

U.S. DEPARTMENT OF ENERGY  
**memorandum**

DATE: MAY 23 1979

REPLY TO ET-950  
ATTN OF:

SUBJECT: Analysis of Three-Mile Island Charcoal Filter Samples

1979 MAY 25 PM 1 09

TO: John M. Deutch, Acting Assistant Secretary  
for Energy Technology

NRC recently requested the assistance of Dr. V. Dietz, Naval Research Laboratory, in analyzing samples of charcoal filter media from Three-Mile Island. This ~~limited effort~~, short-term work relates to work Dr. Dietz has done under an ETW/P supported contract. The necessary arrangements were made and the analyses are underway (no impact on ETW/P program). We will receive a copy of the NRL report prepared for NRC.

The attached memorandum to me from Goetz Oertel provides additional information.

We are notifying you of this because of your interest in DOE support efforts related to Three-Mile Island.

Original signed by  
SHELDON MEYERS

Sheldon Meyers, Program Director  
Office of Nuclear Waste Management

Attachment

cc: B. Ferguson, Dir., ETN, w/attach.

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U.S. DEPARTMENT OF ENERGY  
**memorandum**

MAY 17 1979

DATE:

REPLY TO  
ATTN OF: ET-952

SUBJECT: ETW/NRC Cooperation on Three-Mile Island Iodine Release Measurements

TO: Sheldon Meyers, Program Director  
Office of Nuclear Waste Management

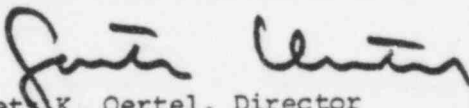
Informal discussions with NRC personnel at Three-Mile Island (TMI) have determined that much of the iodine leakage during and after the accident was due to faulty charcoal filter media (KI<sub>x</sub> impregnated activated charcoal). It passes the current NRC efficiency test satisfactorily, but the organic iodine bleeds off slowly after the initial capture, a phenomenon which the test does not measure.

This phenomenon was revealed in an ETW/P-supported paper presented by Dr. V. Deitz (NRL) at the August 1978 "15th DOE Nuclear Air Cleaning Conference." The responsible NRC staff participated in this Conference. NRC recently asked us to permit Dr. Deitz to carry out iodine "bleed off" tests on samples of the TMI charcoal. Results to date confirm previous results, i.e., they do bleed off as much as 70-80% of the organic iodine initially absorbed.

Backup beds impregnated with TEDA (a proprietary amine compound patented in England), now in place at TMI, are retaining the iodine satisfactorily.

It is our understanding that most power reactors now in service also utilize the KI<sub>x</sub> charcoal.

DOE has used the TEDA treated media at SR for several years. About three years ago our legal department received a request from Suttcliffe-Speakman (a UK charcoal company) indicating they were the sole licensee of Harwell and requesting an exorbitant license fee. At that time, we embarked on a program -- also with Dr. Deitz -- to find a competitive product. Another amine compound HMTA proved adequate and it cost less, as well. This new product (a DOE patent is in place) may now find wide-scale use.

  
Goetz K. Oertel, Director  
Division of Waste Products

cc: John Whitsett, ID

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Titles of TMI related Activities at  
Los Alamos Scientific Laboratory (LASL) and Sandia

Los Alamos:

- "Resperative Studies for NRC" (NRC contract #A7005)
- "TRAC Code Applications" (NRC contract #A7049)
- "Fuel Pin Transient Behavior Modeling and Analysis" (NRC contract #A7046)
- "Accident Delineation" (NRC contract #A7014)
- "Source Terms for Decay Heat Calculation" (DOE)

Sandia:

- "Accident Energetics" (NRC contract #A1016)
- "Systems Interaction Methodology Applications" (NRC contract #A1113)
- "Physical Protection for Nuclear Facilities" (NRC contract #A1060)
- "Development and Analysis for Vent Filtered Containment Conceptual Design" (NRC contract #A1220)