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## LEGISLATIVE RESEARCH COMMISSION

State Capitol

Frankfort, Kentucky 40601

532-564-8100

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August 28, 1981

Mr. Wayne Kerr, Director  
Office of State Programs  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Kerr:

On July 22 and 23, the U. S. NRC held a seminar in Frankfort, Kentucky, on the major findings from research projects being conducted with NRC funding at the Maxey Flats low level nuclear waste disposal facility. A special invitation to attend and participate was extended to the Special Advisory Committee on Nuclear Issues of the Kentucky Legislative Research Commission. This special legislative committee is composed of legislators, university and industry experts, and citizens. Based on their attendance and participation at this meeting, the committee would like to make the following comments and requests.

First of all, we appreciate the fact that this seminar was held in Kentucky, providing easy access by those persons most directly concerned about the Maxey Flats site. We believe that this is an appropriate policy for NRC to adopt in holding seminars on specific topics of local concern. It provides a unique opportunity for interaction among researchers, state decision makers, and local citizens. We encourage you to continue to bring such meetings to affected areas.

Secondly, as I am sure you are well aware, Kentucky is moving to stabilize and decommission the Maxey Flats site. With this in mind, there are several points the committee would like to make.

1. Because Kentucky is in the process of formulating decommissioning plans, the Department for Natural Resources and Environmental Protection can benefit from immediate access to major findings and observations made by researchers at the Maxey Flats site. We would like to see some formal channels set up by which this can be accomplished.
2. We would like to see an interagency federal state study group set up to: a) summarize the findings-to-date from research performed at the Maxey Flats site that are pertinent for proper stabilization and decommissioning of the site. b) to identify other information needed to proceed with stabilization and decommissioning; c) to suggest some alternatives for site decommissioning.

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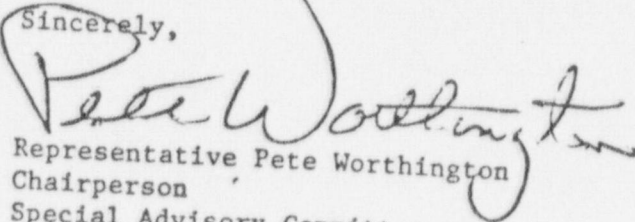
It is our understanding that a task force of this sort was organized for the Sheffield site and reported its findings in September, 1979.

3. We would like to see future NRC research at the Maxey Flats site directed toward finding the data needed to fill the information gap identified by the federal-state task force, the Kentucky Department for Natural Resources and Environmental Protection, and other sources to properly decommission Maxey Flats in particular, and low level shallow land burial sites in humid areas in general. We are extremely supportive of using Maxey Flats as a laboratory but, we believe that the research should be focused directly on decommissioning, both to meet Kentucky's need to show that low level nuclear waste sites in humid areas can be successfully decommissioned. We request that some discussions be held with the Kentucky DNREP on this topic and a policy position adopted.
4. When Kentucky has formulated a decommissioning plan for the Maxey Flats site, we would like to request assistance from NRC in review and comment on the plan by their technical staff and by other technical advisors available to NRC.
5. At the seminar in Frankfort, these specific questions were asked and the following responses were given:
- a) Can the evaporator be shut down? No.
  - b) Has there been a release of radioactive material from the Maxey Flats site detected above MPC levels to date? No.
  - c) Is there technology currently proven on how to decommission the Maxey Flats site so as to shut down the evaporator? No.
  - d) Could Maxey Flats be reopened? No.

Should any new information or findings become available that would change the response to these questions, we request that the Governor and the Legislative Research Commission be so apprised.

We appreciate your attention to the matters discussed here. Again, thank you for bringing the NRC - Maxey Flats seminar to Kentucky. Be assured of our cooperation and assistance on future Maxey Flats activity.

