DEPARTMENT OF PHYSICS
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UNIVERSITY OF ARKANSAS · College of Arts and Sciences

June 6, 1979

Mr. Harold R. Denton
Director, Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20555

Dear Mr. Denton;

I am a member of a Task Force appointed by the Governor of Arkansas, the Honorable Bill Clinton, to study the accident at Three Mile Island and to consider its consequences to the state because of the operation of Arkansas Nuclear One, Unit One, a reactor of similar design. The purpose of this letter is to request that special attention and review be given to the response of the licensee, Arkansas Power and Light Company, to item 6 in IE Bulletin 79-05 dated April 1, 1979:

> "Review your operating modes and procedures for all systems designed to transfer potentially radioactive gases and liquids out of the containment to assure undesired pumping of radioactive liquids and gases will not occur inadvertently."

On April 11, Mr. David C. Trimble, AP&L responded: "The drain line from the ANO-1 Reactor Building Sump to the Reactor Auxiliary Building Sump is a normally closed gravity flow line which does not use a pump and requires manual operation to transfer liquids." He explains that there are two valves on the line receiving safety-grade power and a Reactor Building Isolation signal. In a letter of April 16, Mr. Trimble explains that not later than the next fuel outage, these valves will be provided with signals to isolate on low RCS pressure. Finally Mr. Trimble states that "procedure modifications will be made to verify termination of any manual draining operation in the event of an accident."

My concern with this drain design is caused by the feature "gravity flow." The containment building is, of course, the last line of defense against exposure of the public to radiation. It would seem to me that this defense would be much stronger if the gravity flow line were not present. A drain line with outlet above the level of water in the sump in the worst case and fitted with the two valves with all the safety features now present and to-be-fitted at ANO-1

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would appear to be much safer. The necessity of lifting the water out of the sump would make it much less likely that a transfer happen inadvertently. Of course, the pump to do this must not be started automatically.

I request that the staff give special attention to the design of the sump drain at ANO-1 with consideration given to changes for improved safety.

Sincerely yours,

C B Richardson

C. B. Richardson, Professor

CBR/bkd

cc: Mr. David C. Trimble, AP&L

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