



UNIVERSITY OF MARYLAND AT COLLEGE PARK

NUCLEAR ENGINEERING
MATERIALS AND NUCLEAR ENGINEERING

May 8, 1991

Mr. Alexander Adams, Jr.
U.S. Nuclear Regulatory Commission
PDNP
M.S. 11-B-20
Washington, D.C. 20555

Dear Al:

Re: Lowering of the Fuel Temperature Setpoint on the MUTR - DOCKET
50-166.

The purpose of this letter is to document the essence of a telephone conversation I had with you on May 1, 1991. We are in the process of installing a new fuel temperature meter system which will lead to an increase in reactor safety. During a discussion at the recent Reactor Safety Committee (RSC) meeting concerning the implementation of the new meter, operational aspects of the present meter were reviewed. We have known for a number of years that the fuel meter reads the actual temperature less the control room air temperature. Therefore, when the fuel temperature scram setpoint is set at 400° C, it is less conservative than the LSSS of 400° C by the difference of room temperature. Therefore to correct for this deficiency, the RSC instructed me to lower the setpoint to 350° C to cover all possible room temperatures. The RSC also instructed to inform you of this decision before I implemented it. In our telephone conversation you indicated that this was an acceptable way of resolving the problem. Also you indicated that previous operations would not constitute operational occurrences because of the wording of the Technical Specifications (T.S.). The T.S. wording is that "The limiting safety system setting shall be 400° C as measured by the instrumented fuel element." The point is that the instrumented fuel element reads low by the amount of room temperature.

It should be pointed out that the new fuel temperature meter will not suffer from this problem because it will have an electronic cold junction built into it, and it will be fail safe. That is, if it fails, the reactor will scram automatically. The RSC will of course completely review the meter system before it is installed.

Also it should be mentioned that at no time during the past years

of operation was there a safety problem due to the fuel temperature meter measurement bias. The actual fuel temperature at full power as measured by one of the spare fuel thermocouples connected to the Data Acquisition System is about 150° C. Therefore, regardless of the setpoint, it is physically impossible for the instrumented fuel rod to reach a temperature of 400° C.

Sincerely yours,



David D. Ebert,
Reactor Director

xc: Dr. Joseph Silverman, Chairman, Reactor Safety Committee
Dr. Frank J. Munno, Professor and SRO, N.E. Program
Mr. Thomas F. Dragoun, NRC Region I Project Scientist
RSC File