Sincerely,

  
Representative Pete Worthington  
Chairperson  
Special Advisory Committee on  
Nuclear Issues

PW:smk

Ky File

# Office of Information Services

Room 48 • Capitol Annex • Frankfort, Kentucky • 40601

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Contact: Myra Converse (502)564-2041  
Natural Resources and  
Environmental Protection Cabinet

PRESS ROW, WEEKLY

FRANKFORT, Ky. (Sept. 24, 1982)— Recent data from the Maxey Flats nuclear disposal site in Fleming County indicates that water bearing radioactive materials isn't being confined to the disposal trenches as was previously thought, officials of the state Natural Resources and Environmental Protection Cabinet announced today.

"In recent weeks monitoring data from this site has begun to show that radioactive material is moving from the trenches through underground channels to non-trench areas," Natural Resources Secretary Jackie Swigart said.

"This site's original design and the area's geology were said by Maxey Flat's developers to ensure that all radioactive materials would be retained within the disposal trenches," Swigart said. "Our findings are that even with the many stabilization efforts we have taken, water is still moving from these trenches."

Swigart explained that the shallow land burial techniques used at the site have led to the creation of cavities or voids in the trenches which, with the fractured-rock geology of the area, have allowed the water in the trenches to migrate to other areas.

"This contaminated water contains radioactive materials including cesium, strontium, cobalt, plutonium and tritium," she explained.

"I want the citizens of the state and especially those in the surrounding area to know that this problem does not present an immediate health hazard to the people of Fleming or Rowan counties," Swigart said.

"This problem is one which can be corrected by the application of present-day technology. Our proposed solution includes the installation of a permanent trench cover and the construction of a barrier-wall around all sides of the disposal site," Swigart said.

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Estimates of the cost of this work range from \$28 million to \$47 million, state officials said.

The Maxey Flats disposal site, closed by the state in 1977, became the responsibility of the Natural Resources Cabinet in 1979. Since assuming that responsibility, Natural Resources personnel have worked to stabilize the site.

Improvements at the site include the installation of a temporary surface moisture barrier on 85 percent of the trench area. The plastic covering effectively cut down on the amount of moisture getting into the trenches, cabinet officials said.

"We have also installed 43 liquid removal sumps on-site to more effectively rid the trenches of accumulated water," Swigart said. "Other work on the site includes the reconstruction of trench caps, correction of drainage channels and construction of new buildings on-site to ensure the health and safety of on-site workers," she added.

"All of this work has been paid for by the taxpayers of the Commonwealth, despite the fact that less than one percent of the radioactive waste was produced in Kentucky. The rest of the wastes were shipped from other states. Several federal agencies, including the Department of Defense, deposited nuclear wastes in the site," Swigart said.

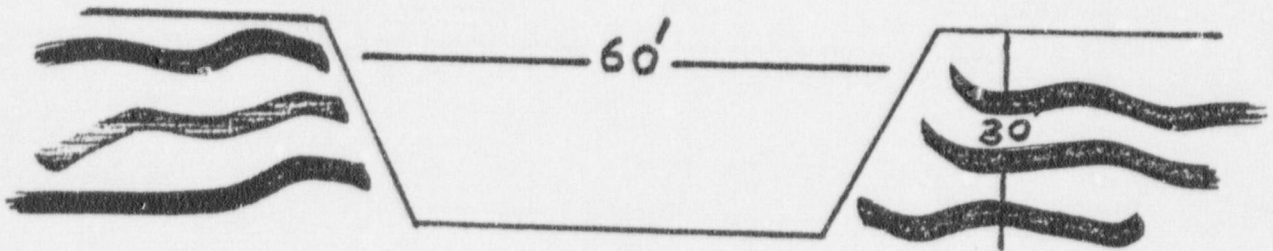
"The state feels that this additional financial burden should not be borne by the Commonwealth alone. We feel that this is a national problem which just happens to be situated in Kentucky. We have requested assistance from the federal government to correct the situation at Maxey Flats," she explained.

"We're working with the state legislators, the governor's office, officials of the Human Resources Cabinet and Kentucky's congressional delegation to seek this assistance from the federal government," Swigart said.

