Monthly Highlights

for

August 1984

Application of RAMONA-3B to BWR ATWS*
(FIN A-3273)

P. Saha, Group Leader
LWR Code Assessment and Application Group
Department of Nuclear Energy
Brookhaven National Laboratory
Upton, New York 11973

* Work performed under the auspices of the U.S. Nuclear Regulatory Commission.

8507270181 850611
PDR FOIA
SHOLLY85-369 PDR

Application of RAMONA-3B to BWR ATWS

This project provides detailed, best-estimate, BWR ATWS analyses for the NRC Severe Accident Sequence Analysis (SASA) Program. In particular, several Browns Ferry Unit 1 MSIV closure ATWS analyses are being performed using the RAMONA-3B code with three-dimensional neutron kinetics. These calculations will not only improve understanding of the BWR behavior during an ATWS, but they can also be used for benchmarking similar calculations performed elsewhere by using the point kinetics codes such as RELAP5 and BWR-LACP.

The major activities performed during August 1984 are noted below.

1. Generation of Browns Ferry Cycle 5 Nuclear Data
(G. C. Slovik and E. Cazzoli)

As previously reported, examination of the 13 cross section sets generated by the BLEND code showed inconsistencies traceable to the interpolation/extrapolation methodology used in the code. The algorithms for computing the Doppler, moderator, and void feedback coefficients have been replaced and tested, and all 13 cross section sets have been regenerated.

Re-evaluation of the new cross section sets is still in progress. Work has also begun to prepare a RAMONA-3B input deck with the new nuclear data.

2. Browns Ferry MSIV Closure ATWS Calculation
(L. Neymotin and E. Cazzoli)

Sensitivity studies of condensation on the HPCI and RCIC water jets have shown that the core inlet subcooling can vary significantly depending on the HPCI/RCIC and core exit water flow rates. The bounding evaluations (with and without condensation) will be done when the Browns Ferry Cycle 5 calculations are started.