



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 17 1980

MEMORANDUM FOR: John T. Larkins, Chief
Program Coordination Branch
Administration and Resource Control Staff
Office of Nuclear Reactor Research

FROM: George W. Knighton, Chief
Research and Standards Coordination Branch
Division of Safety Technology
Office of Nuclear Reactor Regulation

SUBJECT: RESEARCH RESULTS UTILIZATION FORM

I am forwarding herewith the Research Results Utilization Form
for RIL No. 91, "ACPR Experiments on Prompt-Burst
Energetics with Fresh Uranium Carbide Fuel."

George W. Knighton, Chief
Research and Standards Coordination Branch
Division of Safety Technology

Enclosure
As Stated

- cc: H. R. Denton
- D. Ross
- D. Eisenhut
- R. Vollmer
- S. Hanauer
- F. Schroeder
- T. Murley
- F. Arsenault
- R. Bernero
- H. Thompson
- J. F. Meyer
- P. W. Williams

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OFFICIAL PROGRAM OFFICE CONSENSUS ON UTILIZATION OR VALUE OF BIL TO THE REGULATORY PROCESS

BIL # 91 DATE ISSUED: 6/3/80 REG: ACPR Accident Energetic REG. CHAIRPERSON: R. W. Wright
BIL TITLE: ACPR Experiments on Prompt-Burst Energetics with Fresh Uranium Carbide Fuel
PROGRAM OFFICE: RES CONTACT NAME: R. W. Wright DATE: 8/21/80

DESCRIBE APPLICATION TO REGULATORY PROCESS:

The program was initiated when the licensing of a liquid metal fast breeder reactor (LMFBR) appeared imminent. The experiments have confirmed a hypothesis that molten-fuel-coolant interactions would be most likely and more energetic with carbide fuel than with oxide fuel. This work therefore provides a helpful data point should the NRC again actively consider licensing of an LMFBR.

DESCRIBE IMPACT OF RESULTS:

The ^{research} hypothesis appears to have verified a long standing concern. No further research is expected in the absence of a positive LMFBR program, especially a carbide fueled LMFBR. The data and results will be expected to be considered during the safety review of the FFTF program by NRR.

closed-loop subassembly

COMMENTS/REMARKS:

Beyond the basic conclusion that carbide fuels yield greater energetics in core-melt accidents, care is recommended to avoid reading too much into the results of these limited experiments. *The research results do not need to be considered for Board notification.*

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