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MEMORANDUM FOR: Frederick C. Combs, Chief
Operations Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: Margaret V. Federline, Chief
Hydrology and Systems Performance Branch
Division of High-Level Waste Management, NMSS

SUBJECT: USAGE OF DOSE ASSESSMENT SOFTWARE BY HLHP

This memorandum is the response to your request of February 18, 1993, for information on health physics related software currently used by HLHP for dose assessment. Do you plan to publish the results of this survey? If so, we would be interested in these results.

1. Only one computer code is in current use, it is called DITTY, Dose Integrated for Ten Thousand Years.

2. The DITTY program has been incorporated as a part of a larger program called GENII (DITTY and GENII share common databases). However, the DITTY code can be operated separately from the GENII code if the proper databases and execution files are extracted from GENII. The version of GENII in current use by HLHP on the CRAY computer at INEL is Version 1.490, dated August 9, 1991.

3. DITTY, a part of the Iterative Performance Assessment studies conducted jointly by NMSS, RES, and CNWRA, and coordinated by HLHP, is used to assess the lifetime collective effective doses to each of 144 regional populations over a period of 10,000 years. These exposures occur as the result of releases of airborne and/or waterborne radionuclides from a hypothetical geologic (underground) repository into the surrounding geosphere. The nuclides are then considered to be transported from the geosphere into a number of terrestrial pathways in the biosphere.

4. The source program and an executable module were both obtained from Dr. Bruce Napier, Environmental Health Physics Group, Occupational and Environmental Health Protection Section, Health Physics Department, Battelle Pacific Northwest Laboratories, Battelle Boulevard, P.O. Box 999, Richland, Washington 99352.

Please contact R. B. Neel, 504-2248, a member of my HLHP staff, if you require further information.

/S/
Margaret V. Federline, Chief
Hydrology and Systems Performance Branch
Division of High-Level Waste Management, NMSS

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