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**TEMPORARY DEACTIVATION OF THE BIODENITRIFICATION  
TOWERS**

11/23/94

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REPORT**



Department of Energy  
Fernald Environmental Management Project  
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Mr. James A. Saric, Remedial Project Director  
U.S. Environmental Protection Agency  
Region V - 5HRE-8J  
77 W. Jackson Boulevard  
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager  
Ohio Environmental Protection Agency  
401 East 5th Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

#### TEMPORARY DEACTIVATION OF THE BIODENITRIFICATION TOWERS

This letter serves to describe Department of Energy (DOE)'s intent to place the Biodenitrification (BDN) towers in a standby condition. This is being done so that the current BDN manpower can be utilized to support the startup and operation of the Advanced Wastewater Treatment Facility (AWWT). It is intended that this action be implemented on November 29, 1994.

#### BACKGROUND

The entire BDN facility (comprised of the High Nitrate Tank, Biodenitrification Surge Lagoon (BSL), BDN Towers, and the BDN Effluent Treatment System) was constructed to treat high concentrations of nitrate-laden wastewater produced when the Fernald Environmental Management Project (FEMP) was in production. Nitrate limitations were incorporated into the FEMP National Pollutant Discharge Elimination System (NPDES) Permit, based on Best Demonstrated Available Technology (BDAT) resulting from the demonstration of the BDN towers' capabilities. Since the FEMP ceased production, nitrate levels have correspondingly declined to the point where the BDN towers are no longer required to achieve compliance with the NPDES nitrate limitations. However, the BDN towers will be required when processing any significant nitrate inventory which remains. Currently, the major remaining source of nitrates at the FEMP are the Uranyl Nitrate Hexahydrate (UNH) material, Thorium Nitrate, and recovered Nitric Acid.

It was originally hoped that the BDN towers could be deactivated in advance of the January 1995 startup of the AWWT. This would have provided the opportunity for the operators to be relocated from the BDN facility to the AWWT in time to receive the required startup training in addition to participating in the actual startup. By terms of the Consent Agreement, specifically as a result of the Supplemental Project which resulted from the Operable Unit 2 (OU2) Dispute Resolution Agreement (April 1993), the FEMP is required to have the AWWT on-line by January 31, 1995. The AWWT is currently under construction and is currently undergoing startup preparation.

## PATH FORWARD:

Due to the tight budgets in Fiscal Year (FY) 1995 and our commitments under the Consent Agreement, it is imperative to move forward with the intent of the original planning as outlined above. Accordingly, it is planned that the BDN towers be put on standby on November 29, 1994, allowing the experienced operators to be reassigned to the AWWT facility startup. The BDN towers would remain in standby until approximately April 1995, at which time operators will be reassigned for its operation.

During the time that the BDN is in standby, wastewater from the Uranyl Nitrate Hexahydrate (UNH) processing effort would be accumulated and stored in the 500,000 gallon High Nitrate Holding Tank (HNT). The HNT is an environmentally sound facility designed for such a purpose; i.e., holding high nitrate wastewaters to blend with the BSL effluent to achieve an equalized flow rate (both from a hydraulic and nitrate-loading stand point) to the BDN towers.

Based on current projections of wastewater discharges from the UNH processing, a projected six to eight week reactivation period for the BDN facility, the HNT volume will be sufficient to hold the UNH discharge. However, the volume of wastewater actually produced will be tracked and evaluated against the projected quantities. In the event that a problem is foreseen, efforts will be made to implement reactivation of the BDN facility earlier, so as not to impact the UNH schedule. FERMCO personnel have been in contact with Ohio Environmental Protection Agency (OEPA) surface water personnel concerning NPDES compliance issues. We have received verbal approval to place the towers on standby, provided compliance with the NPDES permit limitations are maintained.

During the standby period, preventative maintenance activities on the BDN facility will continue as scheduled. Continued daily monitoring of the Bionitrification Surge Lagoon discharge for nitrate will also occur. Effluent from the BSL will bypass the BDN towers and flow directly to the BDN-Effluent Treatment System (ETS). Uranium removal by the IAWWT unit at the ETS will continue until the AWWT is in operation.

If you have any questions concerning this subject, please contact Ed Skintik at (513) 648-3151.

Sincerely,



*for* Jack R. Craig  
Fernald Remedial Action Project Manager

cc:

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