

VIA e-mail to

Administrator Michael S. Regan
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**Sierra Club TN * Southern Environmental Law Center *
Tennessee Environmental Council * Harpeth Conservancy *
Tennessee Citizens for Wilderness Planning * Advocates for the Oak Ridge Reservation *
Oak Ridge Environmental Peace Alliance * Foundation for Global Sustainability *
Erwin Citizens Awareness Network, Inc. * Sowing Justice *
Bellefonte Efficiency & Sustainability Team * Catholic Committee of Appalachia, TN *
Blue Ridge Environmental Defense League * Nuclear Information and Resource Service *
National Radioactive Waste Coalition * Public Employees for Environmental Responsibility *
Beyond Nuclear * Citizens' Resistance At Fermi Two * Coalition for Nuclear Safety *
Coalition for a Nuclear Free Great Lakes * Concerned Citizens for Nuclear Safety *
Don't Waste Michigan * Ecological Options Network * Heart of America Northwest *
Indian Point Safe Energy Coalition * NY Campaign to Abolish Nuclear Weapons *
Nuclear Watch New Mexico * Nuclear Watch South * Occupy Bergen County *
Ohio Nuclear Free Network * Physicians for Social Responsibility - Kansas City *
Rockland Coalition to End the New Jim Crow * Samuel Lawrence Foundation *
Snake River Alliance * Unitarian Universalists for a Just Economic Community *
Veterans For Peace Chapters Phil Berrigan,180, Spokane 35 * WANW *
Women's Energy Matters**

Date: **March 26, 2024**

Subject: Department of Energy (DOE) Oak Ridge Reservation (ORR),
Tennessee Environmental Management Disposal Facility (EMDF)
September 30, 2022 Record of Decision

Dear Administrator Regan:

We, the undersigned, request that you correct a Record of Decision (ROD) that you signed as Administrator of the Environmental Protection Agency (EPA). This ROD authorizes the disposal of radioactive, toxic, and hazardous waste at the Environmental Management Disposal Facility (EMDF) on the Oak Ridge Reservation (ORR) but needs to be revised so that it protects human health and complies with federal law and regulations.

We also request that you end the culture of non-compliance associated with disposal of Superfund waste at the ORR by ensuring that federal laws and regulations are no longer violated at the existing radioactive, toxic, and hazardous waste landfill (the Environmental Management Waste Management Facility, EMWMF).

We further request that you exercise leadership going forward to ensure that all Superfund related work performed now and in the future at the ORR follows the law and regulations. This includes not only taking down excess buildings and structures, associated waste disposal, and discharges to surface water, but also clean-up of the widespread contamination that may pose a threat to current and future generations and caused the ORR to be listed on the EPA National Priority List (NPL) in the first place.

A coalition of retired environmental professionals with extensive knowledge of the Superfund law (the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA), its implementing regulations (the National Oil and Hazardous Substances Pollution Contingency Plan, or NCP), implementation of CERCLA at the ORR, and the hazards posed by waste materials at the ORR, sent you a technical letter via e-mail on February 28, 2024, requesting that you ensure protection of human health at the ORR EMDF. That letter is available online^[i] and demonstrates that the September 30, 2022, ROD^[ii] you signed does not ensure human health protection consistent with federal law and regulations. Since you, as head of the Agency, signed and approved the EMDF ROD, it sets a bad precedent of allowing approval of CERCLA decisions without first demonstrating that the chosen remedial actions comply with CERCLA and the NCP. The NCP makes it clear that overall protection of human health and the environment and compliance with all available applicable or relevant and appropriate requirements (ARARs) are threshold requirements that must be met.^[iii] The ROD postpones demonstrating protectiveness using CERCLA methodology until after the ROD is signed.^[iv] The EMDF ROD is not overall protective of human health^[v] and includes strategies that appear inconsistent with some ARARs.^[vi] This bad precedent threatens human health and the environment at both federal facility and non-federal facility CERCLA NPL sites.^[vii]

