

STATE OF SOUTH CAROLINA
IN THE COURT OF APPEALS

APPEAL FROM THE ADMINISTRATIVE LAW COURT

Ralph King Anderson, III, Administrative Law Judge

Case No. 04-ALC-07-0126-CC

Sierra Club Appellant,

vs.

South Carolina Department of Health and Environmental Control
and Chem-Nuclear Systems, LLC Respondents.

INITIAL REPLY BRIEF OF APPELLANT

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OTHER AUTHORITIES:

The American Heritage Dictionary of the English Language, Houghton Mifflin Co., 2000

Summary of Argument

The Brief of Respondents contains numerous misstatements and mischaracterizations of the Appellant's arguments, in addition to its misapplication of the applicable regulations. The crux of Respondents' argument is that because release of radioactive waste below a set concentration limit is "allowed," and that concentration limit has not yet been exceeded, Chem Nuclear should not be required to improve its design. (Resp. Brief p. 24-25). The reality is that neither Chem Nuclear nor DHEC have any control over the concentration of the releases, which 2005 ALC Order found to be "varying with the amount of rainfall, not necessarily as a result of new storage methods." (R. p. ____, 2005 Order, FF # 46).

A fundamental inconsistency with Respondents' arguments, and the ALJ's 2012 Opinion, is that the disposal units cannot be designed to minimize migration of water into or out of vaults, while at the same time be designed to allow and encourage water to enter and leave the vaults. It is uncontradicted that the disposal units are designed to be unsealed, ungrouted, left open while being filled with radioactive waste, with holes in the bottoms such that water is encouraged to enter into and flow out of the units. Similarly inconsistent, the disposal units and engineered barriers cannot be designed to prevent contact between waste and the surrounding earth while at the same time be "designed to allow liquids to infiltrate the soil beneath the trenches." (R. p. ____ 2005 Order, FF#103). The Respondents, and the ALC, ignore the fact that water is the vector, that it comes into contact with waste by falling into or rising into the vaults, and once in contact with waste it carries that waste into the surrounding soil. The migration of waste into the surrounding soil and then into the groundwater is the reason a tritium plume has formed beneath the site. (R. pp. ____, 2005 Order, FF# 29 & 35).

In sum, the Respondents' Brief has the same flaws as the ALC's 2012 Opinion: both suffer from broad, conclusory statements about compliance without ever actually addressing head on the Appellant's well-supported position that migration of water onto and out of the disposal units is not minimized and contact between waste and the surrounding earth is not prevented. S.C. Code Ann. Reg. 61-63, Section 7.11.11.2, 3 & 7.

I. The Permit Fails to Meet the Requirements of Section 7.11.11, Which Require Minimization and Prevention of Contact with Waste

Section 7.11.11 speaks directly to design standards for disposal units and engineered barriers by requiring Chem Nuclear to 1) "minimize the migration of water onto the disposal units;" 2) "minimize the migration of waste or waste contaminated water out of the disposal units;" and 3) prevent "contact between the waste and the surrounding earth." S.C. Code Ann. Regs. § 61-63, Sections 7.11.11.1, 7.11.11.2 & 7.11.11.7.

A. A Design that Encourages and Promotes Contact Between Waste and Water Cannot at the Same Time Minimize Contact Between Waste and Water

Minimize cannot mean "encourage" or "promote," yet encouraging and promoting contact with water is the purposes of the vaults and trenches as designed. Respondents' brief overlooks the obvious consequence of the fact that 1) the vaults contain the waste, 2) the design "allows for drainage of water out of the vault," 3) that water is allow to contact the waste through rain and groundwater, and 4) that then the semipermeable trench allows waste contaminated water to migrate into the groundwater. (Resp. Brief p. 9 & 27).

