

SEP 15 1978

*Comm. memo
file
9-25-78*

For: The Commissioners

From: Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety and Safeguards

Thru: *(Signature)* Executive Director for Operations

Subject: PROPOSED LETTER TO TVA CHAIRMAN DAVID FREEMAN AND SENATOR
GEORGE MCGOVERN RE INACTIVE URANIUM MILL SITE AND TAILINGS
AT EDMONT, S. D.

Purpose: To obtain Commission approval of the proposed letters.

Discussion: The draft letter to Mr. David Freeman, Chairman of the
Tennessee Valley Authority (TVA) (Enclosure 1) concerns
the TVA uranium mill site at Edgemont, South Dakota. The
letter was prompted by a meeting held here on August 22,
1978, with TVA representatives concerning TVA's decommissioning
plan for the site. At the meeting the TVA representatives
requested more time to study the decommissioning problem.
For background information, pertinent correspondence with
TVA about the site is enclosed (Enclosure 4).

The draft letter to Senator McGovern (Enclosure 2)
responds to his inquiry by: (1) answering the specific
questions raised by him concerning the hazard posed by
the Edgemont site and (2) noting that the Commission
is coordinating with the site owner, TVA, to resolve the
matter. Note that the response to Sen. McGovern would
include a copy of the proposed letter to Mr. Freeman.
Sen. McGovern's incoming letter is at Enclosure 3.

We are at a critical juncture with TVA regarding the
disposition of the tailings at the Edgemont site, specifically
a decision on whether or not TVA will move the tailings
from the town to a more isolated area for disposal. On
the basis of the meeting with the TVA representatives,
it appears probable that the TVA staff views the problem
too narrowly and will use the requested extra time to
attempt to justify disposal of the tailings at the
present location because of cost advantages. The staff

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J. B. Martin
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R. A. Scarano
42-74103

9612190103 780915
PDR ADOCK 04001341
C PDR

DISCUSSION:
(cont'd)

believes that disposal and reclamation of the tailings adjacent to a populated area (ten blocks from center of Edgemont) would be the wrong siting decision for long-term disposition of the tailings and so informed TVA staff. This fundamental point should also be brought to the attention of the highest levels of TVA management so that the next few months will be used in evaluating site alternatives involving removal of the tailings from Edgemont. The letter is prepared for the signature of the Chairman as the most appropriate person to sign a letter addressed to the head of a Federal agency. The letter, as drafted, however, presents only the opinion of the staff, and not of the Commission itself, because there is a possibility that the Commission could be called upon to resolve a dispute on this issue.

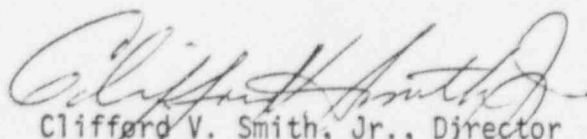
The TVA site is important in the context of reclamation decisions to be made for the inactive tailings sites under the proposed DOE program. Although not part of the proposed DOE program, the technical and regulatory decisions made with respect to Edgemont will provide precedents for NRC review of the 22 DOE sites when remedial plans are submitted for review and concurrence (assuming passage of legislative proposals currently in the Congress).

You may recall, also, that a specific question was raised regarding the site during Chairman Hendrie's testimony at the recent Dingell hearings on the mill tailings legislation. Pertinent correspondence (same as items (a) through (d) of Enclosure 4 along with a copy of the report of the Phase II-type study of the Edgemont site and Attachments 1, 2, & 3 to Enclosure 1 of the McGovern letter has been submitted for the hearing record at the request of Congressman Dingell.

RECOMMENDATION: Approval of the draft letters.

COORDINATION:

The Office of the Executive Legal Director has no legal objections.


Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety
and Safeguards

Enclosure: See attached list.

Enclosures:

1. Draft Letter to David Freeman
2. Draft Letter to Sen. McGovern
3. Letter fm Sen. McGovern, 8-22-78
4. Background Correspondence
 - (a) Letter fm J. E. Gilleland, TVA, dated 7-31-78
 - (b) Letter fm Dr. Allyn O. Lockner, Secretary, Dept. of Environmental Protection, South Dakota, dated 5-15-78
 - (c) Letter fm TVA dated 1-17-77
 - (d) Letter to Mr. Godwin Williams, Jr., (Manager of Power, TVA) dated 12-21-76.

