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THE NORTH AMERICAN COAL CORPORATION

SOUTHWESTERN DIVISION

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OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

July 5, 1985

Mr. Harold Denton
Director of the Commission
U. S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Washington, D.C. 20555
Attention: Docketing and Service Branch

Dear Mr. Denton:

I recently became aware of proposed new regulations governing the use of sealed radioactive sources. These proposed new regulations, shown in Federal Register Volume 50, Number 67, pages 13797 - 13810, and more specifically in paragraph 39.51, cause me to have concern. This paragraph would seem to preclude the use of a sealed radioactive source in a drill hole unless casing was set in the hole.

Geologic data acquisition in the coal industry is dependent on the geophysical logging of drill holes. This is especially true with lignite, the type of coal with which my company is largely involved. Lignite exploration drill holes, which seldom exceed 400 feet in depth and are more typically 200 feet deep or less, are geophysically logged with curves for natural gamma, gamma-gamma density, resistivity, and caliper. The gamma-gamma density log requires the use of a sealed radioactive source. This source is usually 125 mCi of Cesium 137. Of the four logs commonly run, the density log is the most important. It exhibits a unique response to coal and lignite, whereas the natural gamma and resistivity logs show similar responses in both coal and sand. Thus, the density log is indispensable in the geophysical logging of coal.

This density log is used for the identification of coal seams and for the interpretation of the depth and thickness of those seams. It is also used to interpret the thickness and location of partings within the coal seams and to determine an estimate of the quality of the coal as a fuel. Since so much depends of the density log, it is important that the log accurately portray the sediments through which the logging sonde passes. The better density logs are run with the logging sonde firmly pressed against the drill hole wall by the caliper arm or a bow spring. Consequently, coal and lignite exploration holes are almost never cased. To do so would diminish the response of the density log and reduce its value. In the case of lignite, which is a low grade coal to start with, accurate representation of seams is even more essential and may be the deciding factor in the determination of the economic feasibility of mining the lignite.

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Acknowledged by

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Secretary of the Commission
July 5, 1985
Page - 2 -

Use of a sealed radioactive logging source poses a possible danger to ground water only in the unlikely event that the logging sonde becomes stuck in the drill hole and the radioactive source is inadvertently ruptured during fishing operations to retrieve the sonde. I have been involved with the Texas lignite industry for over nine years. During that time I have been responsible for the drilling of hundreds of geophysically logged drill holes, and a logging sonde has never been stuck in a drill hole. A colleague with 30 years experience in the coal industry recently told me that in all that time he has never experienced the rupturing of a radioactive source in a drill hole.

In addition to reducing the value of the all important density log, casing exploration drill holes would significantly increase drilling costs. In the past five years the Southwestern Division of The North American Coal Corporation has conducted over 138,000 feet of drilling. If drill hole casing had been required, our costs would have been increased by as much as \$224,000 to accomplish that drilling. The Trinity Mine Project, with which I am most closely involved, will require nearly 800,000 feet of drilling over the life of the mine. If drill hole casing is required, our costs will increase from \$709,000 to \$1,574,000 in unescalated 1985 dollars, depending on how much, if any, of the casing could be reused. That cost increase represents just one project from one company. The impact throughout the coal industry would be enormous.

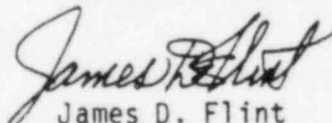
The possible danger to ground water is posed not by the act of logging drill holes with a radioactive source, but by the highly unlikely event of a source being ruptured in a drill hole. It is my opinion that protective measures should be directed toward the source of the potential problem, fishing for lost probes. This activity could be regulated, perhaps to require the presence of qualified government inspectors during the operation. Requiring casing in all holes in which a radioactive source is used would be an overprotective measure that would greatly diminish the usefulness of using the source in the first place.

I also feel that the time limit for comments on the proposed regulations should be extended to at least July 31st. I became aware of this matter only on July 3rd, and colleagues I have contacted were all unaware of it.

If I can provide any further information or be of any assistance in this matter, I hope you will not hesitate to contact me.

Sincerely,

THE NORTH AMERICAN COAL CORPORATION



James D. Flint
Manager, Geological Services
Trinity Mine Project

JDF/ras