



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NSIC

February 25, 1980

Docket No. 50-309

Mr. Robert H. Groce  
Senior Engineer - Licensing  
Maine Yankee Atomic Power Company  
25 Research Drive  
Westboro, Massachusetts 01581

Dear Mr. Groce:

During the last several years, data have begun to indicate that the fission gas release rate from LWR fuel pellets is increased (enhanced) with burnup. Many of the current fuel performance analyses do not consider the impact of burnup-enhanced release on safety. By letters dated November 23, 1976, the NRC staff requested all LWR licensees to assess the higher fission gas release for fuel burnups above 20,000 Megawatt-day per metric ton (MWD/t).

Also, by NRC staff letter dated January 18, 1978, all U. S. LWR fuel suppliers were requested to revise their fuel performance analyses to include the enhancement of fission gas release at higher burnups.

All responses to the November 23, 1976 letters have been reviewed. We have concluded that no immediate licensing action is required for operating reactors. This conclusion is valid for typical reported LWR fuel bundle and batch burnups. Any extension of these burnups or other factors which significantly affect fission gas release, LOCA PCT or fuel rod internal pressure is outside the scope of the conclusion.

The responses concerning Combustion Engineering (CE) and Exxon PWR fuel bundles demonstrated that neither was there an adverse effect on the ECCS evaluations nor did the internal fuel rod pressure exceed system pressure. Therefore, no immediate licensing action is necessary on CE or Exxon fueled PWRs.

Inasmuch as you and/or the staff will be evaluating all future reloads using fuel vendors' revised fuel performance codes which acceptably provide for an increase in fission gas release at higher burnups, we consider this a satisfactory resolution of this concern.

Sincerely,

Robert W. Reid, Chief  
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cc: See next page

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