures that are analyzed.

* * * * *

Dated at Rockville, Maryland, this 27th day of September, 1999.

For the Nuclear Regulatory Commission.

Kenneth R. Hart,

Acting, Secretary of the Commission.

[FR Doc. 99-25582 Filed 9-30-99; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 99-NM-22-AD]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to certain Boeing Model 747 series airplanes. This proposal would require repetitive inspections to detect discrepancies of the cables, fittings, and pulleys of the engine thrust control cable installation, and replacement, if necessary. This proposal would also require certain preventative actions on the engine thrust control cable installation for certain airplanes. This proposal is prompted by reports of failure of engine thrust control cables. The actions specified by the proposed AD are intended to prevent such failures, which could result in a severe asymmetric thrust condition during landing, and consequent reduced controllability of the airplane.

DATES: Comments must be received by November 15, 1999.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 99-NM-22-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056. Comments may be inspected at this location between 9:00 a.m. and 3:00