

LANL 2002

LANL: General

**Subject: Radionuclide standards**

**Date: Fri, 22 Nov 2002 17:23:54 -0600**

**From: Nelson.Russell@epamail.epa.gov**

**To: ralph\_fordschmid@nmenv.state.nm.us, john\_montgomery@nmenv.state.nm.us**

Ralph and John,

I was glad to hear your interest in radionuclides standards given upcoming meetings with LANL. If memory serves, NMED proposed some radionuclide standards in the 1995 revision. EPA HQ was unsure of how to handle such submissions given a vague knowledge of the Atomic Energy Act of 1954. Despite my disagreement, I was told that EPA could not approve such standards, despite a clear requirement to act (either to approve or disapprove). But earlier this year, thanks to Region 8 pushing hard on the issue, we were able to come to agreement with HQ on EPA approval of radionuclide standards in Colorado. John, I encourage the Department to consider taking another look at radionuclide standards given the position established with Colorado's standards.

To follow-up on the discussion Ralph and I were in on earlier today, I put in a call to Dave Moon, the Region 8 coordinator for Colorado, concerning the issue. He suggested that you guys contact Paul Frohardt with the Colorado Dept. of Public Health and Environment. I understand that Paul is the Administrator to the Commission for CDPHE and is familiar with Colorado's proposal. Dave also suggest that your attorneys contact Jerry Goad. Jerry is an attorney with Colorado and is familiar with the radionuclide issue. You can get Jerry's number from Paul.

I have attach some background documents that should help clarify that certain discharges of radioactive materials regulated under the AEA are preempted from regulation under the CWA, but can be regulated under State/Tribal authority. That authority is based on agreements States/Tribes have made with the Nuclear Regulatory Commission. New Mexico is an Agreement State, although I don't have details on the content of the agreement. I've included a copy of the Region 8 approval of Colorado's radionuclide standards, which explains this caveat in their approval.

I hope this information helps. If either of you have any questions, give me a call. If I don't know the answer, I will do my best to find it for you.

(See attached file: Rad options\_CO.wpd) (See attached file: whitepaper2\_20\_02.wpd) (See attached file: R6 rad summary.wpd)

Russell Nelson (6WQ-EW)  
Regional Water Quality Standards Coordinator  
EPA Region 6  
1445 Ross Ave.  
Dallas, TX 75202

(214) 665-6646  
(214) 665-6689 fax



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## OPTIONS FOR AGENCY ACTION UNDER CWA § 303(c) ON STATE/TRIBAL WATER QUALITY STANDARDS FOR RADIOACTIVE MATERIALS

**Issue:** What action should EPA take under section 303(c) of the Clean Water Act (CWA) on State/Tribal water quality standards for radioactive materials, some of which may be regulated under the Atomic Energy Act (AEA) and are, therefore, not “pollutants” subject to regulation under the CWA?

### **Background:**

- ▶ Section 502(6) of the CWA includes “radioactive materials” in the definition of pollutants.
- ▶ However, the Supreme Court, based on legislative history, concluded that the “pollutants” subject to regulation under the CWA do not include “source, byproduct, and special nuclear materials” as defined by the AEA. Train v. Colorado Public Interest Research Group, Inc., 426 U.S. 1 (1976). (See attachment for definitions of those materials.)
- ▶ This decision is reflected in EPA’s regulations at 40 CFR 122.2, which defines the term “pollutant” to include radioactive materials except those regulated under the AEA.
- ▶ EPA maintained this definition of pollutant in the recent TMDL regulations.
- ▶ Under section 510 of the CWA, States and Tribes can adopt and enforce pollutant abatement requirements that are more stringent than CWA requirements. However, nothing in section 510 gives States the authority to regulate any area that has been preempted by federal law (i.e., write NPDES permits for radioactive materials regulated by the AEA).
- ▶ The NRC may enter into an agreement with a State allowing the State to regulate radioactive materials covered by the AEA in certain limited circumstances. However, the NRC cannot relinquish its authority to regulate radioactive discharges from nuclear power plants, or quantities of materials that may constitute a critical mass. The NRC has entered into such agreements with 31 States.
- ▶ In the past, most Regions have approved water quality standards containing radionuclide criteria for at least one State in their jurisdiction. These approvals are viewed as inadvertent, since most were approval actions taken on an entire set of a States’ water quality standards, and did not specify exactly which portion of the standards were approved, or under what authority.