Respondents' arguments related to the engineered barriers simply fail to dig into the natural, unavoidable consequences of what is going on here. The engineered barriers are not

sealed or grouted against water intrusion, thus allowing and encouraging rain to enter the vaults. There are holes in those engineered barriers to allow water that has been in contact with waste to flow out of the barriers, as well as allow ground water to rise up into the vaults which has happened in the past. (R. p. ____, 2005 Order, FF# 55). The engineered barriers include partially impermeable floors to allow water that has fallen into and flowed out of vaults, coming into contact with waste, to infiltrate into the surrounding soil. The Respondents do not dispute any of these facts, nor would they have grounds to do so. The engineered barriers provide structural stability, as pointed out by the Respondents, but entirely fail to *minimize* contact between waste and rainwater or waste and groundwater.

Respondents frame Appellant's argument to say that the requirement for minimizing contact with water is automatically violated simply upon demonstration that waste is, in fact, coming into contact with water. (Resp. Brief, p. 11). That is a gross misstatement of Appellant's argument. Appellant's instead argue the fact that the engineered barriers – vaults and trenches – are designed to *allow and encourage* water to migrate into and out of those barriers (Resp. Brief, p. 9), and that such contact does occur, demonstrating that the requirement of minimization of contact has not been met. The engineered barriers cannot be designed to explicitly allow and encourage water contact with waste while at the same time be designed to minimize such contact. Indeed, the regulations require that those barriers be designed to act as true barriers such that water is not allowed and encouraged to come into contact with waste and in turn waste to come into contact with the surrounding soil. The fact that the design specifically *allows, encourages and promotes* contact between waste and water is in direct conflict with the requirements to minimize migration of water onto disposal units, to minimize migration of waste or waste

contaminated water out of disposal units, and to prevent contact between waste and the surrounding earth, and standing alone is enough to necessitate reversal of the ALC's Order. S.C. Code Ann. Reg. 61-63, Section 7.11.11.(1), (2) & (7).

**B. A Design that Encourages Water in Trenches to Infiltrate Into the Soils
Cannot Also Prevent Contact Between Waste and the Surrounding Earth**

On the issue of whether the permit “prevents the contact between waste and the surrounding earth,” Section 7.11.11.7, Respondents utterly fail to address this important requirement,¹ essentially reiterating the ALC's 2012 conclusory statement that the engineered barriers do prevent contact. (Resp. Brief p. 31). The Respondents' and ALC's interpretation of this regulation as requiring only that nuclear waste no be placed directly on bare ground is illogical and makes a mockery of the regulations aimed at protecting the health and safety of residents of this state. If water can come into contact with waste in vaults through the unsealed lids and then leave through the unsealed bottoms, and the trenches are lined with partially permeable clay sand or sandy clay, it is impossible for waste not to come into contact with surrounding earth unless no rainwater or groundwater ever reaches the vault – a scenario that contradicts all evidence in the record.

Respondents frame Petitioners' argument as though the permit “must prevent any and all contact” between waste, water and the surrounding earth. While Petitioner certainly asserts that prevention of contact is the goal of Section 7.11.11.7, *at a minimum Chem Nuclear should be*

¹The Respondents' provide a half-hearted attempt at refutation, which is to interpret this section in a manner that means actual waste cannot be placed directly on the soil or trench bottom. Such a narrow reading ignores the fact that if water comes into contact with waste, that water will carry waste into the sandy clay/clay sand trench bottom, which is necessarily allowing waste to come into contact with the surrounding earth.

required to take active efforts to avoid contact rather than active efforts to encourage contact.

The permit fails in this fundamental respect by allowing and encouraging water to flow onto the vaults, flow out of the vaults, and flow into the surrounding soil after having come into contact with waste. Respondents admit the design encourages waste contaminated water to seep into the earth below the trenches – a far cry from “minimizing” or “preventing” contact, both of which are standards enunciated in Section 7.11.11.

The ALJ erroneously concluded that unsealed vaults with holes, placed in uncovered trenches with semipermeable floors, represent a design of minimizing contact between waste and water and preventing contact between waste and the surrounding earth. This error is reversible.

