



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

February 22, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Byron Generating Station Units 1 and 2
Braidwood Generating Station Units 1 and 2
Hydrogren Recombiners
NRC Docket Nos. 50-454, 50-455, 50-456,
and 50-457

Dear Mr. Denton:

This letter provides additional information regarding the design of hydrogen recombiners at Byron and Braidwood stations as described in Section 6.2.5 of the Byron SER.

As indicated on the attached diagram, there are two hydrogen recombiners permanently installed at each station. Though cross-ties, either recombinder may be used on either unit. The suction and discharge valve operators are powered from opposite division Class 1E power supplies. They are not powered from a common power supply because certain single failures in that configuration could compromise recombinder system effectiveness.

The present electrical division assignments prevent backflow through a failed recombinder. As presently arranged, both hydrogen recombiners operate in parallel, utilizing the same suction and exhaust piping for each containment. With a Class 1E power supply failure, sufficient redundancy exists to operate at least one recombinder at design capacity. If each recombinder and its suction and discharge valves were powered from the same supply, a single failure of either Class 1E power supply could prevent isolation of the associated recombinder piping circuit. Flow from the redundant recombinder would follow the path of least resistance and backflow through the failed recombinder. The design flow rate of air from the containment would not be achieved.

Please address further questions regarding this matter to this office.

One signed original and fifteen copies of this letter and the diagrams are provided for NRC review.

Very truly yours,

T. R. Tramm
Nuclear Licensing Administrator

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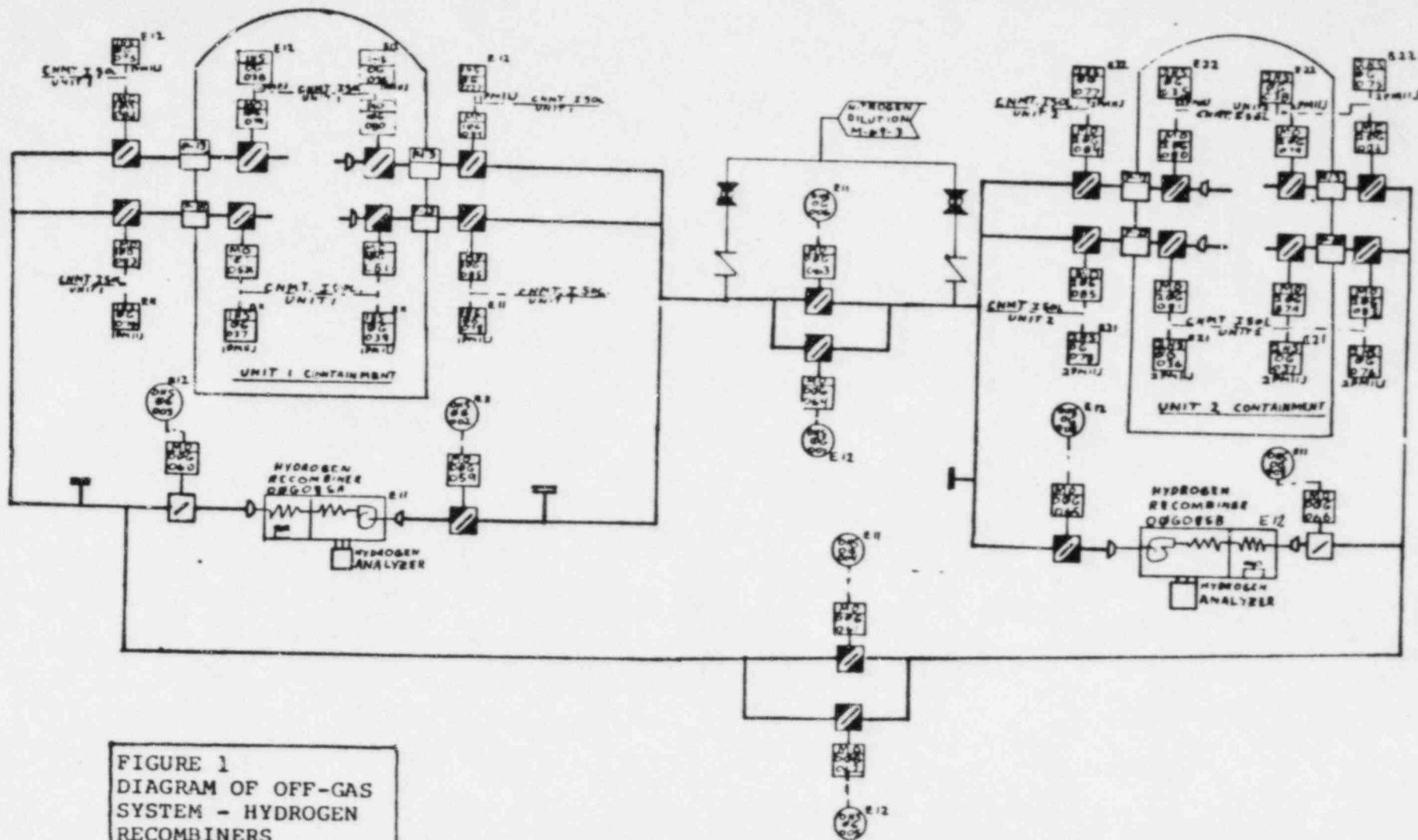


FIGURE 1
 DIAGRAM OF OFF-GAS
 SYSTEM - HYDROGEN
 RECOMBINERS
 DC - OG - 01 - BB
 Revision 5
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