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April 8, 1993

Mr. James Wilson, Project 669
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: **Passive Autocatalytic Recombiners for Combustible Gas Control in ALWRs**

Enclosed is a report titled "Qualification of Passive Autocatalytic Recombiners (PARs) for Combustible Gas Control in ALWR Containments." This report is in support of planned changes in the Utility Requirements Document (URD) to require such devices for combustible gas control inside ALWR containments. Based on our investigations to date, we are confident that PARs will be effective in controlling the buildup of combustible gas generated by core-damaging accidents. These devices can be demonstrated to meet regulatory requirements for Licensing Design Basis Events and, using more realistic analyses, for emergency planning requirements as well. The URD changes necessary to make use of these devices is in our draft and review process and are expected to be submitted by the end of April.

While the primary purpose of this report is to support the upcoming URD changes, a major secondary purpose is to provide the Certification Applicants or designers with an early indication that adoption of this new technology would not adversely affect their review schedules. Full qualification of PARs like the ones described in this report will necessarily rest with the Certification Applicants. Nevertheless, the designers need some form of feedback from the NRC before they can be expected to abandon their current approaches to combustible gas control. It is that feedback that we ask for on a very tight schedule - ideally in a matter of a couple months from now.

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Please note that our conclusions in this matter are based, to some degree, on information obtained from proprietary work done in Germany. While we are not at liberty to reproduce and distribute the material, arrangements can be made for NRC review if you desire.

The ALWR Program believes the PAR technology offers considerable safety advantages in simplicity as well as margin. We hope the NRC review of this report will endorse that belief and will agree with us that the work done in Germany is sufficient to allow U.S. designers to integrate the PAR approach to combustible gas control into their designs with minimum schedule risk.

Very truly yours,

J. C. DeVine, Jr.
Senior Program Manager (Acting)

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encl: "Qualification of Passive Autocatalytic Recombiners (PARs) for Combustible Gas Control in ALWR Containments", April 7, 1993

cc: E. E. Kintner
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