II. Respondents Perpetuate the ALC’s Failure to Apply the 2005 Findings to the Applicable Regulations and Fail to Address the Legal Questions Raised

Respondents’ misstatements and misrepresentations indicate at best a lack of understanding Appellant’s arguments, and at worst an attempt to confuse the real questions of law identified in Appellant’s brief. One of these misrepresentations is that Sierra Club asserts that “Chem-Nuclear must prevent ***any and all*** contact between waste and rain water (*i.e.*; there can be ***no contact*** whatsoever). (Resp. Brief p. ____). Sierra Club’s brief clearly identifies the applicable standards, which require ***minimization of contact between waste and water and prevention of contact between waste and the surrounding earth.*** See S.C. Code Ann. Reg. 61-63, Section 7.11.11.2, 3 & 7, App. Brief pp. _____. Another glaring misrepresentation is Respondents’ statement that Sierra Club has “steadfastly argued for the North Carolina design.” (Resp. Brief p. 11). Rather, what Sierra Club has asserted is that the North Carolina design is evidence that waste can clearly be kept from coming into contact with water by design – indeed a

design developed by Chem Nuclear.

Later Chem Nuclear points to “evidence in 2005 indicating a decline in tritium concentrations” in support of its assertions that it “has minimized the migration of waste or waste contaminated water out of disposal units since incorporating engineered barriers in its disposal practices.” (Resp. Brief p. 28). This statement not only overlooks the 2005 finding that tritium concentrations are correlated with rainfall, but ignores the plain fact that the engineered barriers are **designed to promote and encourage water to enter into and out of the vaults and, in turn, migrate into the permeable trench floors.**

In addition, while Chem Nuclear faults the Appellant for pointing to evidence of past releases as irrelevant to the question of minimization, it then asks the Court to consider evidence of a decrease of releases to support its theory that contact between waste and water is minimized. The test for regulatory compliance is not whether groundwater travel time or decay rates have led to releases below the regulatory limits; whether access to Mary’s Branch at the point of release is restricted; whether there are consumers or users of Mary’s Branch at the compliance point; whether there is a restrictive covenant prohibiting use of groundwater and surface water for drinking; or whether there are known drinking wells downgradient. (Resp. Brief p. 9). None of these factual assertions put forward by the Respondents address the key questions of whether the disposal units and engineered barriers are designed to minimize contact between waste and water and are designed to prevent contact between soil and the surrounding earth. The Respondents’ apparent belief that it should receive credit for some of these factual assertions shows a startling disregard for the fact that Chem Nuclear is responsible for nuclear waste that has escaped into the surrounding property and waters. The ALJ’s failure to apply the 2005 findings to these legal

standards is reversible error of law.

III. The Goal of Isolation of Waste from Man's Biosphere and Food Chains is Not Being Attained

The concept of "isolation" of waste is implicated because the definition "disposal" is "the isolation of wastes from the biosphere inhabited by man and his food chains by emplacement in a land disposal facility." S.C. Code Ann. Regs. § 61-63, Section 7.2.6. While disposal is defined in the regulations, isolation is not defined.

When the words of a statute are not defined, the Court should look to the plain and ordinary meaning of that word. New York Times Co. v. Spartanburg County School Dist. No. 7, 374 S.C. 307, 649 S.E.2d 28 (2007). If the General Assembly declines to define a term within the statute, the Court should construe the word in accordance with its usual and customary meaning. Adoptive Parents v. Biological Parents, 315 S.C. 535, 543, 446 S.E.2d 404, 409 (1994). Rather than look to the plain and ordinary meaning of the word isolation, the Respondents create their own definition of isolation as "disposal of waste in a manner than is expected to provide **adequate protection** of human health and the environment." (Resp. Brief p. 16 (emphasis added)). This definition of "isolation" effectively writes out any requirement to keep waste "set apart or cut off" from the biosphere inhabited by man and his food chains. The Respondents are effectively telling this Court that the word "isolation" should be replaced with the words "adequate protection." The regulations do not sanction such a cavalier attitude toward harmful radioactive nuclear waste.