Implementation of the CERCLA remedial action at EMWMF has established a precedent of non-compliance. *EMWMF was expanded over a gaining tributary to Bear Creek with installation of an underdrain to transmit groundwater to surface water in violation of radioactive^[viii] and toxic^[ix] waste ARAR requirements in the EMWMF ROD. There are also ongoing discharges of EMWMF landfill wastewater to surface water without authorization in the EMWMF ROD establishing discharge criteria that protect human health to CERCLA- and NCP-required standards or through a Clean Water Act (CWA) permit. Non-compliance has been ongoing for at least 20 years^[x]. **We request that you end the precedent for non-compliance and promptly bring EMWMF into compliance with CERCLA and the NCP.***

Wastewater discharge criteria to protect current and future generations.

The CWA and CERCLA both clearly and unambiguously require the use of the best available treatment technologies to minimize the harm caused by discharges from landfills like EMDF and EMWMF, yet you ignored those requirements.

The ROD you signed defers a decision on wastewater discharge limits and it is impossible for the public to know whether final discharge limits will comply with CERCLA and NCP requirements including threshold criteria. Further, the NCP at 40 CFR § 300.430(e)(2)(i) requires that the ROD include final remediation goals that meet criteria specified in that regulation. That was not done, and the ROD allows future modification of “PRG/cleanup levels” in ROD Table 2.9 in determining final discharge criteria.[xi]

EMDF is expected to accept waste from Y-12 and X-10 (Oak Ridge National Laboratory) likely containing numerous chemicals and radionuclides which have the potential to adversely impact surface water use and pose unacceptable risk to human health.[xii] Further, PCB levels in fish and other contamination in Bear Creek already appear to pose an excess lifetime cancer risk (ELCR) at the upper end or exceeding the NCP acceptable 10^{-4} to 10^{-6} cancer risk range.[xiii] Discharging additional radionuclides from the new landfill based on 10^{-5} instream cancer risk level per carcinogen[xiv] only further increases the ELCR.

The EMDF ROD you signed relies on a flawed dispute resolution decision by your predecessor, EPA Administrator Andrew R. Wheeler (Wheeler Decision),[xv] that allows DOE to undermine the NCP’s cancer risk range provisions and ignores the NCP at 40 C.F.R. § 300.430(e)(2)(i)(A)(2) requiring that *“the 10^{-6} risk level shall be used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.”* To comply with CERCLA and the NCP, the cumulative excess upper bound lifetime cancer risk from radionuclides and carcinogenic chemicals[xvi] discharged to surface water from EMDF plus carcinogens otherwise present in surface water must not exceed the NCP 10^{-4} to 10^{-6} cancer risk range.[xvii]

The Wheeler Decision also incorrectly determined that technology based effluent limitations (TBELs) and antidegradation requirements are not to be used for releases of radionuclides at ORR CERCLA landfills.[xviii] Failure to treat landfill effluents to TBELs is not demonstrated protective of human health.[xix]

CWA ARARs require that all discharges of wastewater shall receive treatment or effluent reduction necessary to comply with water quality standards[xx] applied at the required stream flow[xxi] (Water Quality Based Effluent Limit or WQBEL). CWA ARARs also require the greatest degree of reduction of CWA pollutants through application of best available demonstrated control technologies[xxii] (TBELs). Bear Creek is impaired for CWA pollutants mercury, PCBs, cadmium, and nutrients.[xxiii] CWA ARARs also require complying with

antidegradation requirements for unavailable parameters.[xxiv] EMDF ROD ARARs incorrectly omit antidegradation of available pollutants and contaminants.[xxv]

The ROD you signed includes mercury and PCBs management approaches that are not demonstrated to comply with CERCLA, the NCP, and CWA ARARs.[xxvi] Further, the ROD states that "*concurrence on the final ROD reflects final agreement on the [mercury management] approach.*" **This establishes a bad precedent of non-compliance with the applicable CWA requirements for mercury and PCB discharges at CERCLA sites that cannot be undone without amending the EMDF ROD.** The ROD also ignores protection of young children who may play in Bear Creek at the greenway or elsewhere.[xxvii]