Commissioners' comments should be provided directly to the Office of the Secretary by cob

SEE PREVIOUS YELLOW FOR CONCURRENCES

FOR: The Commissioners

FROM: Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety & Safeguards

THRU: Executive Director for Operations

SUBJECT: PROPOSED LETTER TO TVA CHAIRMAN DAVID FREEMAN

PURPOSE: Approval of the enclosed draft letter (Enclosure 1) to TVA Chairman David Freeman concerning the decommissioning of the inactive uranium mill site and tailings at Edgemont, South Dakota.

CATEGORY: Letter is prepared for Chairman Hendrie's signature

DISCUSSION: The draft letter to Mr. David Freeman, Chairman of the Tennessee Valley Authority (TVA) concerns the TVA uranium mill site at Edgemont, South Dakota. The letter was prompted by a meeting held here on August 22, 1978, with TVA representatives concerning TVA's decommissioning plan for the site. At the meeting the TVA representatives requested more time to study the decommissioning problem. For background information, pertinent correspondence with TVA about the site is enclosed (Enclosure 2).

We are at a critical juncture with TVA regarding the disposition of the tailings at the Edgemont site, specifically a decision on whether or not TVA will move the tailings from the town to a more isolated area for disposal. On the basis of the meeting with the TVA representatives, it appears probable that the TVA staff views the problem too narrowly and will use the requested extra time to attempt to justify disposal of the tailings at the present location because of cost advantages. The staff

Contact:
J. B. Martin
42-74110

OFFICE ➤						
SURNAME ➤						
DATE ➤						

DISCUSSION:
(cont'd)

believes that disposal and reclamation of the tailings adjacent to a populated area (ten blocks from center of Edgemont) would be the wrong siting decision for long-term disposition of the tailings and so informed TVA staff. This fundamental point should also be brought to the attention of the highest levels of TVA management so that the next few months will be used in evaluating site alternatives involving removal of the tailings from Edgemont. The letter is prepared for the signature of the Chairman as the most appropriate person to sign a letter addressed to the head of a Federal agency. The letter, as drafted, however, presents only the opinion of the staff, and not of the Commission itself, because there is a possibility that the Commission could be called upon to resolve a dispute on this issue.

The TVA site is important in the context of reclamation decisions to be made for the inactive tailings sites under the proposed DOE program. Although not part of the proposed DOE program, the technical and regulatory decisions made with respect to Edgemont will provide precedents for NRC review of the 22 DOE sites when remedial plans are submitted for review and concurrence (assuming passage of legislative proposals currently in the Congress). We also understand that the situation is being followed closely by Senator McGovern's office.

You may recall, also, that a specific question was raised regarding the site during Chairman Hendrie's testimony at the recent Dingell hearings on the mill tailings legislation. Pertinent correspondence (same as items (b) through (g) of Enclosure 2 along with a copy of the report of the Phase II-type study of the Edgemont site) has been submitted for the hearing record at the request of Congressman Dingell.

RECOMMENDATION: Approval of the draft letter.

COORDINATION: The Office of the Executive Legal Director has no legal objections.

Original Signed by
CLIFFORD V. SMITH, JR.

Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety
and Safeguards

FCPE
Trager/Rouse

9/1/78

9/1/78

OFFICE	Enclosure: See attached list.	FC	RMSS	EDO
SURNAME	BMartin	RECOMMINGHAM	CWSmith, Jr.	LVGossick
DATE	9/8/78	9/8/78	9/8/78	9/15/78

For: The Commissioners

From: Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety & Safeguards

Thru: Executive Director for Operations

Subject: PROPOSED REPLY TO SENATOR MCGOVERN

Purpose: Approval of enclosed response to a letter received from Senator McGovern regarding the inactive uranium mill site and tailings at Edgemont, South Dakota.

Category: Response is prepared for Chairman Hendrie's signature.