## **Recent Actions:**

- ▶ Most recently, Regions 3, 4, and 6 took “no action” on State water quality standards submissions containing water quality criteria for radionuclides determined to be outside the scope of the CWA definition of “pollutant”. This is the approach described below in Option 3.
  
- ▶ Colorado and the NRC have entered into an agreement, thereby allowing the State to regulate under State law radioactive materials covered by the AEA in certain limited circumstances. (See attachment for discussion of limitations.) Subsequent to the NRC agreement, Colorado adopted, and submitted to Region 8 for action under section 303(c), new/revised water quality criteria for radionuclides, including source, byproduct, and special nuclear materials. As the permitting authority for Federal facilities in Colorado, Region 8 recently issued the NPDES permit for the Rocky Mountain Flats nuclear power facility with effluent limitations for radionuclides, including some source, byproduct, and special nuclear materials. The Region's decision to include these limits (i.e., to regulate these discharges under the CWA) was based on their review of Colorado's agreement with the NRC and the fact that Rocky Mountain Flats is no longer a production or utilization facility and the conditions of the State's Section 401 certification.
  
- ▶ The Spokane Tribe expects to receive TAS approval soon. In the meantime, the Tribe has adopted, and submitted to Region 10 for action under section 303(c), water quality criteria for radionuclides, including source, byproduct, and special nuclear materials. The Tribe's main concern is radionuclides from Midnight Mine, a closed uranium mine that is on Superfund's National Priorities List for cleanup. The waters from the mine's treatment facility flow into creeks that are under the jurisdiction of the Tribe. EPA issued an NPDES permit (based on the EPA effluent guidelines for uranium mining) for this facility which will expire this fall. The Tribe hopes that its radionuclide criteria will serve as Applicable or Relevant and Appropriate Requirements (ARARs) for the Superfund site, and thus establish the cleanup level for the site. In addition, Region 10 would be responsible for both NPDES permits and TMDLs based on the Tribe's CWA water quality standards.

## White Paper on WQS for Radioactive Materials

### Legislative and Regulatory Background

Section 502(6) of the CWA includes “radioactive materials” in the definition of “pollutant.” EPA’s regulations at 40 CFR 122.2 define pollutant as, among other things, “radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et. seq.*)).” In 1976, the Supreme Court rejected a challenge to this regulation, concluding that “the ‘pollutants’ subject to regulation under the FWPCA do not include source, byproduct, and special nuclear materials, and that the EPA Administrator has acted in accordance with his statutory mandate in declining to regulate the discharge of such materials.” Train v. Colorado Public Interest Research Group, Inc., 426 U.S. 1, 25 (1976). EPA’s regulations reflect the Supreme Court’s decision in a Note in the definitions section: “NOTE: Radioactive materials covered by the Atomic Energy Act are those encompassed in its definition of source, byproduct, or special nuclear materials. Examples of materials not covered include radium and accelerator-produced isotopes. See *Train v. Colorado Public Interest Research Group, Inc.*, 426 U.S. 1, (1976).” See Attachment 1 for a description of the various types of radioactive materials that fall under AEA and CWA jurisdiction, respectively.

Source, byproduct, and special nuclear materials (henceforth “AEA materials”) may be regulated by either the Nuclear Regulatory Commission (NRC) or the Department of Energy (DOE), depending upon their source. Approval of water quality standards is not itself “regulation” under the CWA. Water quality standards are implemented through National Pollutant Discharge Elimination System (NPDES) permits. Because the CWA does not authorize EPA to write NPDES permits for AEA materials, it is important that EPA decide how to review and approve/disapprove water quality standards for radioactive materials that may not be implemented under the CWA.