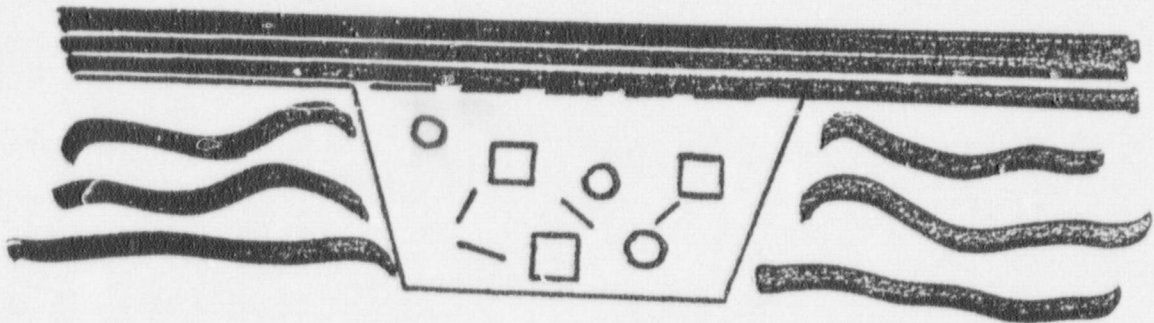
STATEMENT OF PROBLEM  
AND PROPOSED SOLUTION

A. THE PROBLEM

1. The technique of "shallow land burial" was utilized at Maxey Flats whereby radioactive wastes were dumped into unlined trenches approximately 60' wide, 30' deep, and 100' to 300' long which were dug down into the rock:



The trenches were then covered or "capped" with fill material ranging from about 6" to 3' above the top of the trench:



- b. although less than 1% of the radioactive waste was derived from Kentucky, the Commonwealth has overwhelmingly borne the burden of paying to clean up the site.
  - c. the citizens of the Commonwealth are faced with the prospect of radioactive contamination and the necessity of providing millions of additional dollars to take care of the problem.
  - d. unless immediate action is taken, severe health and environmental consequences are likely.
2. No low-level commercial nuclear waste site (there are only 6 in the country) has yet been decommissioned. Closure technology must be gleaned from other technologies and developed into state-of-the-art. A preliminary decommissioning plan is proposed:
- a. isolate the restricted area by placing an impermeable grout barrier wall 30-50' down into the ground to prevent off-site leakage.
  - b. place impermeable long-term cover on trenches to prevent infiltrations of water.
  - c. inject grout into trenches to solidify contaminated liquids.

In addition, a monitoring plan will be necessary to ensure that no further danger ensues.



3. The technology to address the problem can be developed. However, it will be expensive (estimated \$28-47 million).



## Major Events Relating to Maxey Flats

1982 - Actions taken to award contract with Hittman Nuclear &  
1980 Development Corporation to maintain the site.

Environmental monitoring by various state and federal agencies has revealed on-site and off-site migration of radioisotopes.

Temporary plastic water barrier (10-15 ml PVC) laid on the surface of 85% of the trench area. Barrier is highly cost-effective. The life expectancy of the plastic cover is 18 months.

Preliminary multi-layer moisture barrier testing (Proof of Installation Concept or POIC) done. One half-acre test plot used prior to installation of 4 1/2 acre plot.

Installation of 43 new sumps to more effectively rid the trenches of accumulated water.

Work done on site to improve worker safety and to minimize the danger of exposure for workers. Trench caps were reconstructed and augmented. New structures were built on the site and others were rehabilitated. The large and small holding ponds were drained and contaminated water evaporated. The old tank farm was cleaned up.

A preliminary decommissioning plan was developed for the site.

1980 Actions taken to renew contract with National Waste Management Services, a subsidiary of Dames & Moore, Inc., to maintain the site.