The Respondents' statement that "buried waste is isolated through the use of engineered barriers" is simply indefensible, is an oversimplification of the engineered barriers and ignores its

own statements regarding the intent of the design of the vaults and trenches. (Resp. Brief p. 19). Those statements are that the holes allow waste contaminated water to leave the vaults and the sandy clay trench bottoms allow waste contaminate water to infiltrate into the soil. (R.pp. ___, 2005 Order, FF# 47, 48, 101 & 103). If waste was truly isolated, it would not be getting into the ground water and would not be detected throughout the site in extremely high concentrations. (R.p. ___, 2005 Order, FF # 53). The fact that the tritium plume and other wastes have not been detected above allowable limits *yet* is of no moment. Respondents' statement that waste is "isolated" simply because the toxic releases are on its property ignores the obvious fact that water flows and moves below the earth's surface and that the water knows no property boundaries.

IV. Waste is Not Stabilized

The Respondents seem to acknowledge that stability is related to whether waste will be "disturbed." (Resp. Brief p. 22). But the only disturbance Respondents (or the 2012 ALC Opinion) are able to contemplate is disturbance by an "inadvertent intruder." Again, this interpretation trivializes regulations relating to disposal of some of the most potentially hazardous material in this state. Appellant asserts that waste can also be disturbed by the fact that it comes into contact with water and is carried with this water out of its container and into the surrounding earth. Under either scenario, waste or the disposal units are being moved from the location they were placed in at the time of disposal. In other words, the disturbance could be from man or from natural forces, like rain, water infiltration and groundwater movement.

Moreover, the focus here is whether the waste contained in the disposal units is stabilized, not just whether the units themselves are stabilized. If the units are structurally stable, but the waste is not structurally stable and it is escaping those units, being carried by rainwater

and groundwater into the surrounding earth, that waste cannot logically be considered “stable” in its location. One would hope that a nuclear disposal company would not need the government to tell it to use disposal containers that are structurally sound. But this is the exact interpretation argued for the Respondents.

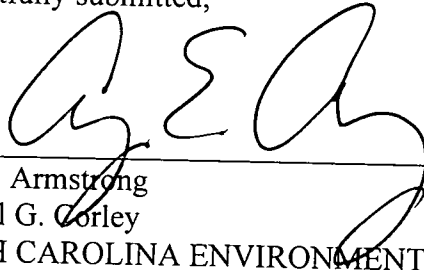
V. The Respondents’ Reliance on ALARA is Misplaced

The Respondents repeatedly point out that the Court found that the permit meets the As Low As Reasonably Achievable” (ALARA) standard, thus waste must be “isolated.” (Resp. Brief p. 17). Yet, this Court in its 2010 Opinion explicitly recognized that the Regulations require more than just compliance with ALARA. Indeed, this Court remanded the case specifically for legal conclusions on standards other than ALARA. The Petitioner is at a loss to understand Respondents’ focus on ALARA, unless it is purely a distraction from the more stringent standards found in 7.11.11 and 7.23.6.

CONCLUSION

For the foregoing errors of law, as well as those identified in the Appellant’s opening brief, the Final Order and Decision on Remand of the Administrative Law Judge should be reversed.

Respectfully submitted,



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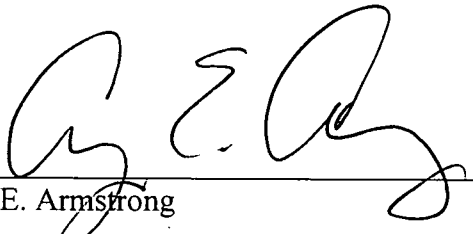
South Carolina Department of Health and Environmental Control and
Chem-Nuclear Systems, Respondents.

CERTIFICATE OF SERVICE

I hereby certify that on this date I served the foregoing Initial Reply Brief upon counsel for the Respondents, by placing copies of same in the United State Mail, addressed to:

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