

October 24, 1980

Dr. Fuat Odar
Reactor Safety Research Division
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Fuat,

This is to request additional funds for the calculations for Anticipated Transients Without Scram (ATWS) which are being performed by Brookhaven National Laboratory and by Battelle Columbus Laboratory, under contract to BNL.

1. Boiling Water Reactor Calculations

The BWR calculations are being performed by Brookhaven National Laboratory. The results obtained to date have modeled the system without high pressure coolant injection (HPCI).

In boiling water reactors the high pressure coolant injection is turned on and off according to the fluid level in the downcomer. We do not have experience that can verify the accuracy of the level calculation in the RELAP3B code or in similar codes. In the absence of a verified level calculation, it was decided to omit the HPCI from the ATWS calculations for BWRs. Later work on calculation of partial scram transients has, however, pointed up the importance of HPCI, especially for suppression pool temperatures. In order to assess the magnitude of the effect of HPCI -- even though the accuracy of the level calculations may still be unverified -- it now appears desirable to repeat the ATWS calculations with HPCI included.

The added costs for extending the calculations to include HPCI are as follows:

Manpower (Two persons, one month)	\$15,000
Computer time	<u>5,000</u>
TOTAL	20,000

004502

Page 2
Fuat Odar
October 24, 1980

This work can be completed and reported with one calendar month after it is authorized to start.

2. Pressurized Water Reactor Calculations

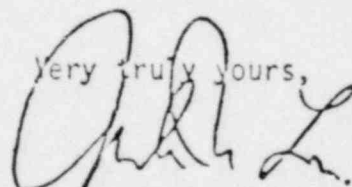
The PWR ATMS calculations are being performed by Battelle Columbus under contract to BNL. Additional funds will be required to cover a cost overrun due to additional efforts not envisioned when the current agreement was established. These include staff time and computer communications costs associated with C-E reactivity input modifications, modifications to RELAP3B required for C-E LCOFW calculations above 5000 psia, modifications to RELAP3B to produce steady initial conditions for the BWR plant design, additional review of shutdown capability of boron injection, and modification to plotting routines requested by NRC. In addition, significant travel beyond that originally planned has been required for project review meetings.

BNL estimates that these costs are :

BCL Manpower	\$55,000
BNL Manpower	<u>10,000</u>
TOTAL	\$65,000

These additional funds are required to avoid termination of the BCL contract. The total cost of these revisions is \$80,000. There is approximately \$10,000 remaining unspent in this account. Hence the additional funding requested here is \$75,000.

If you have any questions about this material, we will be glad to add further information.

Very truly yours,


Melvin M. Levine
Associate Chairman

MML/as
CC: W. Y. Kato
A. J. Romano
W. G. Shier
T. Speis - NRC