

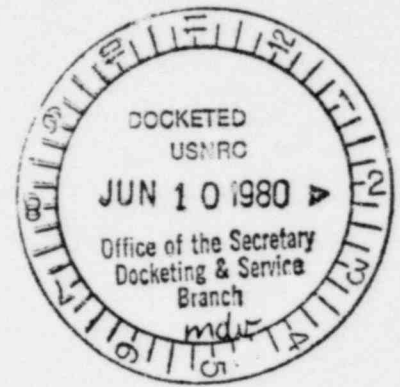
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University of Pittsburgh

SCHOOL OF ENGINEERING
Department of Metallurgical and Materials Engineering

June 4, 1980



DOCKET NUMBER
PROPOSED RULE PRM-51-6 (2)
(45 FR 25557)

Mr. Samuel J. Chilk
Secretary of the Commission
Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Docket and Service Branch

Dear Sir:

I wish to comment on Docket No. PRM-51-6, a petition submitted by Catherine Quigg requesting the NRC to amend 10 CFR Part 51 "Licensing and Regulatory Policy and Procedures for Environmental Protection" to require the preparation of a generic environmental statement for high burnup nuclear fuel as used in commercial nuclear reactors, stored in spent fuel pools or cooling racks or potentially as processed in reprocessing plants or disposed of in permanent sites.

I have read the petition of Catherine Quigg and I agree with her five specific comments relating to potential significant generic impacts of high burn-up fuel on the human environments. I agree with Catherine Quigg that an Environmental Impact Statement be prepared so as to alert the public to the increased environmental hazards. Increased fuel burnup to 5,000 MWD/MTU from 38,000 MWD/MTU would lead to increased oxidation of the Zircaloy cladding, to increased hydride formation in the cladding, to decreased ductility and strength of the cladding and to potentially more failed fuel rods. This would in turn lead to more emission of inert gases such as Ar⁸⁵ and to increased liquid effluents including tritium and mixed fission and activation products. The effect of increased fuel burnup leads to additional problems in the short and long period storage of spent fuel assemblies at the reactor site and off site storage.

Before increasing the burnup of nuclear fuel assemblies test programs should be developed in reactors at remote sites to evaluate cladding and fuel damage and the emission of airborne and liquid effluents.

With the present design of both boiling water and pressurized water reactors our environment is suffering from radiological contamination. See the increased Cs¹³⁷ and Sr⁹⁰ levels in goats' and cows' milk as shown in the Annual Environmental Operating Report Part B for the period 1/1/1976 to December 31, 1976, for the Millstone Reactors prepared for the Northeast Nuclear Energy Company of Hartford, Conn., by the Northeast Utilities Science Company of Berlin, Conn. Important increases in Sr⁹⁰ and Cs¹³⁷ are noted for the downwind stations 20, 21 and 22 compared with the upwind station 23a.

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The Millstone reactors in New London, Conn. are small reactors (Millstone 1 is 657 MWE) compared to the 1300 MWE reactors now being constructed.

Again I want to emphasize my concern for the programs now being undertaken to increase fuel burnup without giving the public an Environmental Impact Statement.

Very truly yours,



Earl A. Gulbransen
Research Professor

/ps
cc: Ms. Catherine Quigg