

Union of Concerned Scientists
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October 27, 2009

DOCKETED
USNRC

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemakings and Adjudications Staff

October 28, 2009 (9:00am)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

**Union of Concerned Scientists Statement on
the Advanced Notice of Proposed Rulemaking (ANPR) on
Performance-Based Emergency Core Cooling System Acceptance Criteria
(RIN 3150-AH42)**

The Union of Concerned Scientists (UCS) commends the Nuclear Regulatory Commission (NRC) on its long-overdue action to fix a regulatory deficiency that in our view poses a significant risk to public health and safety. The plain fact of the matter is that the emergency core cooling system (ECCS) acceptance criteria in 10 CFR 50.46(b) are based on outdated technical information and assumptions that have long since proven to be incorrect. Therefore, the current rule does not provide adequate protection against fuel cladding embrittlement (and the potentially severe consequences of such embrittlement) during loss-of-coolant accidents (LOCAs). As a result, it is possible that some nuclear fuel cladding in U.S. reactors today would become embrittled in the event of a LOCA even if the ECCS acceptance criteria have been met, calling into question the safety of operating plants, such as North Anna.¹ UCS is not convinced by industry and NRC assertions that there is no current safety risk because such assertions would require validation through plant-specific analyses. However, according to a Westinghouse representative speaking at the 2009 NRC Regulatory Information Conference, reactor licensees have not done detailed plant-specific analyses to show that embrittlement of high-burnup fuel in operating reactor cores during a LOCA can be excluded.

NRC must move to remedy this regulatory defect as quickly as feasible to ensure that its regulations are grounded in the best and latest science. UCS requests that the comments on this ANPR be resolved on an expedited basis so that a draft rule can be issued for public comment without further delay. UCS does not agree with industry comments that further action on the rule should await additional testing. The substantial body of experimental data already obtained through the excellent test program of Argonne National Laboratory (and largely consistent with data obtained under similar conditions elsewhere) provides more than ample justification for immediate action on a rulemaking. To the extent that some questions remain unresolved with regard to this complex

¹ Ralph O. Meyer, Comments on ANPR 50, Appendix A, Question 1, October 5, 2009. Available at www.regulations.gov.

technical issue, the rule should be designed to provide a sufficient margin of safety to fully accommodate any uncertainties in the current experimental database.

UCS does not generally oppose the performance-based aspects of the conceptual approach to the rule presented in the ANPR (e.g. Objective 2). However, we stress that with regard to Approach B, in which applicants would have the opportunity to establish less restrictive ECCS criteria than those that would be provided in the rule, a very high standard must be met for the quality of the technical basis supporting such deviation requests, with regard to standardization of experimental protocols, reproducibility of results, and peer review.

With regard to the specific issues for consideration listed in the ANPR:

7. UCS strongly supports a breakaway oxidation testing requirement, with sample size and frequency chosen to ensure a very low likelihood of an increase in the probability of occurrence of breakaway oxidation.
12. UCS does not support staged implementation of the new rule.

Finally, UCS does not support NRC's plan to move forward with a "risk-informed" revision to 10 CFR §50.46(a) before the §50.46(b) rulemaking is completed. It does not make sense to us that a rule change that could potentially lead to large reductions in LOCA safety margins be developed until the magnitudes of the safety margins to ECCS failure are better understood and quantified.

Sincerely,

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Rulemaking Comments

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Sent: Tuesday, October 27, 2009 7:13 PM
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Subject: UCS Comments on RIN 3150-AH42
Attachments: anpr-eccs-comments-ucs.pdf

On behalf of the Union of Concerned Scientists, I am pleased to submit the attached comments on the Advanced Notice of Proposed Rulemaking, RIN 3150-AH42, published in the Federal Register on August 13, 2009.

Sincerely,

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