General Assembly enacted legislation:

1. Setting out state policy regarding the transfer of the site to the federal government, and requirements for re-opening the site.
2. Created a special advisory committee on nuclear issues, will serve as an oversight committee on the Maxey Flats site.
3. Requested the federal government to assist Kentucky, both technically and financially, in the decommissioning of the Maxey Flats site.
4. Passed various hazardous waste bills which included the disposal of radioactive material not covered under the federal Atomic Energy Act of 1954.

1979

Improvements made to reduce water accumulation on-site. Drainage improved and ponds covered.

May-Natural Resources selects Dames & Moore as new contractor for maintenance of Maxey Flats.

March-Natural Resources notified NECO that their maintenance contract would not be renewed and invited proposals.

February-By executive order responsibility for the Maxey Flats site was transferred from the Department of Finance to the Natural Resources Department. Regulatory functions are to remain with the Human Resources Department.

1978

May-New agreement signed by all parties terminating NECO's 25 year contract/lease at a cost of \$1.27 million to the Commonwealth. State contracts with NECO to maintain the site to June 30, 1979 with renewal option.

March-General Assembly passed legislation establishing a new special advisory committee on nuclear waste disposal and required approval of the Governor and the General Assembly for location of nuclear waste disposal sites in the Commonwealth.

1977

December 27-Secretary for Human Resources closed the site because of alleged violation of the water management plan agreement and refused to sign the Dec. 15 agreement with NECO.

December 15-Tentative agreement with NECO was signed.

September 23-A preliminary agreement for a two-year closure of the site.

August 24-NECO detected radioactivity in a new unused trench indicating lateral seepage from an old trench 200 feet away. Site was closed indefinitely to the digging or filling of new burial trenches.

1976

General Assembly enacted legislation:

1. Imposed a 10¢ per pound excise tax on all nuclear waste buried at Maxey Flats.
2. Abolished the Kentucky Science and Technology Commission and transferred responsibility for the perpetual care and maintenance of the site to the Department for Finance.
3. Created a special advisory committee to study the effects of nuclear waste disposal in Kentucky.



1974

Various radiological monitoring studies and hydro-geological studies initiated by the U.S. EPA, U.S. NRC, U.S. Geological Survey and the Kentucky Human Resources Department.

The Human Resources Department initiated a report "Sixth Month Study of Radiation Concentrations and Transport Mechanisms at the Maxey Flats Area of Fleming County, Kentucky" concluding that the nuclear-waste disposal facility is contributing radioactivity to the environment, although not at a level to create a public health hazard.

1973

The Human Resources Department initiated a special environmental monitoring study of the disposal facility.

1972

Major management changes implemented by NECO, including an on-site water management program.

Kentucky Department of Health issued orders to NECO to correct violations.

Significant violations of regulations cited to operator of disposal facility.

Environmental monitoring by the Kentucky Department of Health revealed possible off-site migration of radioisotopes.

1963

Maxey Flats site opened for business--first nuclear waste buried.

A contract signed between Commonwealth and Nuclear Engineering Co., Inc. giving company a 25 year lease and the sale option to extend the agreement for an additional 25 years. A perpetual care fund established requiring a cost per cubic foot of waste buried to be paid to the Commonwealth by operator.

1962

Nuclear Engineering Co., Inc. issued radioactive material license to operate a nuclear waste disposal site.

252 acres of land in Fleming County, in the knob area known as Maxey Flats purchased by a private concern, Nuclear Engineering Co., Inc. (NECO) and deeded to the Commonwealth for the purpose of nuclear waste disposal.

Kentucky becomes the first state to sign an agreement with the federal government for certain regulatory controls of atomic energy.

General Assembly passed legislation which re-affirmed the public policy of the Commonwealth on participation

in the development and utilization of atomic energy,  
and provided for the Commonwealth to purchase lands  
for the disposal of radioactive waste to be owned and  
controlled in perpetuity by the Commonwealth.

1960

General Assembly passed legislation which provided the  
Governor with the power to enter into agreements with the  
federal government for the transfer of certain regulatory  
powers in atomic energy.

1959

Congress amended the "Atomic Energy Act of 1954" to pro-  
vide for state participation on certain regulatory con-  
trols in the use of atomic energy. Provisions were made  
for the federal government to enter into agreements with  
states on such participation.