Protecting human health to the cumulative 10^{-4} to 10^{-6} ELCR, compliance with all available CWA ARARs, and protecting surface water uses required by CERCLA and the NCP will likely require deploying wastewater treatment technologies with very high removal efficiencies, exclusion of wastes containing significant concentrations of certain radionuclides and hazardous substances, and drastically cutting the generation of landfill wastewater.[xxviii] **A Superfund cleanup should not be an excuse to avoid these important actions needed to ensure protectiveness of human health.**

Waste acceptance criteria (WAC) to protect future generations.

Post-closure overall protection of human health and the environment at Oak Ridge disposal sites will be determined by limits on the nature and quantity of the waste to be disposed of (WAC). To be protective of human health, radioactive decay during containment must reduce contamination in the landfill to levels that ensure the eventual migration of radionuclides to groundwater and surface water will not cause CERCLA[xxix] and NCP protectiveness standards to be exceeded. If DOE's estimate in the EMDF ROD is correct, then release of leachate from EMDF may not begin until about 250 years after landfill closure. In the justification[xxx] for the exemption from Tennessee Radiological Health Rule 0400-20-11-.17(1)(h) the ROD states that 250 years would be time sufficient for radionuclides with half-lives of 30 years or less to decay 8 half-lives. Similarly, DOE estimates in the EMDF PA[xxxi] bathtub scenario that release of leachate to surface water may begin between 310 and 575 years after landfill closure[xxxii] and that levels of radionuclides in Bear Creek exceed recreational use ARARs for protection of human health soon after EMDF begins leaking.[xxxiii] The cancer risk increases as EMDF continues to deteriorate. Bathtub scenario releases to groundwater also likely exceed maximum contaminant levels (MCLs).[xxxiv] ROD Table 2.5 presents numerous radionuclides in the estimated radionuclide inventory with half-lives that will undergo little decay during containment.[xxxv]

There were 5 versions of the EMDF Remedial Investigation and Feasibility Study (RI/FS), and RI/FS version 5 (D5) includes low to high ranges for analytical WAC without demonstrating what analytical WAC meet CERCLA and NCP human health protectiveness

standards. The D5 RI/FS was referenced in both the Proposed Plan and the ROD. RI/FS D5 Figure 6-31 shows a sequence where the final WAC are presented in the WAC Compliance Plan (including additional EMDF PA scenarios), there is appropriate documentation under CERCLA, and then the WAC are codified in the ROD. However, that sequence was not followed. The ROD deferred WAC, the additional EMDF PA bathtub scenario, the WAC Compliance Plan, and demonstration of protectiveness using CERCLA methodology until after ROD signing.

The ROD included only waste lot concentration limits derived for inadvertent human intrusion scenarios with cancer risk levels set at 2×10^{-3} ELCR.[xxxvi] This does not comply with the NCP 10^{-4} to 10^{-6} cancer risk range.

We call on you to amend the EMDF ROD and ensure requirements in the EMDF ROD and the implemented remedial action:

- 1. Meet threshold criteria, using CERCLA methodology, including being overall protective of both current and future generations to standards required by CERCLA and the NCP,**
- 2. Comply with CERCLA, the NCP, ARARs, and EPA guidance,**
- 3. Comply with grounds approved in the ROD for invoking ARAR waivers or exemptions to the extent you believe, based on sound science, that the waivers or exemptions are protective of human health and the environment, and**
- 4. Establish flow monitoring and representative sampling and analyses of surface water and fish downstream of EMDF sufficient to reliably quantify impacts on downstream water uses and people consuming fish. This also includes timely identifying impacts or potential impacts in Bear Creek and/or downstream East Fork Poplar Creek and timely notifying the public of any adverse impacts or potential adverse impacts.**

We also request that you provide the public with the opportunity to review complete information and submit comments on final proposed discharge criteria and proposed final WAC and that you ensure thoughtful responses to the comments and meaningfully address the many concerns that have been raised before effluent limits and waste acceptance criteria are finalized.

