MEMORANDUM
6 Dec 1982

TO: Paul Boehnert

FROM: Ivan Catton

SUBJECT: ECCS Subcommittee Meeting, 2-3 Dec 1982, San Jose

I was very pleased to see GE developing a best estimate model for licensing. I believe that the Appendix K EM approach should be done away with as soon as possible. We can all cite situations where its use has lead to less than optimal operations and even to some that are detrimental to safety equipment. I would like to see GE encouraged. I do not, however, believe that the decay heat relief they are looking for should be granted. Decay heat is the forcing function. If the result is too conservative, then the thermal hydraulics should be improved first. Several topics that arose at the subcommittee meeting that need further in depth review follow.

Topic 1: CCFL at the side entry orifice and the leakage pathes between the bypass and the core play a very important role in how well the core is being coded. GE should describe their experimental studies, resulting correlations and how the results are implemented in their codes. CCFL at the tie plate, although of apparent lesser importance, should be described as well. Subcooling plays a role in breakdown at the outer channels and should receive some attention.

Topic 2: Nodalization of the primary system for modeling is an art. Establishing whether or not a code can be used for predictions usually involves selection of a nodalization scheme. If a similar scheme is not used for reactor system calculations then an assessed code is not being used. Nodalization of all aspects of the SAFER and TRAC-BWR models of a BWR need to be addressed.

Topic 3: The number of bundles needed to properly model a BWR core is an open question. The Lynn facility tests clearly show a need for more than one as do early results from TRAC-BWR calculations. It is my view that at least three are needed: cold channel, average channel and a hot channel. Arguments should be heard as to why one average channel and a separate hot channel calculation are enough.

Topic 4: A number of phenomena ranging from breakflow to jet pump entrainment from the lower plenum during reverse flow as well as CCFL mentioned earlier need to be described my the models in the code. The models must be tested against separate effects tests before comparisons with data from an integral facility such as FIST can be considered more than accidental. The structure of the GE program should be discussed and the various separate effects programs described along with the models they support.