

To: U.S. Nuclear Regulatory Commission

Department of Energy  
Washington, DC

DOCKET NUMBER

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PETITION FILE PRM 60-2A

3

CSOFR 51700

RE: HIGH LEVEL RADIOACTIVE WASTE DUMP ANYWHERE IN MINNESOTA

NO!

DOCKETED

How can you even consider Minnesota as a potential site for a nuclear  
wastedump? There are MANY, MANY, MANY unanswered questions and no  
guaranteed answers.

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We have the headwaters of the three major water systems of North  
America in our state. The Mississippi River of the Great Lakes, and  
the Red River Valley all start in northwest Minnesota. It would be a  
waste of money studying potential nuclear storage sites in the land  
of 10,000 lakes--MINNESOTA.

You believe that Minnesota may have crystalline rock formations, such  
as granite and gneiss, that can safely isolate highly radioactive  
nuclear wastes for 10,000 years or more. HOWEVER, THERE ARE SPECIFIC  
PROBLEMS WITH CRYSTALLINE BEDROCK IN MINNESOTA:

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(1) HYDROLOGY. Minnesota's abundant ground water could carry radio-  
nuclides over great distances. Minnesota's high water table guarantees  
that the repository will be in the saturated zone and will flood after  
it has been backfilled and "permanently sealed". The behavior of  
ground water at the depth of a repository will be extremely difficult  
for DOE to predict. CRYSTALLINE ROCK IS NOT IMPERMEABLE. JOINTS,  
SHEAR ZONES AND OTHER FRACTURING COULD ACT AS CHANNELS FOR CONTAMINATED  
GROUND WATER TO MOVE THROUGH THE ROCK.

(2) GEOCHEMISTRY. The ability of the minerals in crystalline rocks to  
absorb or trap radionuclides is comparatively low. Minerals, especially  
secondary minerals formed in low temperatures after the rock cooled,  
could respond adversely to the heat and radiation by releasing water,  
dissolving and changing structure. This could result in larger ground  
water pathways and more rapid ground water movement.

(3) THERMOMECHANICS. The waste from a full repository (70,000 metric  
tons or more) is expected to release up to 8 billion watts of heat in  
the first 1000 years. HEAT FROM THE WASTE COULD CAUSE ADDITIONAL  
FRACTURING IN THE ROCK AND ENLARGE EXISTING FRACTURES. THE HEAT MAY  
ALSO AFFECT THE WATER BUOYANCE AND DRIVE THE GROUND WATER TOWARD THE  
SURFACE.

(4) ROCK MECHANICS. Unpredictable joints, shear zones and other  
fracturing complicate the mining process. Also, ground water pressure  
and flow enhances these complications.

(5) GLACIAL OVERBURDEN. Most of the crystalline bedrock in Minnesota  
is blanketed with glacial overburden, ranging in depth from a few feet  
in the northeastern part of the state to over 700 feet in western  
Minnesota. DOE continues to consider these deeply buried rock bodies,  
yet they readily admit that, "LARGE EXPANSIONS OF OVERBURDEN WILL MASK  
BEDROCK CHARACTERISTICS AND RESULT IN MISCONCEPTIONS ABOUT THE PETROLOGY,  
STRUCTURE, SHAPE, SIZE, TECTONIC HISTORY, HYDROLOGY, AND GEOCHEMISTRY  
OF A POTENTIAL HOST ROCK BODY" (DOE, 1985a, p. 3.2)

add John Phelps to file

guaranteed SAFETY of our human and  
natural resources should have TOP priority continued...  
Cost should NOT Be a Factor.

NO chances should be taken whatsoever!

PH

(6) MINERAL RESOURCES. Minnesota probably has significant and largely unexplored strategic mineral resources in or near some of the crystalline rocks under consideration. DOE siting criteria state that "siting a repository near a known strategic or unique mineral resource poses a potential concern in that the repository may actually preempt future use of the resource" (DOE, 1985b, p. 96.)

MANY QUESTIONS REMAIN REGARDING THE SAFETY OF DISPOSING HIGH-LEVEL RADIOACTIVE WASTE IN MINNESOTA'S CRYSTALLINE BEDROCK. THESE QUESTIONS MUST BE ANSWERED.

WE ARE NOT CONVINCED THAT PERMANENT IRRETRIEVABLE BURIAL OF HIGH-LEVEL WASTE AT THIS TIME IS IN ANYONE'S BEST INTEREST. WE THINK INSTEAD THAT A PROGRAM OF LONG-TERM STORAGE (for example--above ground that could be monitored) WOULD BUY THE TIME NECESSARY TO FIND A CREDIBLE WAY OF PROTECTING OUR CHILDREN, GRANDCHILDREN AND GREAT-GRANDCHILDREN FROM THESE VERY DANGEROUS WASTES.

In summary, Minnesota is concerned for our ground water and surface water resources, the inability to ever monitor or retrieve the waste after permanent closure of the repository, and the federal government's emphasis on finding only a licensable site, NOT THE SAFEST ONE.

We recognize the need for a solution to the nuclear waste problem, but we believe there are alternatives that provide a greater margin of safety and less environmental risk. There has to be a safer alternative than below-ground storage--COST SHOULD NOT BE A FACTOR.

The health and lives of millions of people will be affected for THOUSANDS of years--DON'T MAKE SUCH A TERRIBLE MISTAKE AS A HIGH-LEVEL DISPOSAL SITE IN MINNESOTA.

If you, the Department of Energy, think this type of radioactive waste dump is so safe for you, your children, your grandchildren, your great-grandchildren, put it in or close to Washington, DC--in other words, IN YOUR OWN BACKYARD!!!!

WE DO NOT WANT A HIGH-LEVEL RADIOACTIVE NUCLEAR WASTE DUMP IN MINNESOTA

AND DON'T FORGET IT!!!!!!!!!!!!!!

Sincerely,

*Mr. & Mrs. Joe M. Niehaus & Family*

Mr. & Mrs. Joe M. Niehaus - Family  
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Mr. & Mrs. Norbert Johnson - Family  
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*Mr. & Mrs. Norbert Johnson & Family*

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Sept 30, 1986

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**REMARKS**

ENCLOSED ARE THE COMMENTS RECEIVED IN RESPONSE TO PRM 60-2A.

WM Record File  
105.3

WM Project \_\_\_\_\_

Docket No. \_\_\_\_\_

PDR \_\_\_\_\_

LPDR \_\_\_\_\_

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