This letter expresses some of our concerns that the EMDF ROD you signed, as EPA Administrator, fails to protect the health of current and future generations and to ensure protection of water quality. We request that you amend the ROD so that it complies with federal law and regulations and protects human health and water quality.

Thank you for your consideration of these requests.

Sincerely,

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[i] <https://aforr.info/wp-content/uploads/2024/02/Letter-to-EPA-Administrator-Regan-dated-Feb-28-2024-concerning-DOE-ORR-EMDF-ROD.pdf>

[ii] Record of Decision for Comprehensive Environmental Response, Compensation, and Liability Act Oak Ridge Reservation Waste Disposal at the Environmental Management Disposal Facility, Oak Ridge, Tennessee (DOE/OR/01-2794&D2/R2).

https://www.tn.gov/content/dam/tn/environment/remediation/documents/orr/emdf-docs/rem_emdf-rod-d2r2_09-30-2022.pdf

[iii] **Threshold criteria.** Overall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection.

40 CFR § 300.430(f)(1)(i)(A).

[iv] EMDF ROD Section 2.12.2.3, page 2-50 includes: “DOE has completed the [Performance Assessment (EMDF PA) / Composite Analysis (EMDF CA)] process to demonstrate protectiveness with methodologies described within DOE Orders; a supplemental analysis will be performed to demonstrate protectiveness using CERCLA methodology.”

[v] Retired environmental professionals’ February 28, 2024, letter, Attachments 1, 2, 3, 4, 5, and 6.

[vi] Retired environmental professionals’ February 28, 2024, letter, Attachments 3 and 5.

[vii] CERCLA 120(a)(2) also 42 U.S. Code § 9620(a)(2).

[viii] Tennessee Department of Environment and Conservation (TDEC) 1200-2-11-.17(1)(h) later renumbered TDEC Rule 0400-20-11-.17(1)(h) requiring: “The hydrogeologic unit used for disposal shall not discharge groundwater to the surface within the disposal site.” (EMWMF ROD Page 2-74)

[ix] TSCA at 40 CFR § 761.75(b)(3) requiring: “There shall be no hydraulic connection between the site and standing or flowing surface water.” (EMWMF ROD Page 2-73)

[x] The Oak Ridge Environmental Information System (OREIS) includes sampling data for the EMWMF underdrain discharge to surface water beginning about March 15, 2004, and for EMWMF landfill wastewater discharges to surface water monitored at the sedimentation pond V-Weir beginning about August 27, 2002.

[xi] EMDF ROD pages 2-69 and 2-70 include: “As the EMDF design progresses, and as additional field studies are conducted, final discharge limits for relevant radionuclides will be developed and documented in a post-ROD FFA primary document (e.g., RAWP) with EPA and TDEC approval, taking into consideration technically justified site-specific information, including the discharge location, stream conditions at that location, and additional observed factors such as bioaccumulation of certain radionuclides within game fish in Bear Creek.”

The ROD discussion implies altering ROD Table 2.9 “PRG/cleanup levels” after ROD signing. These levels were developed using DOE assumed bioconcentration factors. Modifications based on observed bioaccumulation factors would alter ROD Table 2.9 “PRG/cleanup levels.” Further, the ROD discussion does not include complying with CWA ARARs such as TDEC Rule 0400-40-03-.05(4) which specifies stream flow requirements for application of water quality criteria.

[xii] Retired environmental professionals’ February 28, 2024, technical letter, Attachments 2, 3, 4, 5, and 6.

[xiii] Retired environmental professionals’ February 28, 2024, technical letter, Attachments 5 and 6.

[xiv] TDEC Rule 0400-40-03-.03(4)(j) Footnote (c).