### Review of Water Quality Standards Containing Criteria for Radioactive Materials

Water quality standards apply to waterbodies, usually on a statewide basis. However, federal jurisdiction for radioactive materials is defined in part by the source or activity from which a material is generated. Therefore, EPA can only definitively identify a few types of radioactive materials as being CWA “pollutants” when reviewing water quality standards (e.g., radium, accelerator-produced isotopes). Similarly, only a few materials have been specifically identified as being exclusively regulated under the AEA. For example, NRC has sole regulatory authority with regard to source, byproduct, and special nuclear materials in quantities sufficient to form a critical mass; radioactive discharges from nuclear power plants; and certain specified activities including the construction and operation of any production or utilization facility. Final determinations on all other materials must be made on a site-specific basis (i.e., according to how the material came to be in an effluent or waterbody).

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In light of the above, the Office of Science and Technology (OST) recommends the following action when states or authorized tribes submit to EPA new or revised water quality standards containing criteria for radioactive materials: Regions should approve those standards if they are consistent with CWA Section 303(c), but in taking this action, EPA should acknowledge that some radioactive materials may be regulated under the AEA and that a final determination on whether or not the radioactive materials are properly regulated under the CWA in a specific instance may be made at the time such materials are proposed to be regulated.

Recognizing that discharges of radioactive materials regulated under the AEA are not subject to regulation under the CWA, we also recommend that any approval letter include a statement that our approval only applies to radioactive materials subject to CWA regulation. See Attachment 2 for suggested language.

OST is recommending this approach because it allows the Regions to move forward with approval/disapproval decisions on state and tribal water quality standards submissions without having to make final determinations at that time whether the radioactive materials are subject to regulation under the AEA at all potential sites where CWA regulation will be considered.

**ATTACHMENT 1**

*Additional information that may help Regional Offices determine whether radioactive materials are subject to the AEA:*

<b>Statutory Coverage of Radioactive Materials</b>	
<b>CWA Materials</b>	<b>AEA Materials</b>
Radium	“Source material” is defined as “(1) uranium, thorium, or any other material which is determined by the [Nuclear Regulatory] Commission pursuant to the provisions of section 2091 of [Title 42, United States Code] to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.”
<p>“Accelerator-produced isotopes”</p> <p>Accelerators are used in sub-atomic particle physics research.</p>	<p>“Byproduct material” is defined as “(1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.” See <u>Waste Action Project v. Dawn Mining Corp.</u>, 137 F.2d 1426 (9th Cir. 1998) (holding that uranium mill tailings were not “pollutants” regulated by EPA because they were included in the definition of “byproduct material” in the AEA, according to a 1978 amendment of that law).</p>

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“Naturally-occurring radioactive materials” defined as materials whose radioactivity has been enhanced (radionuclide concentrations are either increased or redistributed where they are more likely to cause exposure to man) usually by mineral extraction or processing activities. Examples are exploration and production wastes from the oil and natural gas industry and phosphate slag piles from the phosphate mining industry. This term is not used to describe or discuss the natural radioactivity of rocks and soils, or background radiation, but instead refers to materials whose radioactivity is technologically enhanced by controllable practices.

“Special nuclear material” defined as “(1 plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 2071 of [Title 42, U.S.C.], determines to be special nuclear material, but does not include source material; or (2) any material actinically enriched by any of the foregoing, but does not include source material.”