Discussion: The draft letter responds to Senator McGovern's inquiry by: (1) responding to the specific questions raised by Senator McGovern concerning the hazard posed by the Edgemont site and (2) noting that the Commission is coordinating with the site owner, TVA, to resolve the matter. Note that the response to Senator McGovern would include a copy of the proposed letter to Mr. David Freeman, Chairman of TVA, that has been proposed for Chairman Hendrie's signature.

Recommendation: Approval of the draft letter.

Coordination: The Office of the Executive Legal Director has no legal objections.

Original Signed by
CLIFFORD V. SMITH, JR.
Clifford V. Smith, Jr., Director
Office of Nuclear Material Safety
and Safeguards

Enclosures:
1. Draft reply to Senator McGovern
2. Letter fr Senator McGovern dtd 8/22/78

Contact:
R. A. Scarano
42-74103

ELD

9/7/78

9/8/78

OFFICE	ECDF	ECSL	EC	EC	WMSS	EDO
SURNAME	LCkrouse:ng	JB Martin	REC Cunningham	Shelvers	CV Smith	LV Gossick
DATE	9/7/78	9/7/78	9/7/78	9/7/78	9/7/78	9/7/78

Mr. David Freeman, Chairman
Tennessee Valley Authority
830 Power Building
Chattanooga, Tennessee 37401

Dear Mr. Freeman:

The purpose of this letter is to make you aware of a potential problem which is of considerable concern to the NRC. The problem involves the method for final disposal of uranium mill tailings at the TVA millsite located in Edgemont, South Dakota.

In August 1974, TVA purchased the Edgemont uranium milling facility and site as well as nearly one hundred thousand acres of mining claims. The license for the mill was transferred to TVA on August 14, 1974, as requested by TVA and the former licensee, Mines Development (Susquehanna-Western). By application dated January 28, 1976, TVA requested renewal of Source Material License SUA-816; and in accordance with NRC regulations, the license has continued in effect.

As a result of NRC concerns regarding the suitability of the Edgemont site for future milling operations and the disposition of the existing tailings, as well as concerns expressed by the state of South Dakota (through Governor Kneip) and the EPA, NRC staff met with TVA officials on November 29, 1976. TVA was informed that the NRC was planning to conduct a study to provide an independent assessment of the existing Edgemont tailings. TVA stated at the meeting that it clearly understood that it was responsible for the Edgemont site, including the existing tailings, and would continue its own environmental studies of the site.

Enclosure 1

The resulting report entitled, "Engineering Assessment of Inactive Uranium Mill Tailings, Edgemont Site, Edgemont, South Dakota," was completed in May 1978. The report contains the results of a Phase II-type engineering assessment of the inactive Edgemont uranium mill site and 2.3 million tons of uranium mill tailings. The assessment was performed for the NRC by Ford, Bacon and Davis Utah (FBDU) and is similar to the Phase II assessments of 22 inactive uranium mill sites performed by FBDU for the Department of Energy.

By letter dated June 26, 1978, TVA reported that based on extensive engineering, economic, and environmental studies, TVA did not plan to use the Edgemont facility for the milling of uranium ore. TVA indicated they were developing a plan for decommissioning the facility and reclaiming the site and that they would work closely with the NRC.

Following receipt of the above letter, the NRC issued a license amendment to formalize the course of action proposed by TVA. The amendment required that TVA submit a decommissioning plan and supporting environmental report by November 7, 1978, and that the license would be terminated upon successful completion of the decommissioning. The TVA responded to the amendment by letter dated July 31, 1978. TVA restated the previous commitment to clean up the site but was not definite with regard to the scope of the commitment and requested more time to prepare its decommissioning plan and environmental report.

The enclosed meeting minutes reflect the results of an August 22, 1978, meeting on this matter. In the meeting the NRC staff urged TVA to make an early commitment to remove the tailings from Edgemont, including cleanup of tailings at off-site locations, so that useful work on determining the best way to do this could begin as soon as possible. We feel that this important issue deserves to be brought to your attention.