[xv] EPA Administrator Andrew R. Wheeler’s December 31, 2020, final decision letter to Mr. John A. Mullis II (DOE) and Commissioner David W. Salyers (Tennessee Department of Environment and Conservation or TDEC) resolving the dispute regarding the Focused Feasibility Study for Water Management for the Disposal of CERCLA Waste on the Oak Ridge Reservation, Oak Ridge, Tennessee.

https://www.tn.gov/content/dam/tn/environment/remediation/documents/orr/emdf-docs/rem_emdf-ffs-wm-decision-epa-dispute-resolution_12-31-2020.pdf .

[xvi] OSWER 9285.6-20 Distribution of the “Radiation Risk Assessment At CERCLA Sites, Q&A” Radiation Risk Assessment At CERCLA Sites: Q & A May 2014, Question 29, page 25 at <https://semspub.epa.gov/work/HQ/176329.pdf>.

[xvii] For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. 40 C.F.R. § 300.430(e)(2)(i)(A)(2).

[xviii] “The Oak Ridge Cleanup: Protecting the Public or the Polluter” by Charles Openchowski in the journal *Environmental Law Reporter* (Vol. 53, Issue 3 (March 2023), pp. 10188-10211).

[xix] Retired environmental professionals’ February 28, 2024, letter, Page 4.

[xx] EMDF ROD Page A-56, TDEC Rule 0400-40-03-.05(6): *“The criteria and standards provide that all discharges of sewage, industrial waste, and other waste shall receive the degree of treatment or effluent reduction necessary to comply with water quality standards, or state or federal laws and regulations pursuant thereto, and where appropriate will comply with the “Standards of Performance” as required by the Tennessee Water Quality Control Act, (T.C.A., §§ 69-3-101, et seq.).*

[xxi] EMDF ROD Page A-56, TDEC Rule 0400-40-03-.05(4): *“Fish and aquatic life water quality criteria shall generally be applied on the basis of stream flows equal to or exceeding the 7-day minimum, 10-year recurrence interval. All other criteria shall be applied on the basis of stream flows equal to or exceeding the 30- day minimum 5-year recurrence interval.”*

[xxii] EMDF ROD Page A-60, TDEC Rule 0400-40-05-.08(1)(b): *“For new sources, technology-based effluent limitations shall require the greatest degree of effluent reduction achievable through application of the best available demonstrated control technology, which shall be new source performance standards, if available.”*

[xxiii] April 2022, EPA Approved list of Impaired and Threatened Waters (i.e., the 303(d) list) at <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html>

[xxiv] EMDF ROD Page A-6, TDEC Rule 0400-40-03-.06(2)(a) requires that *“New or increased discharges that would cause measurable degradation of the parameter that is unavailable shall not be authorized. Nor will discharges be authorized if they cause additional loadings of unavailable parameters that are bioaccumulative or that have criteria below current method detection levels.”*

[xxv] Retired environmental professionals’ February 28, 2024, letter, Attachment 5.

[xxvi] Retired environmental professionals’ February 28, 2024, letter, Attachment 5.

[xxvii] Retired environmental professionals’ February 28, 2024, letter, Attachment 7.

[xxviii] Retired environmental professionals’ February 28, 2024, letter, Page 7.

[xxix] CERCLA 121 (d) also 42 U.S. Code § 9621(d).

[xxx] EMDF ROD pages 2-81, 2-82, and 2-83.

[xxxi] Performance Assessment for the Environmental Management Disposal Facility at the Y-12 National Security Complex, Oak Ridge, Tennessee, April 23, 2020 (UCOR-5094/R2).

https://www.tn.gov/content/dam/tn/environment/remediation/documents/orr/emdf-docs/rem_emdf-pa-r2-compiled_04-28-2020.pdf

[xxxii] EMDF PA page C-43.

[xxxiii] Retired environmental professionals' February 28, 2024, letter, Page 5.

[xxxiv] Retired environmental professionals' February 28, 2024, letter, Attachment 2.

[xxxv] Retired environmental professionals' February 28, 2024, letter, Attachment 2.

[xxxvi] Retired environmental professionals' February 28, 2024, letter, Attachment 1.