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## ATTACHMENT 2

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**Suggested language for Regions to use when taking action on state or tribal water quality standards that contain criteria or other provisions for radioactive materials:**

*EPA is approving these water quality criteria as consistent with section 303(c) of the CWA and the implementing federal regulations at 40 CFR 131.11 insofar as these water quality criteria are established for radioactive materials which are not regulated under the Atomic Energy Act of 1954 (AEA). Federal jurisdiction for radioactive materials is defined in part by the source or activity from which a material is generated. Insofar as these water quality criteria are for radioactive materials subject to regulation under the AEA, EPA is taking no action.*

## REGION 6 EXECUTIVE SUMMARY

**DATE:**

**TOPIC:** Action on Water Quality Standards for Radionuclides

**DEADLINE OR DUE DATE:**

**RA/DRA ACTION REQUIRED:**

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### BACKGROUND INFORMATION:

#### Train decision

The 1976 U.S. Supreme Court case Train v. Colorado Public Interest Research Group, 426 U.S. 1, 96 S.Ct. 1938, 48 L.Ed.2d 434 (1976) has been cited as a basis for EPA to take no action on any state standard for certain radioactive materials. The Train case should not prevent the EPA from acting on these standards.

In the Train case, some Colorado groups sued the EPA, to compel EPA to include effluent limits on radioactive materials in NPDES permits for the Fort St. Vrain Nuclear Generating Station and Rocky Flats, which was then a nuclear weapons manufacturing facility. The Supreme Court held that the EPA had properly omitted these effluent limitations from the permits, because these radioactive materials were not "pollutants" subject to EPA regulation under the Clean Water Act (CWA).

The particular radioactive materials held not to be "pollutants" are known as "AEA materials." AEA materials consist of source materials, byproduct materials, and special nuclear materials, which are described in more detail in the attachment to this memorandum.

#### Water Quality Standards are Not Regulation and are not Limited to "Pollutants"

The Train case does not prevent EPA from approving standards for AEA materials, because (1) water quality standards are not "regulation" and (2) water quality standards are not limited to "pollutants."

According to the July 9, 1999 preamble to EPA's proposal of the Alaska rule, water quality standards

serve both as a description of the desired water quality for particular waterbodies and as a means of ensuring that such quality is attained and maintained. [64 FR, 37072, 37073.]

Describing desired water quality is not necessarily a regulatory function. However,

providing a means of ensuring that water quality is attained and maintained is a regulatory function. Water quality standards are typically implemented, through enforceable requirements in Section 402 or 404 permits or in Section 401 certifications, which are clearly regulatory. In other words, water quality standards are not self-implementing.<sup>1</sup>

In Pronsolino v. Marcus, 91 F.Supp.2d 1337 (N.D. Calif. 2000), the court drew a distinction between regulatory and non-regulatory uses of water quality standards. It held:

- water quality standards “did not identify and directly regulate pollutants. Rather, they stated a desired condition of the water.” (91 F.Supp.2d at 1341)
- standards “did not exempt any rivers or waters . . . [n]or was any distinction drawn between point sources and nonpoint sources.” (91 F.Supp.2d at 1343)
- “the standards-setting process of Section 303 plainly applied to waters polluted by point sources as well as nonpoint sources, either alone or in combination.” (91 F.Supp.2d at 1343)
- “Congress imposed direct NPDES regulation only on point sources.” (91 F.Supp.2d at 1346)
- EPA’s potential withholding of grant money from states for failure to implement nonpoint source TMDLs is not “regulation.” (91 F.Supp.2d at 1355)

Further, water quality standards are not limited to “pollutants.” The term “pollutant” does not appear in Section 303(c) of the CWA. Water quality standards encompass more than what either the CWA itself or our regulation defines as a “pollutant.” For example, many states have

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<sup>1</sup>As another explanation of the uses for standards, EPA stated, in the preamble to the proposal of the Alaska rule:

The CWA prescribes various uses for water quality standards. For example, they are used as benchmarks for evaluating proposals such as basin grants under section 102(c), plans for the Chesapeake Bay under Section 117(b)(2), water quality management planning under section 205(j), and contained disposal facilities for dredged spoil under 33 U.S.C. 1293(a). Water quality standards are also the basis for identifying impaired waters under sections 303(d)(1)(A) and 304(l) and developing total maximum daily loads (TMDLs) and waste load allocations under section 303(d)(1)(C). Water quality standards are the foundation for water quality-based effluent limitations for NPDES permits under section 301(b)(1)(C), serve to limit variances under Section 301(h) and (m), and are a floor when permit limitations are relaxed under section 402(o)(3). Under section 401, they also serve as a basis for granting or denying State or Tribal certifications for federal licenses or permits for activities that may result in a discharge. [64 FR at 37073].

criteria for dissolved oxygen, which is not a “pollutant,” in their water quality standards.