The NRC staff considers that final in-place disposal of uranium mill tailings in the city of Edgemont (ten blocks from the center of town) is undesirable from both health and environmental standpoints and that the decommissioning of the Edgemont site should result in unrestricted community use of the land. An early decision by TVA to remove the tailings from this populated area, including cleanup of off-site structures, would permit directing the staff efforts toward finding the best method of accomplishing this task in a timely manner. I trust this issue will receive prompt and serious consideration.

Sincerely,

Joseph M. Hendrie
Chairman

Enclosure:
As stated

The Honorable George McGovern
United States Senate
Washington, D.C. 20510

Dear Senator McGovern:

I am pleased to respond to your letter of August 22, 1978, regarding the inactive uranium mill site and tailings located at Edgemont, South Dakota. Based upon your review of the recent NRC report on this site referenced in your letter, you requested clarification on certain points. Enclosure 1 of this letter provides the NRC staff response to your specific questions.

As noted in enclosed responses to your questions, we have been working with the licensee, Tennessee Valley Authority (TVA), to initiate appropriate reclamation of this site as soon as possible. Attachments to the staff responses provide recent, pertinent correspondence with TVA regarding the Edgemont site. I have also enclosed for your information (Enclosure 2) a letter that I have sent to Mr. David Freeman, Chairman of TVA, bringing this matter to his attention to promote timely resolution. Two basic issues to be resolved are whether or not TVA's proposal will include (1) removal of the tailings pile from the town to permit future, unrestricted use of the site and (2) cleanup of off-site structures and grounds where tailings are present.

Enclosure 2

The Honorable George McGovern

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We appreciate your interest in this matter; and if you need further information, please let me know.

Sincerely,

Joseph M. Hendrie
Chairman

Enclosures:

1. Staff responses to your
August 22, 1978, questions
concerning the Edgemont site
2. Letter to Chairman David Freeman,
TVA, dated _____

ENCLOSURE

STAFF RESPONSE TO QUESTIONS ON TVA EDGE MONT SITE,
SENATOR MCGOVERN'S LETTER OF 8-22-78

Question 1

How do the levels of radon gas and radiation exposure levels measured in Edgemont for its drinking water supply, dwellings constructed on or with uranium mill tailings, and through inhalation compare with national maximum acceptable safe standards for exposure?

Response

The deep well source of the drinking water supply for Edgemont has not been contaminated by the Edgemont mill site; and thus, the site does not contribute to the radiation exposure of the Edgemont population through this pathway. However, measurements have shown that the water supply does contain a relatively high, but natural, radium concentration (about 4 pCi/l) due to the natural uranium content of the aquifer media. This may be compared with the EPA drinking water standard for radium of 5 pCi/l (40 CFR 141). As a further comparison, in proposing its regulations for radionuclides in drinking water, EPA estimated that a total of about 500 of the nation's community water systems would presently exceed this radium limit.

With respect to dwellings constructed on or with mill tailings, a gamma-screening survey was conducted in Edgemont during 1972 to identify locations contaminated with tailings. On the basis of this survey, one structure was identified where tailings were apparently utilized as fill beneath the dwelling. The measured gamma level of 0.1 mR/hour would appear to qualify the structure for remedial action using the Surgeon General's Guidelines that were recommended for cleanup of structures in Grand Junction, Colorado ("from 0.05 to 0.1 mR/hr, remedial action may be suggested; greater than 0.1 mR/hr, remedial action indicated"). Twenty-four other locations were identified where some tailings were present on the grounds around structures. Further investigation will be necessary to determine what, if any, remedial actions should be taken at these locations. We have requested TVA to include cleanup of off-site structures in their mill site decommissioning plan.

