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ROCKY MOUNTAIN ENERGY COMPANY

July 14, 1980

Mr. J. E. Rothfleisch
U.S. Nuclear Regulatory Commission
Uranium Recovery Licensing Branch
Willste Building
7915 Eastern Avenue
Silver Springs, MD 20910

Dear Mr. Rothfleisch:

Re: Docket No. 40-8721
Nine Mile Lake Commercial Source Material License

Enclosed are copies of the recently completed preliminary alternative analysis regarding solid waste disposal options at Nine Mile Lake. Please note that this is a preliminary version of the material which will be included in the revised Environmental Report. Pursuant to our recent conversation concerning the format for the revised Environmental Report, the alternative analysis will be split out in the forthcoming submittal. All the information pertaining to the acid process will be incorporated in the revised Environmental Report while the analysis of carbonate waste disposal options will be included in an addendum to the Environmental Report.

A note concerning the scope and basis of the discussion presented herein is appropriate. The alternates have been evaluated on the basis of environmental impact, human exposure to process wastes, engineering feasibility, responsible energy utilization, and economics. The revised Environmental Report will also include a reservoir seepage analysis which is currently being done.

The various process waste disposal reservoirs designed for the acid lixiviant are based on pilot plant restoration experience which assumes that 1/2 the leaching pore volumes will be required for restoration. Conservative average solid effluent rates were assumed to calculate the volume occupied by the process waste residue at the termination of the project, thus presenting a worst case impact.

It is important to note that carbonate leaching has only recently begun at Nine Mile Lake; therefore, there is no Nine Mile Lake restoration data on which to base the carbonate disposal reservoir. The carbonate lixiviant disposal reservoir has consequently been sized on the basis of other existing in situ leaching operations restoration data indicating that restoration

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is accomplished with 1/4 as many pore volumes as leaching. Any significant deviation from this criteria that might be observed during restoration of the carbonate pattern at Nine Mile Lake will be noted and then used to modify the carbonate base case and alternatives accordingly. Any such revision would be described in the carbonate lixiviant demonstrated restoration report.

We believe that a strong argument can be made in defense of the two base case scenarios which are the preferred disposal mechanisms. Both the carbonate and acid base case descriptions specify in-place, on-site disposal of solid waste material. Considering the subsoil conditions of the reservoir site and the nature of the compacted clay liner, there would be minimal probability of long term adverse environmental impact from on-site disposal.

A distinct advantage of the base case disposal system would be the elimination of any possibility of public exposure to radioactive waste material which might result from the transport of the waste material through populated areas, should off-site disposal be required. Because off-site disposal could involve more than 5,000,000 haul truck miles through the cities of Casper and Glenrock, a potential health hazard resulting from an accident or spill would be a very real possibility. Unnecessary energy consumption, in the form of fuel required to transport the waste material, which could require up to 1,000,000 gallons of diesel fuel, would also be eliminated. This would represent a substantial energy savings. Both of these factors are discussed in detail in Section II.8.3.2 of the alternative analysis.

Of primary importance to the consideration of all the waste disposal options is the question of economic feasibility. The off-site disposal alternatives would add substantially to the future costs of Nine Mile Lake production due to the length of the haul, quantity of material to be transported and special safety and environmental procedures which may be required to mitigate or minimize the affects of accidents during transportation.

Given the current status of the uranium market, every justifiable attempt to minimize production costs must be made while ensuring that protection of the environment and public safety are strictly provided for. The commercialization and future operation of Nine Mile Lake could well be jeopardized by increasing costs, particularly those for waste disposal. The first effect of higher production costs would be to reduce the future life of the project since only the higher ore grades could be mined economically. Lower grade, marginal future reserves would not be mined resulting in a permanent loss of energy reserves. It is therefore essential that we, the NRC and other regulatory agencies strive to develop responsive, economical, effective waste disposal plans.

It should also be emphasized that all off-site disposal alternatives assume that there will be an NRC approved permanent waste disposal site available at the time of project decommissioning. There is no guarantee that this will be the case or that such a site would be located close enough to Nine Mile Lake to make off-site disposal a viable option.

Concurrent with this submittal to you, five copies of the alternative analysis are also being sent to Dr. Minton Kelley at Oak Ridge National Laboratory. This information is intended to facilitate your joint review of the commercial scale Nine Mile Lake operation. Should you have any quesrions, please contact me or Rick Iwanicki at our Denver office.

Sincerely,

Michael R. Neumann

M. R. Neumann
Field Environmental Coordinator

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Enclosures

cc: Dr. Minton Kelley (ORNL)
A. V. Mitterer
P. J. Bosse
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