#### **CURRENT STATUS:**

A state may regulate source and byproduct materials and special nuclear materials in quantities not sufficient to form a critical mass if it has entered in an agreement with the Atomic Energy Commission (AEA), which is now the Nuclear Regulatory Commission (NRC) that allows the state to do so. See Train, 96 S.Ct. at 1945, n. 12, citing 42 U.S.C. Section 2021.

According to 42 U.S.C. Section 2021, the NRC is authorized to enter into agreements with any state “providing for the discontinuance of the regulatory authority of the Commission” with respect to byproduct materials, source materials, or special nuclear materials in quantities not sufficient to form a critical mass. While any such agreement is in effect, “the State shall have authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards.” Even with an agreement, a state cannot regulate the construction and operation of any production or utilization facility, including any nuclear power plant, or any uranium enrichment facility.<sup>2</sup>

Most states have entered into such agreements. For example, Colorado entered into such an agreement in 1968.<sup>3</sup> Colorado’s agreement provides that “the Commission shall discontinue, as of the effective date of this agreement, the regulatory authority of the Commission . . . with respect to . . . [b]yproduct materials, [s]ource materials, and [s]pecial nuclear materials in quantities not sufficient to form a critical mass.” Colorado’s agreement also provides that the Commission retains its authority to regulate any production or utilization facility.

Because the NRC has expressly discontinued its authority to regulate AEA materials in Colorado, these materials are no longer regulated under the AEA and, at least for facilities that the agreement allows Colorado to regulate, can be considered “pollutants” for which EPA may set effluent limitations.

For other states having similar agreements with the NRC, the same argument would apply. Without such an agreement, there appears to be no authority for a state to include effluent limits for AEA materials in its NPDES permits (or insist, though certification, that EPA include them in EPA-issued permits). New Mexico has an agreement with NRC.

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<sup>2</sup>Other areas that states may not regulate, even with these agreements, are the export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility; the disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission; and the disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of hazards or potential hazards thereof, not be disposed of without a license from the Commission. (42 U.S.C. Section 2021(c).)

<sup>3</sup>See 33 Fed. Reg. 2400 (January 31, 1968) and 47 Fed. Reg. 20057 (May 10, 1982).

## TECHNICAL / COMMUNITY CONCERNS:

### Does Any NPDES Permit Set Effluent Limits for AEA Materials?

Yes. The NPDES permit that EPA Region VIII issued to Rocky Flats contained effluent limitations for gross alpha and gross beta. The State of Colorado, whose water quality standards for gross alpha and gross beta pre-dated the Alaska rule, issued a Section 401 certification with the understanding that the permit would include these limitations.<sup>4</sup> EPA's Statement of Basis for the permit cited Colorado's agreement with the NRC and the fact that Rocky Flats was no longer a production and utilization facility. (At the time of the Train decision, Rocky Flats was being used for weapons production, meaning that Colorado's agreement with the AEC did not allow Colorado to regulate it.) Although the Department of Energy and the other permittees objected to the effluent limitations for radionuclides during the public comment period on the draft permit and, after the permit was issued, appealed it to the Environmental Appeals Board, their EAB appeal was limited to an unrelated issue.

### Would EPA and NRC Duplicate Each Other's Regulation If EPA Approved Standards for AEA Materials?

No. As mentioned above, water quality standards are not self-implementing. Further, a state may regulate AEA materials only when the NRC expressly agrees to discontinue its authority over those materials in that state and recognizes the state's authority to regulate them.