1958

General Assembly passed legislation which endorsed the  
act on of Congress to encourage participation in the  
development and utilization of atomic energy for  
peaceful purposes.

1954

Congress passed the "Atomic Energy Act of 1954" which  
provided for the development and utilization of atomic  
energy for peaceful purposes.



Department of Energy  
Washington, D.C. 20545

October 18, 1982

Honorable Carl D. Perkins  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Perkins:

I have been asked to respond to your letter to Mr. Shelby Brewer regarding the Maxey Flats low-level radioactive waste disposal facility. We are aware that the U.S. Nuclear Regulatory Commission and the Commonwealth are investigating the possibility of recent migration of radioactivity into the groundwater at the disposal site. We have asked Secretary Swigart for a copy of the data to which she referred in her press conference on September 24, 1982, to assist us in our review of the situation.

The Department has provided a grant to the Commonwealth of Kentucky to demonstrate improved trench cover design and emplacement, and an analysis of passive leachate control techniques. The rate of spending against these funds, and the expiration date of September 1983, was determined by the Kentucky Department of Natural Resources. We have worked cooperatively with Secretary Swigart's office in the past and hope to continue this relationship in the future. In addition, we have offered to share the technical knowledge we have gained to help Kentucky officials determine what should be done to stabilize the Maxey Flats site.

Our current authority, as well as our appropriations, for the low-level waste program, does not allow us to assume complete authority or to provide financial assistance for the actual remedial action and decommissioning activities, which may be necessary at the Maxey Flats site. Specific authority for these efforts would require legislation. We feel that the knowledge gained from the demonstration grant will contribute to the eventual closure of the facility.

*Kerr, NRC*

*Wade*

*Kerry*

*Lubart*

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We would be pleased to continue to work with the Commonwealth in identifying opportunities for joint projects within the bounds of our research and development program.

Sincerely,

*Michael J. Lawrence for*

Franklin E. Coffman

Acting Director

Office of Terminal Waste Disposal  
and Remedial Action

Office of Nuclear Energy

# Congress of the United States

## House of Representatives

Washington, D.C. 20515

September 23, 1982

The Honorable Shelby T. Brewer  
Assistant Secretary, Nuclear Energy  
Department of Energy  
Washington, D.C. 20585

Dear Mr. Brewer:

Yesterday evening I was informed by Jackie Swigart, Secretary, Kentucky Department of Natural Resources that there is a serious problem with the Maxie Flats Nuclear Waste Disposal site at Fleming County in the district I am privileged to represent.

Secretary Swigart informed me and Senators Huddleston and Ford that they have been able to stop the influx of surface water into the trenches at Maxie Flats. However, they have just discovered that there has been lateral movement into the ground water of radio active materials.

The ground water is migrating toward the Licking River which flows into the Ohio River. Also, many communities obtain their water from the Licking River.

It should be obvious that there is a real threat to the health of the people in the immediate area of Maxie Flats, as well as thousands downstream of the Licking River unless immediate action is not taken to stop this lateral movement of contaminated ground water.

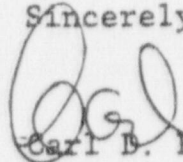
I am aware that the Department of Energy has provided a grant to the Commonwealth of Kentucky for demonstration purposes on the Maxie Flats Waste Dump to prevent infiltration of water from the surface, as well as to prevent lateral movement of contaminated ground water. It is also my understanding that as of this date the Commonwealth of Kentucky has only drawn down \$50,000 of this grant, which is due to expire in September 1983.

The Honorable Shelby T. Brewer  
Department of Energy  
Page 2  
September 23, 1982

I respectfully request that the Department of Energy provide immediate additional assistance to design the necessary remedial action to alleviate this situation, as well as provide necessary construction assistance for the remedial action under your rules and regulations.

With best wishes,

Sincerely,



Carl D. Perkins, M.C.

CDP:wk