any distinction (in terms of safety implications) between the subject matter of hearings under this rule, as compared with other actions under Part 50 which would require formal hearings.

As discussed earlier in the supplementary information, previously performed research analyses indicated the potential for plastic deformation of the main coolant piping for a typical U.S. plant design and anticipated annealing conditions. There are also questions regarding how thermal growth of the pressure vessel is treated, and the adequacy of the thermal and stress analyses used to predict response of the overall system under thermal annealing conditions. Additionally, there may be questions in other areas such as temperature limits for the concrete structures, and potential radiological hazards associated with removing and storing the reactor internals during the annealing process, and fire hazards associated with heating the vessel.

Recognition of the numerous complex technical questions related to 4 thermal annealing and of the potential benefits for operating nuclear power plants has resulted in a cooperative effort, funded by the U.S. Department of Energy and the industry, to perform Annealing Demonstration Projects. Projects are planned to demonstrate two different annealing processes, evaluating heater designs and vessel designs. It is anticipated that the annealing demonstration projects will answer many of the generic questions regarding thermal annealing of U.S. pressure vessel and piping designs.

The Thermal Annealing Report, required by the thermal annealing rule, is designed to facilitate a detailed review by the licensee of plant-specific questions and considerations in performing a thermal annealing. The proposed rule specifically discusses the potential for unreviewed safety questions and technical specification changes that may result from or be related to thermal annealing of the reactor pressure vessel. With completion of the demonstration projects and as the staff and industry gain experience with thermal annealing, many of the issues related to annealing will be better understood and related questions will be answered. However, until this experience is realized, the staff will critically review licensee determinations regarding unreviewed safety questions and the need for technical specification changes associated with each proposed thermal annealing. The level of staff effort is expected to be significantly greater during its review of the initial proposed

vessel annealings than that which will be required after experience is gained.

The thermal annealing rule has been structured to provide time for the staff to thoroughly review the licensee's annealing plan and determination regarding unreviewed safety questions and the need for technical specification changes. If the staff identifies an unreviewed safety question or the need for a technical specification change, the licensee would be so notified and the existing NRC regulatory practices would be invoked to address the issues.

Backfitting Issues

Comments were received on backfitting issues from the Nuclear Utility Backfitting and Reform Group (NUBARG). NUBARG commented that they do not object to the new NRC position in Appendix G to 10 CFR Part 50 which prohibits core criticality before completion of hydrostatic pressure and leak tests as a conservative measure to enhance safety. However, they are concerned that amending Appendix G on the basis of a compliance exception may set a bad precedent for avoiding backfitting analyses. NUBARG stated that "The logic of the proposed rule would seem to allow the NRC to avoid a backfitting analysis by (1) invoking the intent of one requirement to override the explicit provisions of another, (2) using the compliance exception when the practice being eliminated seems specifically contemplated by and specified in the pertinent regulation, and (3) overlooking the fact that the NRC has apparently accepted this position in practice by some licensees * * *'' In NUBARG's view, this proposed amendment should be supported by a backfit analysis. The Commission has reviewed this comment and has concluded that use of the compliance exception under § 50.109 for the changes in Appendix G to 10 CFR Part 50 is appropriate. The Backfit Analysis section contains further discussion on this subject. The issue of explicitly prohibiting core criticality before completing pressure and leak tests has been addressed previously (letter from J. M. Taylor, EDO, to N. S. Reynolds and D. F. Stenger, NUBARG, dated February 2, 1990) and the NUBARG comment did not provide new information. The Commission has concluded that any backfit requirements in this amendment are necessary to bring the facilities into compliance with licenses, or the rules and orders of the Commission, or into conformance with written commitments by the licensees. Therefore, a backfit analysis is not required pursuant to 10 CFR 50.109(a)(4)(i).

NUBARG also commented on the amendment to Appendix H to 10 CFR Part 50 regarding surveillance that would preclude reducing the amount of testing if the initial test results agreed with predicted results. Although NUBARG recognizes the change would be prospective, it believes that NRC should provide flexibility to allow continued relief for any licensee who lacks such an authorization but has relied on the provision. The Commission believes that sufficient flexibility already exists in that licensees who do not have an authorization may seek an exemption under 10 CFR Part 50.12.

Another aspect of the backfitting concern raised by NUBARG addresses the proposed amendment to § 50.61 which, based on the adequate protection exception, would impose a uniform methodology for calculating the reference temperature. NUBARG contends that to rely on the adequate protection exception is arguably erroneous because the change in methodology is not likely an adequate protection issue (i.e., for most plants, the screening criteria will not be approached for many years). As discussed further under Backfit Analysis, the Commission believes that a new backfit analysis is not required for this conforming change, which corrects an inadvertent omission from the previous rulemaking. Therefore, the Commission concludes that the adequate protection basis for the backfit continues to apply from the previous rulemaking (56 FR 22300; May 15, 1991) to § 50.61.

Criminal Penalties

For purposes of Section 223 of the Atomic Energy Act (AEA), the Commission is issuing the final rule under one or more of Sections 161b, 161i or 161o of the AEA. Willful violations of the rule will be subject to criminal enforcement.

Finding of No Significant Environmental Impact

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

The individual actions covered in this final rule would either serve to enhance safety of the reactor pressure vessel, thereby decreasing the environmental impact of plant operation, or have no