### What About the "Beyond the Reach of" Statement in the Train Decision?

At one point, the Train decision says that byproduct, source, and special nuclear materials are "beyond the reach" of the Clean Water Act. (96 S.Ct. at 1948.) In other places, the opinion refers to EPA's authority to "regulate" these materials. See, for example, the first sentence and the last paragraph of the opinion, which are set forth below:

The issue in this case is whether the Environmental Protection Agency (EPA) has the authority under the Federal Water Pollution Control Act (FWPCA), as amended . . . to regulate the discharge into the Nation's waterways of nuclear waste materials subject to regulation by the Atomic Energy Commission and its successors under the Atomic Energy Act of 1954 (AEA). (96 S.Ct. at 1939, emphasis added).

. . . .  
We conclude, therefore, that the 'pollutants' subject to regulation under the FWPCA do not include source, byproduct, and special nuclear materials, and that the EPA Administrator has acted in accordance with his statutory mandate in declining to regulate the discharge of such materials. The judgment of the Court of Appeals is [r]everse.

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<sup>4</sup>Not all AEA materials discharged from Rocky Flats were regulated under the NPDES permit. Some AEA materials, such as plutonium, were regulated under a separate agreement.

Construing the opinion as a whole, it is reasonable to interpret the “beyond the reach” language to mean “beyond the regulatory reach.” We do not see the “beyond the reach” statement as preventing EPA from approving state water quality standards for AEA materials.

#### What Happens If EPA Does Not Act on Standards Submitted for AEA Materials?

Colorado takes the position that EPA has a mandatory duty to act on Colorado’s standards submission. According to a Senior Assistant Attorney General, it is likely that Colorado would sue EPA for failing to act on Colorado’s submission. In the opinion of the Office of Regional Counsel, we would have a poor chance of prevailing in such a lawsuit.

#### What About Approving Only Those Standards that Can be the Basis for Regulation?

One option is for EPA to take action only on those standards not subject to regulation under the AEA.<sup>5</sup> We do not believe that this is a viable option. Whether a state-NRC agreement may authorize a state to regulate AEA materials depends not only on the type of AEA materials in question but also on the type of facility. For example, as mentioned above, the Atomic Energy Act prohibits the NRC from terminating its regulatory authority over production or utilization facilities. Thus, approving only those standards that are not subject to AEA regulation could mean approving the standards in segments receiving discharges from facilities that states may regulate and not approving them for segments receiving discharges from facilities that states may not regulate. This would be unworkable.

Moreover, approving standards only where they can be used in a regulatory manner is inconsistent with the well-established principle that standards apply throughout a waterbody and in all waters of the United States. As mentioned above, the court in the Pronsolino case made clear that although EPA does not regulate nonpoint source discharges, water quality standards apply to all waters, regardless of whether they are impacted by point sources, nonpoint sources, or a combination of both.

#### **FUTURE/RECOMMENDED ACTIONS:**

##### What is the Consequence to the Environment?

We understand from conversations with counsel for the NRC that the NRC does not regulate discharges of AEA materials from facilities it licenses. With the Alaska rule in place, if EPA does not approve state standards for AEA materials, then there would be a regulatory gap. Nobody would regulate these discharges.

On the other hand, if EPA approves state standards for AEA materials, effluent

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<sup>5</sup>This is what we understand to be “Option 3” from an earlier Headquarters briefing paper. The same briefing paper also had an “Option 2,” which is to act on all standard submissions for AEA materials, with a statement that the standards are to be implemented in accordance with applicable law. “Option 2” is what the Region is recommending in this memorandum.

limitations based on these standards can be included in NPDES permits as allowed by state-NRC agreements. We believe that this is sound policy. We encourage the Office of Water to allow the Regions to proceed with approving state standards for AEA materials.

**CONTACT/TELEPHONE NUMBER:** Russell Nelson 665-6646