Based on our study, the highest radiation exposure levels to the public resulting from the Edgemont tailings pile occur in the Cottonwood Community of Edgemont which is immediately adjacent to the site. These exposures are attributable to direct gamma radiation from the pile and inhalation of radon daughters and other particulates. The dose estimates for the nearest permanent resident are equivalent to or exceed exposures that are received from natural background radiation sources and constitute significant fractions of the maximum limits presently specified by NRC regulations

for an individual member of the public. For example, the whole body dose of the nearest resident was estimated to be 240 mrem per year as compared with the NRC maximum limit of 500 mrem per year. Dose estimates to the lung and bronchial epithelium of the nearest resident due to radon daughters and other particulates are about one-third of the maximum NRC limits for an individual of the public. We do not consider these radiation exposures as acceptable for the long term in the context of reducing exposures to as low as is reasonably achievable, and they substantially exceed the EPA limit of 25 mrem per year for the uranium fuel cycle (40 CFR 190) that becomes applicable for operating uranium mills in December 1980. The location of the mill tailings also results in elevated exposure levels to the remaining population of Edgemont; and while these exposures are much less than those indicated above, proper remedial action can essentially remove any risk attributable to the site.

Question 2

What steps will the Commission recommend to remove these potential health hazards?

Response

Following the issuance, in May 1978, of our study of the Edgemont site, TVA notified us that they no longer had plans to use the Edgemont facility for milling uranium ore (Attachment 1). At the same time, they stated that they would be developing a plan for decommissioning the facility and reclaiming the site. By Order dated July 6, 1978, (Attachment 2) the NRC staff amended TVA's Source Material License SUA-816 to require the TVA to prepare a detailed plan for decommissioning the Edgemont site and a supporting environmental report and submit the documents to the NRC no later than November 7, 1978. The plan for decommissioning was to have included mill site and tailings reclamation and cleanup of off-site structures and open lands. The TVA was also informed that prime consideration should be given to removal of the tailings from the populated area (to a remote area for disposal). By letter dated July 31, 1978 the TVA requested modifications to the terms of the amendment and stated the belief that TVA was not responsible for the cleanup and removal of tailings from off-site structures.

The TVA and the NRC met concerning this matter on August 22, 1978. As noted in the minutes of the meeting, the NRC staff agreed to modify the license amendment to provide for a March 1, 1979, submittal date for the decommissioning plan and supporting environmental report (Attachment 3). The NRC staff again urged that the TVA give primary consideration to alternatives which involve removal of tailings from the existing location to permit unrestricted use of the site after decommissioning.

TVA reiterated their belief that they are not responsible for remedial actions for off-site structures since any mismanagement of tailings took place prior to their ownership. NRC stated that the costs of off-site remedial actions that may be necessary would only be a small fraction of the total site reclamation costs and should be included.

Question 3

Who holds the primary responsibility to assure that acceptable levels of exposure are achieved?

Response

The sole responsibility for reclamation of the Edgemont site is TVA's subject to approval of the plan by the NRC.

Question 4

Is there any immediate danger to residents of the Edgemont area due to these high rates of exposure?

Response

There is no evidence to support a conclusion that the tailings site constitutes an immediate health hazard to Edgemont residents. The health risk due to the radiation exposures can only be quantified on a statistical basis over a period of time, as discussed in the report of the NRC study ("Engineering Assessment of Inactive Uranium Mill Tailings, Edgemont Site, Edgemont, South Dakota," May 1978, prepared for the NRC by Ford, Bacon and Davis). While the risk is not great over the short term, because of the time-dependent nature of radiation exposure, we believe that timely resolution is required, as discussed in the response to question 2 above.

In this context, we were provided in 1976 with an analysis of cancer death rates in Fall River County, South Dakota, by the South Dakota Department of Health. Of particular interest was respiratory cancer mortality which appeared to be higher in the county than in the state of South Dakota. The NRC evaluation of the data (Attachment 4) concluded that the elevated respiratory cancer rate in Fall River County did not appear to be attributable to uranium milling operations. Nevertheless, we believe, as indicated above, that it would be wise to move expeditiously to eliminate the tailings as a source of concern through proper reclamation of the Edgemont site.

Attachments:

1. Letter fm J. E. Gilleland, Assistant Manager of Power, TVA dated 6-26-78.
2. Letter (and SUA-816 license amendment) to TVA dated 7-6-78.
3. Letter (and SUA-816 license amendment) to TVA dated 8-29-78.
4. Letter fm R. A. Scarano, NMSS, to S. D. Dept. of Health dated 7-7-78.