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FROM: Homer Lowenberg, Chief Engineer  
Office of Nuclear Material  
Safety and Safeguards

SUBJECT: CRBR FUEL CYCLE ENVIRONMENTAL REVIEW - UP-TO-DATE ORIGEN  
CALCULATIONS OF CRBR SPENT FUEL RADIONUCLIDES

Recent information from Westinghouse representatives, the DOE contractor on the CRBR project indicates that the DOE environmental report is based upon data from the use of the "original Origen" code circa 1973 with decay times limited to three years. It is judged by NRC staff knowledgeable in this area, that data developed in this manner may be significantly flawed for assessment of fuel cycle, transportation and waste management effects of the CRBR.

Accordingly, efforts have been initiated to have ORNL personnel, who have done work in this area, develop the radionuclide data base from CRBR spent fuel using Origen 2 and to compare this data base with similar data for LWR's, the FFTF and generic LMFBR's. This work will be similar to report ORNL/TM-8061.

Based upon ORNL estimates, \$25,000 has been obtained by reprogramming resources and will be added to FIN 8-0009 at ORNL to cover this added scope of work. Mr. A. G. Croff will be the project manager at ORNL. He will be obtaining the fuel and blanket descriptions, compositions and irradiation exposures from Henry Piper of the Westinghouse Oak Ridge residence office staff and will start to work to develop the input data for the Origen 2 calculations. Mr. Croff projects that the data base will be available about the end of March with plots of the radioactivity, toxicity and heat generation about 2 weeks later and a draft report in mid-May. He will draft a statement of work that we can use to add to the existing scope of work for FIN 8-0009 to include this CRBR Fuel Cycle effort to the present work at ORNL under this FIN. The writer will be the project manager for this work. The PPSAS designation will be 11125 TAC #2523.

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cc: Iral C. Nelson, BPNL

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